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ISSUE



## THE BIG REDESIGN

What should be on  
your Web wish list.

## BEST OF THE BEST

Pro tips from our 20th  
annual website contest.

## GOING LIVE

Beta testing:  
scary or smart?

# 50%



of surveyed legislators said their state has an **inadequate number** of cybersecurity personnel.



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ALLIANCE



September 2016

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CITY OF BOSTON

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Publisher:

Alan Cox, [alanc@erepublic.com](mailto:alanc@erepublic.com)

#### EDITORIAL

Editor:

Noelle Knell, [nknell@govtech.com](mailto:nknell@govtech.com)

Managing Editor:

Elaine Pittman, [epittman@govtech.com](mailto:epittman@govtech.com)

Web Editor &

Photographer:

Jessica Mulholland, [jmulholland@govtech.com](mailto:jmulholland@govtech.com)

Assistant News Editor:

Eyrang Eidam, [eeidam@govtech.com](mailto:eeidam@govtech.com)

Chief Copy Editor:

Miriam Jones, [mjones@govtech.com](mailto:mjones@govtech.com)

Copy Editor:

Lauren Harrison, [lharrison@govtech.com](mailto:lharrison@govtech.com)

Senior Editor:

Tod Newcombe, [tnewcombe@govtech.com](mailto:tnewcombe@govtech.com)

Staff Writers:

Ben Miller, [bmiller@govtech.com](mailto:bmiller@govtech.com)

Jason Shueh, [jshueh@govtech.com](mailto:jshueh@govtech.com)

Colin Wood, [cwood@govtech.com](mailto:cwood@govtech.com)

Ryan McCauley, [rmccauley@govtech.com](mailto:rmccauley@govtech.com)

Editorial Assistant:

Julia McCandless, David Rath, Adam Stone

Contributing Writers:

#### DESIGN

Chief Design Officer:

Kelly Martinelli, [kmartinelli@govtech.com](mailto:kmartinelli@govtech.com)

Graphic Designer Pubs:

Kimi Rinchak, [krinchak@govtech.com](mailto:krinchak@govtech.com)

Senior Designer Custom:

Crystal Hopson, [chopson@govtech.com](mailto:chopson@govtech.com)

Production Director:

Stephan Widmaier, [swidm@govtech.com](mailto:swidm@govtech.com)

Production Manager:

[production@govtech.com](mailto:production@govtech.com)

#### PUBLISHING

VPs OF STRATEGIC ACCOUNTS:

Kim Frame, [kframe@govtech.com](mailto:kframe@govtech.com)

Stacy Ward-Probst, [sward@govtech.com](mailto:sward@govtech.com)

Arlene Boeger, [aboeger@govtech.com](mailto:aboeger@govtech.com)

Shelley Ballard, [sballard@govtech.com](mailto:sballard@govtech.com)

Karen Hardison, [khardison@govtech.com](mailto:khardison@govtech.com)

SALES DIRECTORS:

Melissa Sellers, [msellers@govtech.com](mailto:msellers@govtech.com)

Tracy Meisler, [tmeisler@govtech.com](mailto:tmeisler@govtech.com)

Audrey Young, [ayoung@govtech.com](mailto:ayoung@govtech.com)

Lara Roebbelen, [lroebbelen@govtech.com](mailto:lroebbelen@govtech.com)

Carmen Mendoza, [cmendoza@govtech.com](mailto:cmendoza@govtech.com)

Deanne Stupek, [dstupek@govtech.com](mailto:dstupek@govtech.com)

Lynn Gallagher, [lgallagher@govtech.com](mailto:lgallagher@govtech.com)

Kelly Schieding, [kschieding@govtech.com](mailto:kschieding@govtech.com)

ACCOUNT EXECUTIVES:

Paul Dangberg, [pauld@govtech.com](mailto:pauld@govtech.com)

Alice Okali, [aokali@govtech.com](mailto:aokali@govtech.com)

Christine Childs, [cchilds@govtech.com](mailto:cchilds@govtech.com)

Rebecca Regrut, [rregrut@govtech.com](mailto:rregrut@govtech.com)

BUS. DEV. MANAGER:

Lindsey Alberty, [laberty@govtech.com](mailto:laberty@govtech.com)

Kathryn Nichols, [knichols@govtech.com](mailto:knichols@govtech.com)

SR. SALES ADMINISTRATOR:

Kelly Kashuba, [kkashuba@govtech.com](mailto:kkashuba@govtech.com)

SALES ADMINISTRATORS:

Alexis Hart, [ahart@govtech.com](mailto:ahart@govtech.com)

Jamie Barger, [jbarger@govtech.com](mailto:jbarger@govtech.com)

Jane Mandel, [jmandel@govtech.com](mailto:jmandel@govtech.com)

Morgan Rothenbaum, [mrothenbaum@govtech.com](mailto:mrothenbaum@govtech.com)

Ashley Flynn, [aflynn@govtech.com](mailto:aflynn@govtech.com)

Sr. Dir. of Sales Operations: Andrea Kleinhardt, [akleinhardt@govtech.com](mailto:akleinhardt@govtech.com)

Custom Media

Managing Editor:

Jeana Bigham, [jbigham@govtech.com](mailto:jbigham@govtech.com)

Dir. of Web Marketing:

Zach Presnall, [zpresnall@govtech.com](mailto:zpresnall@govtech.com)

Web Advertising Mgr:

Adam Fowler, [afowler@govtech.com](mailto:afowler@govtech.com)

Subscription Coord.:

Ennie Yang, [subscriptions@govtech.com](mailto:subscriptions@govtech.com)

#### CORPORATE

CEO:

Dennis McKenna, [dmckenna@govtech.com](mailto:dmckenna@govtech.com)

President:

Cathilea Robinett, [crobinett@govtech.com](mailto:crobinett@govtech.com)

Executive VP:

Alan Cox, [alanc@govtech.com](mailto:alanc@govtech.com)

CAO:

Lisa Bernard, [lbernard@govtech.com](mailto:lbernard@govtech.com)

CFO:

Paul Harney, [pharney@govtech.com](mailto:pharney@govtech.com)

Chief Marketing Officer:

Margaret Mohr, [mmohr@govtech.com](mailto:mmohr@govtech.com)

Chief Content Officer:

Paul Taylor, [ptaylor@govtech.com](mailto:ptaylor@govtech.com)

Dep. Chief Content Ofc.:

Steve Towns, [stowns@govtech.com](mailto:stowns@govtech.com)

VP Research:

Todd Sander, [tsander@govtech.com](mailto:tsander@govtech.com)

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## IN OUR NEXT ISSUE:

### Your Next Budget Item?

What you need to know when considering a cyberinsurance policy.

### Legislating Security

Examining the role policymakers should have in cybersecurity.

### Connecting the Dots

Public safety joins the conversation as formal structures emerge to combat cyberthreats.



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# Beyond the Portal

**2**016 marks the 20th year of the Center for Digital Government and *Government Technology's* Best of the Web competition. Two decades surely equals several lifetimes in the world of Web design. A stroll through winning portals over the years is a telling one. And while nostalgic retrospectives tend to evoke a simpler time, the opposite can be said for government websites, at least on the surface.

At the contest's inception, government leaders were just wrapping their heads around the Internet's potential as a tool to disseminate information to citizens. In that spirit, more was better. Early Best of the Web winners were text and link heavy. Aesthetics, largely, would come later.


In an effort to bring more organization to all that information, tables and then drop-down menus started to emerge as tools of choice. Time marched on, and webmasters realized the importance of things like site maps, search functions and FAQ documents. After all, people don't look for information the same way, no matter how intuitive the navigation. Pages started to get better looking too, with Web-sized images kept to relatively small sizes and resolutions to help make sure they didn't take an eternity to download over slow connections.

As the now indispensable field of Web analytics got its start, the public sector started looking at user behavior and letting that drive how content was prioritized. They were realizing they couldn't post, much less

maintain, every conceivable piece of information someone once thought belonged online.

In the mid-2000s, sites started streamlining the amount of content they served up to visitors. Less content looked better and was easier to keep up. As smartphones came on the scene, Best of the Web winners stood ready to embrace a more mobile future. 2010 saw many winners offering some degree of mobile awareness. Responsive sites weren't yet the norm, but looking back, there was ample evidence they were coming.

This year's Best of the Web winners reflect a new set of best practices. Adding to responsive design are personalized sites with simple, user-focused organizational structures that reflect a commitment to transparency and usability. What's also clear is a commitment to citizen engagement. Long gone are the days of a government website as a vehicle for one-way communication. Read our story at [www.govtech.com/BestoftheWeb2016](http://www.govtech.com/BestoftheWeb2016) for an in-depth look at this year's winners, all deserving of congratulations and imitation. Our infographic on page 14 offers some top-level highlights too.

Like government sites, the Best of the Web contest itself continues to evolve. The good news is that sites have improved to the point that celebrating fine distinctions between them is becoming ever more challenging. Some alert readers may have heard that 2016 marks the final year of the Best of the Web competition, at least in its current form. Stay tuned for what's next. 

## RAISE YOUR VOICE



Your opinions matter to us. Send comments about this issue to the editors at [editorial@govtech.com](mailto:editorial@govtech.com). Publication is solely at the discretion of the editors. *Government Technology* reserves the right to edit submissions for length.

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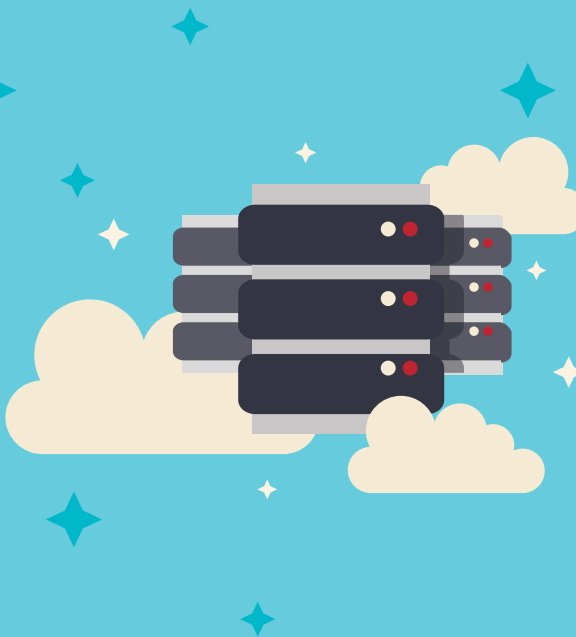
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## Structuring Innovation

Last year, Kansas City, Mo.'s Innovation Partnership Program led to a relationship with software company RF365 that helped streamline the city's RFP process. And on July 12, Mayor Sly James launched the program's second year, which will seek new relationships and technologies from civic entrepreneurs. Having learned from the first go-round, things will be more structured this time. Last year's program was launched on an ad hoc basis — people applied when they were ready and a committee gathered as needed to judge each applicant. This year there's a 30-day application period and a defined partnership process. The focus areas — economic development and internal operations — aren't different than in 2015, said Kate Garman, innovation analyst with the mayor's office, but there's more governance and mentorship this year.

### Banding Together

**Utah has taken the lead** on what state IT leaders have hailed as the largest cloud hosting services agreement to date. Through the National Association of State Procurement Officers Value Point program, state officials and their partners have been hashing out the details of what will equate to a collective procurement agreement expected to benefit more than 34 states. The program gives states purchasing similar items cooperative buying power as one organization rather than on a state-by-state basis. The process has taken more than two years.



## WHO SAYS?

*"The primary goal is for the federal government to be better at delivering technology investments over time."*

[www.govtech.com/quote-Sept16](http://www.govtech.com/quote-Sept16)

## MOST READ STORIES ONLINE:

IT Showdown: Tech Giants Face Off Against 18F  
**22,564 VIEWS**

Former GSA Head: Internal Procurement Groups Were Against 18F from the Start  
**2,916 VIEWS**

Smart Cities: The Good, the Bad and the Ugly  
**2,486 VIEWS**

States Band Together for Large-Scale Cloud Purchasing Agreement  
**1,958 VIEWS**

The Case for 18F: Why Federal IT Procurement, Contracting Need to Change  
**1,746 VIEWS**

Next Generation of Public Employees Must Understand Data and Policy  
**1,731 VIEWS**

“ [Former GSA Administrator Dan] Tanagerlini's insights are wonderful to read. Props to the fighters on the ground at 18F — you are blowing away the doilies and plastic seat covers that have allowed dusty, complacent IT solutions to hide out in government. It's about time. Government IT should be innovative, secure, leading through change in ways that are attractive to smart people who want challenge and to be proudly engaged in public service.

**State IT Worker in response to *The Case for 18F: Why Federal IT Procurement, Contracting Need to Change***

“ The problem that folks don't want to own up to is that the 18F group came in and did a lot of talking. Not a lot of action. A lot of resources went toward the 18F ideology and they were not inclusive. They didn't want to garner historical knowledge. Everything was as they knew it and nothing else mattered. When you exclude people in the know from your project, you are going to reinvent wheels that have already been developed, you are going to deter input and investors from your ideas, and you are going to do more proliferation and have less substantial results.

**REALTALK in response to *Former GSA Head: Internal Procurement Groups Were Against 18F from the Start***

“ Within the civic tech sector (which includes gov tech), there's an increasing focus on a shared goal of modernizing government services. Opening up public data sets to encourage government transparency and innovation within the private sector is one strategy of this emerging movement. The next wave of civic tech will help transform the way civic organizations (including civil servants in our local, state and federal governments) deliver services to the public. As Jennifer Pahlka evangelized at last year's Code for America Summit, 'the strategy is delivery.' The civic tech strategy should be delivering better services to the public.

**DanParham in response to *Civic Tech Sees Strong Growth Despite Disunity, Report Says***



## Freedom of Information/Public Records Request

**Part I:** I hereby request to: ☒ 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?

You have a new FOIA request for social media records.

**Part III:** Name of individual(s)

Address: 1076 Freedom

Phone: (210) 867-5309

[Get Help](#)

[Uh Oh](#)

State: TX

Zip: 78996

Email: jpublic1@gmail.com

### For Internal Office Use Only

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

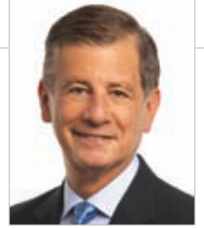
**Notes:** Staff has invested more than ten hours scrolling through social media pages and collecting stored screenshots from department hard drives. Citizen comments no longer available, City Attorney issued subpoena to social network - response still pending after four weeks.

# 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>





# The Importance of Buy-In

Technology's full impact can only be realized when key stakeholders support initiatives.

**R**ecently one of the country's top public-sector chief data officers (CDO) asked me a question, not so much in my academic role but more prompted by my previous positions as a mayor and deputy mayor. He said that he possessed the tools to transform an operational area of government, but wondered how to get attention and buy-in from the head of the agency.

At first this sounded counterintuitive — wouldn't most senior public officials want a better way of delivering a service? However, as I discussed it with his colleagues, I realized this very question is perhaps the single most significant obstacle to advancement. From GIS mapping to Internet of Things sensor data, new tech initiatives are poised to radically shift nearly every corner of city government.

The potential of technology and data is considerable, but their full impact — creating cultural change that will enable tech to become a core part of government operations — can only be realized when the key city stakeholders are truly interested

and understand and support the reforms. Even the most capable and ambitious technology advocate cannot change city hall single-handedly. Early tech projects in cities started with limited efforts from single advocates, but the truly transformative efforts ahead require buy-in far beyond one person.

The broadest areas of success occur when a structure is organized by the city's chief operating officer that brings the CIO or CDO into regular "what if" conversations with agency heads, designed to promote the generation of actionable questions that can be answered with data. When I conducted this exercise as deputy mayor of New York City, we generated more than 100 specific questions. Now under a grant from the Laura and John

**Demonstrating how tech can augment rather than supplant city work can go a long way toward making workers more comfortable with new initiatives.**

Arnold Foundation, many of the nation's best urban CDOs have formed the Civic Analytics Network to help the replication of approaches and apps. In order to percolate throughout a city, tech must have support and encouragement from city leadership.

Of course, data literacy and buy-in needs to permeate far more than the top levels. No matter how innovative a new predictive policing effort is, for example, it can never succeed if the city's police officers resist integrating the technology. Public employees and officials may be concerned that their jobs will become obsolete with new technologies, or that new technologies will be used to monitor their work more closely to punish alleged

underperformers. Addressing these concerns and demonstrating how tech can augment rather than supplant city work can go a long way toward making workers more comfortable with new initiatives.

Take Dallas as an example, where city administrators wanted to implement GPS tracking on garbage trucks. Workers were initially hesitant, fearing the system would be primarily used to track drivers for punitive purposes. The drivers gave

the system a chance after compelling arguments from the city about how the system could improve efficiency and resource allocation. Not only did the tracking help drivers utilize more efficient routes,

but it also helped the department identify and address safety concerns.

Working to gain buy-in from within city government when launching a new tech initiative can seem daunting, but the effort will pay off. Investing the time and resources to foster support across agencies ensures that the technology will be able to improve the city's core operations. These improvements will not only lead to more effective programs, but will also increase the likelihood that innovation can permeate the city and effect durable change. [ut](#)

**Stephen Goldsmith** is a professor at Harvard Kennedy School and director of the Innovations in Government Program and Data-Smart City Solutions. The former mayor of Indianapolis, his latest book is *The Responsive City: Engaging Communities through Data-Smart Governance*.

# THE PLATFORM WITH A PURPOSE

Improving Service Delivery and the Citizen Experience

Local governments are charged with maintaining safe, prosperous and healthy communities. Chief information officers (CIOs) play an important role in achieving these goals by implementing technology to improve service delivery and enhance the overall citizen engagement experience.

The Accela Civic Platform provides public CIOs with technology solutions that meet their goals by modernizing and transforming civic processes. Whether it's making it easier for entrepreneurs to start and run a business, reducing the time needed to review and approve building permit applications or plans, or reaching more

people by posting government agendas and meetings online, the Civic Platform connects local government directly to its community.

## ACCELA PROVIDES THE PLATFORM TO SUPPORT THE MODERN-DAY CIO AND COMMUNITY.

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## Rob Stradling

Director of the Baltimore County, Md.,  
Office of Information Technology

*Running an effective government website in 2016 means using modern technologies and design principles — things like putting the user first, integrating tightly with social media and making things simple — but it also means aligning priorities with that of IT's customer base. That's what Baltimore County is doing and why it placed first in the Best of the Web's county category. Government Technology caught up with Rob Stradling, director of the Baltimore County Office of Information Technology, to find out what sets great government websites apart from merely good ones.*

**1 What does a website represent for county government in 2016?** I think it's [the citizen's] first experience in the government world, and it gives them the ability to self-service, which is what everybody wants to be able to do. Our website to us is our main presence. Most folks aren't going to want to come down to our county seat to do business and find out information. We've tried to create a very responsive platform that allows any device

to deliver the information citizens need and lets them quickly search through our predictive analytics, which we use to see where people might want to go and to get them the services they need quickly and easily.

**2 What are your overall philosophies and strategies for developing an effective website?** Ease of use — I want to get people quickly to what they

need. I want it to be very responsive and able to be used by any device quickly. I want to be able to get them whatever government services they need. The other piece is accessibility. I want to make sure that all folks will be able to access our website.

**3 Does data play an important role in your Web strategy?** Absolutely. We have the one side — serving up the data so they can actually self-service, finding the service they need. But as far as open and transparent data, to be able to mine it and use it for whatever activity they need, it's very important for us. Whether it's going to be from our open data sets or our GIS-based applications, such as My Neighborhood, in whatever flavor the customer would like.

We also have a strong social media presence. Our website is a portal into our social media, so to us, they're two different opportunities. I see my Web portal as an opportunity to get people into services, and then we can push folks into the engagement piece, whether it's in our social media or our open data portals.

**4 How did you transition from a traditional development cycle to the use of agile?** At first we had to adapt internally. We had to be able to demonstrate that this was faster to market and that it gave us some chances to be creative and unique as needed for the customers too. We have 24 agencies that we service through our Web offering and they all have different needs. So we're trying to make sure we can do those, but also keep our staff numbers at the appropriate level.

We have been very successful with agile. We recently have taken ownership of the Baltimore County Libraries website. We came in and helped them do some things they've been trying to do for years. They were more of a static Web page with just information, and we wanted to do book checkout and a mobile app. Our staff is very talented, so it's really a win-win. Our government and our libraries used to be separate, but now we work together as a partnership. They were on basically a mom-and-pop content management system that was very inflexible, and that gave us the ability to build something for them quickly. **BT**

— Colin Wood, Staff Writer

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# Recognizing Web Excellence

The Center for Digital Government and Government Technology's Best of the Web competition recognizes 30 public-sector portals for their work to engage citizens online while also providing them with cutting-edge Web services. The 2016 winners represent the diversity found in government portals and show that the future continues to be streamlined, search-centric design. However, as site design follows the trend of less is more, back-end processes are becoming increasingly complex and data driven. See our story and analysis on all of the winners at [govtech.com/BestoftheWeb2016](http://govtech.com/BestoftheWeb2016).

**61%** use agile methodologies to engage stakeholders and roll out iterative updates quickly

**64%** survey the public and/or focus groups for portal feedback

**39%** go live with beta versions to encourage feedback during development

## County

**1st place**  
**Baltimore County, Md.**

[baltimorecountymd.gov](http://baltimorecountymd.gov)

440,000 average monthly unique visitors

44 online services, three of which were added in 2015

**2nd place**  
**Stanislaus County, Calif.**

[stancounty.com](http://stancounty.com)

87,100 average monthly unique visitors

Saved as much as \$200,000 by developing the site internally





## Best Portal Practices

No two winning sites are the same, but most embrace the following principles:

### ✓ Responsive

Websites should perform optimally for visitors, regardless of device.

### ✓ Personalized

Point users to services near them and connect them with the most relevant content.

### ✓ Transparent

Financial and performance data should be readily available, and winning sites display it in easily digestible formats.

### ✓ Data-Driven

User behavior analytics should be a key driver of site development.

### ✓ Engaged

Winning sites offer a variety of ways to connect with citizens as well as proof that they're listening.

### State

**1st place**  
**Maryland**  
[maryland.gov](http://maryland.gov)

*7 million average monthly unique visitors*

*More than 850,000 followers across 300 social media channels*

**2nd place**  
**Utah**  
[utah.gov](http://utah.gov)

*1 million average monthly unique visitors*

*Created a skill for Amazon's digital assistant, Alexa, to help users study for their driver's license test*

**94%** rely on analytics to enable data-driven decision-making for site updates

**82%**

implement quality assurance processes to catch potential issues early on

### City

**1st place**  
**Denver**  
[denvergov.org](http://denvergov.org)

*938,900 average monthly unique visitors*

*PocketGov mobile-friendly Web app customizes user access to city information*

**2nd place**  
**San Diego**  
[sandiego.gov](http://sandiego.gov)

*1.7 million average monthly unique visitors*

*Nearly 6,000 people provided feedback during the portal's latest redesign*



pics in folder





By David Rath

# THE BIG REDESIGN

States and localities have their work cut out for them when it comes to modernizing websites.



**When he was a project manager working on website design in the New York City Mayor's Office of Technology and Innovation last year, Dave Seliger did an inventory of all the city's websites. He found 343 distinct sites, some of them abandoned and dating back to 2003. "We were finding crazy things that we had no idea existed," he said, "but if you were a citizen you might stumble across them and think they were relevant."**

**Seliger noted that the typical New Yorker can interact with 120 different government organizations. "We started to realize that from the user's point of view what we had been doing made no sense whatsoever," he said.**

New York City is not alone in re-evaluating its website strategy. Digital strategists from states, cities and counties charged with refreshing websites are seeking to develop platforms that are more streamlined, citizen-centric, mobile-friendly and less likely to grow obsolete in a few years. Many sites designed before 2007 have not been updated to reflect the fact that a large percentage of citizens access their portal on a mobile device.



Boston is going through a thorough website redesign for the first time since 2006. Lauren Lockwood, the city's chief digital officer, said that in the past few years, Boston had been surveying users about their experience. "On a scale of zero to 100, we were getting a 55, which is failing by any measure," she said.

Other surveys suggest members of the public are somewhat underwhelmed by government digital efforts. In an April 2015 survey of nearly 2,200 adults conducted by the Center for Digital Government for state portal developer NIC, only 18 percent of respondents strongly agreed that their state is committed to better serving citizens online.

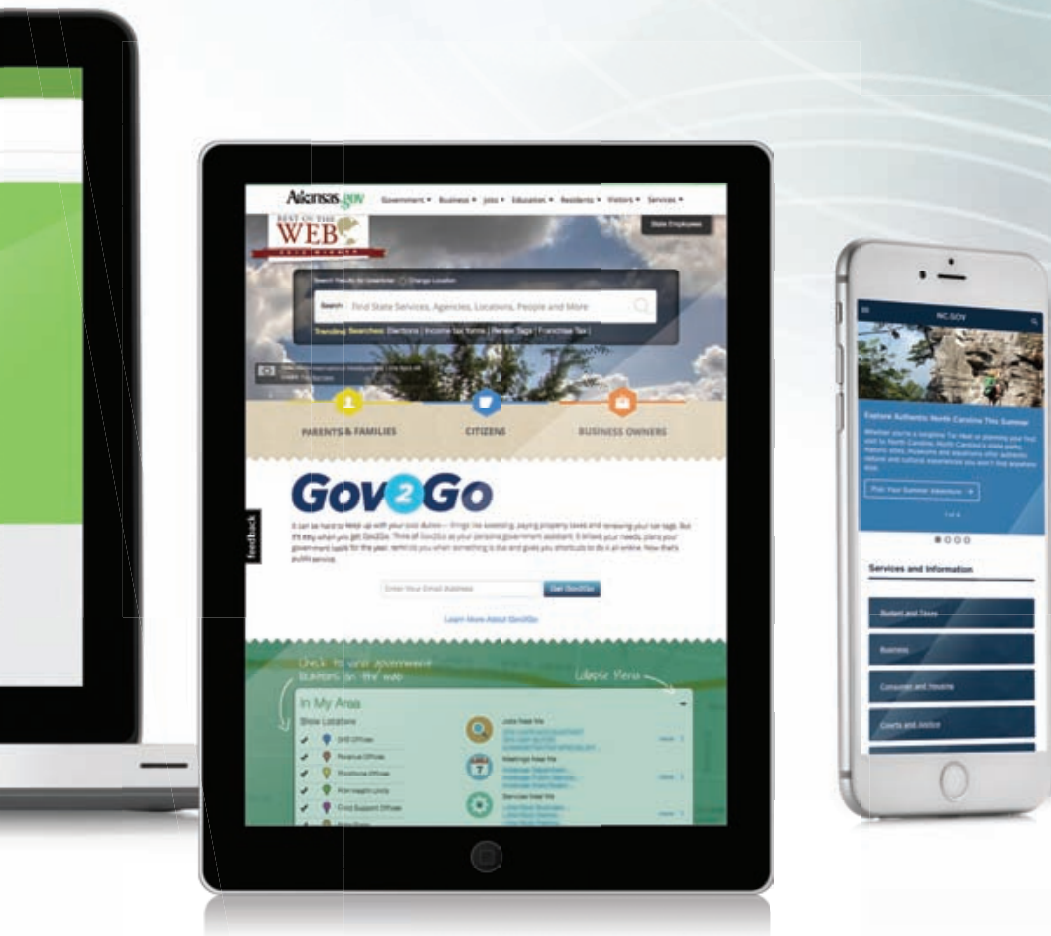
A December 2014 online survey of 334 local governments found that only 34 percent of respondents rated their agency's websites as "highly effective," according to Vision Internet, a technology firm specializing in government website development.

Many smaller cities and counties struggle to keep content on their sites

fresh, said John McKown, president of Evo Studios, which designs municipal websites. "We see a lot of empty news areas and empty calendars, and social media accounts that aren't used," he said. "The smaller they are, the more this seems to happen."

Although state governments have more resources to devote to their Web presence, they often suffer from inconsistencies across agencies, both in terms of effort and infrastructure. "Previously we had a digital landscape that was disjointed," said Billy Hylton, digital services director of North Carolina, who has overseen a Digital Commons project to develop common Web standards across the state.

"From a branding standpoint, a whole bunch of logos and identity systems were being used," he said. "From an information architecture standpoint, the navigation and menus were structured differently depending on which sites you were on. Some sites had search and some didn't. Some search experiences were good, some not so good. Every



“WE HAVE FOUND THE DEMAND FOR DOWNLOADABLE APPS HAS DROPPED, AND PEOPLE ARE MORE ENGAGED IN MOBILE-FRIENDLY WEBSITES.”

site should be responsive for mobile today, right? But a few years back, we had a lot of sites where the experience on a mobile device was not good.”

Putting more government transactions online continues to be a challenge for states. The corporations division in the Oregon Secretary of State’s office just crossed an important threshold: It now does more than 50 percent of its transactions online, said Peter Threlkel, who heads up that division and serves as chair of the state’s E-Government Portal Advisory Board. Citing estimates that an offline transaction costs about \$17 versus \$4 for an online transaction, he said that has led to pretty significant savings. But Threlkel added that citizens and businesses have in the past expressed impatience with the state because it couldn’t deploy more services online.

That was one of the reasons Oregon partnered with NIC — to break through some IT logjams. “There has always been a limit to how much agencies could

accomplish with the resources they had,” Threlkel said. “NIC has already done a lot of the things we are asking for in other states and can bring those in and turn them around quickly. That really helps.”

From its perspective providing digital solutions for more than 4,500 federal, state and local agencies, NIC has a bird’s-eye view of the stress agencies are under. “I don’t think Oregon is any exception. We have seen no shortage in the needs of states to bring online services to government partners,” said Robert Knapp, chief operating officer of NIC. “We have a queue in each state of services they are trying to bring online. It is difficult for them to pause and look into the future and spend time on those things. We have tried to serve as the R&D shop for them.”

Mark Headd, the former chief data officer of Philadelphia and currently developer evangelist at Accela Inc., said part of the problem has been government officials’ old-school mindset about the purpose of a website. “The old way of thinking about

a government website was essentially that it was a one-way communication. Mayors, governors and commissioners saw it as a way to push their information out to people, and less as a transactional platform,” he said. “I think that is changing now, but it hasn’t come easy.”

Araron Ogle, who recently left his position as director of civic technology for Philadelphia, was in charge of the city’s Web redesign process, which is still taking place at [alpha.phila.gov](http://alpha.phila.gov). One problem his team sought to solve was organizational. “The information architecture was almost a one-to-one correspondence with the organization structure of the government itself. It was essentially a digital manifestation of the org chart,” he said. “We realized that meant that the public needed to understand how government worked if they were going to effectively navigate the website. If you

want to pay your water bill, do you pay the water department or the revenue department or the water revenue bureau? It's not intuitive which one is going to provide you with the services you need."

Lockwood said Boston is trying to address the same problem. "When we were doing user interviews, one constituent said the website felt like Boston just opened its filing cabinets and said, 'Here it is. It is all there for you.' That is really a good description of the site. We force constituents to understand our internal structure."

In its redesign, Boston is focusing on organizing content by topics. "The distinction we are trying to draw with topics is that there is a big difference between making information available and making it accessible," she said, "and we are trying to bridge that gap." The topics approach is an attempt to provide a one-stop shop

“THE HARD THING IS THAT WE DON'T KNOW WHAT THE BIG THING IS GOING TO BE IN 10 YEARS, SO THE SOLUTION IS TO USE TOOLS THAT ARE ADAPTABLE.

for constituents, so if they have a car and want to know everything they need to know about having a car in the city, they can get that information without having to go to six departments for it.

What has emerged from these two Web redesign efforts is the importance of using modern, open source tools and doing constant iterative design rather than "big bang" projects every five years. "Right now it is important that you have mobile-responsive websites," Lockwood said. "The hard thing is that we don't know what the big thing is going to be in 10 years, so the solution is to use tools that are adaptable."

Boston has decided to build its new site based on Drupal, rather than purchase and install a proprietary system. "We think making sure there is an ecosystem of developers out there to maintain and improve it over time is the only way we are going to have tools that evolve with our users' needs," Lockwood said.

Likewise, by default any tool that Philadelphia builds goes up on its GitHub

account, so people can download it, log issues and make suggestions. That includes a property search application the city built. Could that lead to more cities reusing applications built by others? "That is my hope," Ogle said, "but it is not an easy thing mostly because data feeds are not standard. I think data standards such as the General Transit Feed Specification for transit are going to become more important."

Another approach common to Boston's and Philadelphia's is the decision to design gradually and share progress with the public in order to get feedback before going any further. "If we are going to build a website around the needs of our users, then we have to involve them in the process," Lockwood said. "We did a deep-dive research phase about what the point of a government website really is in the fourth quarter of last year and met with a lot of city residents. We launched a pilot that was just four pages and have added more content over time. That allows us to test ideas with people and collect feedback."

A renewed focus on the use of analytics to drive design is becoming more prevalent. Analytics can help track the flow of people through a specific service, and understand how far they got and where they stopped. Philadelphia took analytics.usa.gov, the federal government's 18F dashboard, and deployed it for the city. "It was the first repurposing of that software," said Ogle. "Analytics.phila.gov is now a thing thanks to that open source software of the federal government."

North Carolina's Hylton said a focus on analytics is driving growth in usage. From January 2015 to 2016, NC.gov saw a 75 percent increase in total users and 140 percent more mobile users. "What is different from a few years ago is that our culture has changed to understand the need for analytics and the need to make data-driven decisions," he said. Before Digital Commons, some analytics data was flowing, but it was often apples to oranges and not a real picture of user trends. "We recognized this as an issue that was preventing us from getting the right data to track over time."

Lockwood said cities are increasingly building capacity on the data and analytics side. She cited the fact that Boston just hired the city's first product manager for its website as an example of the way the culture in city governments is changing in relation to technology. "Products are not just things you launch and let decay or go into maintenance mode. Instead, they are things you are investing in constantly and growing and improving over time."

The problem of technology trends changing faster than government procurement and implementation has hampered New York City at times, according to Seliger. "Before we get to a point where we can think about the next big thing, we haven't caught up with the migration that was supposed to happen years ago, and there is just so much content out there," he said.

Several years ago the city decided to standardize on a basic website template. But groups like the Department of Sanitation started hacking the template and embedding their own features, because the new standards couldn't keep up with the services agencies were delivering. "Even though we had this template, it couldn't keep up with modern times," Seliger said. "That



FILICIA/ALAMEDA COUNTY



is the way a lot of things in government IT work. You spend five years migrating back-end processes to a new platform and by the time you finish, it is out of date.”

Tim Dupuis, CIO for Alameda County, Calif., echoed these concerns about websites growing outdated. Noting that the county won a 2013 Best of the Web award from the Center for Digital Government, he said, “If you look at our site today, we believe it looks dated. It looks three years old. The market and the tools available are changing so rapidly that we have to come right back around and revisit it.” The county is working on a new Google Search Appliance to make the site more search-centric, as opposed to menu-driven drill-downs, he added.

An example of having to change course to follow the market involves mobile apps. Four years ago Alameda County created teams to develop native mobile apps. “That was a whole new skill set we were adopting and investing in,” Dupuis said. “But over time we have found the demand for downloadable apps has dropped, and people are more engaged in mobile-friendly websites. So we started focusing more of our attention on that. People don’t

feel the need to download an app just to pay property tax once or twice a year.”

Some technologies being experimented with today point toward the government website of the next decade. NIC’s Knapp noted two examples: Mississippi and Utah are experimenting with the Amazon Echo voice-activated digital assistant, and Arkansas launched a Gov2Go smart application. With Gov2Go, users tell the app some basic information such as which county they live in and what vehicle they drive, and based upon that data, it builds a calendar of their government interactions throughout the year. In addition, users are sent notifications when a property tax or franchise tax payment is due.

Hylton believes North Carolina’s first step was creating a unified, citizen-focused experience across its Web presence. Step two is making it easier for the business community to engage with the state for licensing and permitting. Web services and application programming interfaces will be a part of that.

“Data may not be in our content management system but in other appli-


cations, through modern Web services, we can consume that data,” he said.

Looking further out, he used the term “omnichannel” to describe an application that sounds like Arkansas’ Gov2Go. “If a mom in Raleigh is wondering about her auto tags, instead of having to go to NC.gov and search for auto tags and drill down to find the information, through personalizing our services, she will get pinged so that the right information reaches her at the right time.”

Evo Studio’s McKown said the website of the future will do a better job of integrating 311 systems, which today are often siloed apps, with other applications, including GIS. He noted that an Open311 standard should make that easier.

One concept that may gain favor in government data circles is “microservices,” according to Accela’s Headd. The basic definition is a very discrete service that does one thing well and could be a building block for larger pieces of technology. The idea is that instead of building a monolithic system, you build more complex things by piecing together microservices.

Around property data, a city could have a microservice that does address verification. You give it an address such as the intersection of First and Main, and the service would return the properly formatted address. (This is important because it’s common for different agencies to have slightly different address information for the same parcel.) “Instead of trying to be everything to everybody, a city could create these small little services and encourage others to create them too by giving them open data,” Headd said.

Alameda County’s Dupuis said if governments could start to integrate the improvements in combination with artificial intelligence and voice technology such as Apple’s Siri, “it would take away the friction and the barriers for the public to find our services. They immediately get to it and use it. That is exciting and will open up a whole new world of opportunities for us to make sure we are making the services that government has available to our constituents.” 



Alameda County, Calif., has turned its attention from mobile apps to mobile-friendly websites, said CIO Tim Dupuis.

# THE STRUGGLE TO CONNECT

**Broadband is commonly described as a critical piece of modern infrastructure. Here's how a city, a state and a school district are working to make sure everyone has access.**

By Adam Stone

**W**e've become a land of digital haves and have-nots. "Buying cheaper goods directly from wholesalers, immediately accessing government services and finding employment opportunities are increasingly only available to those who have an online connection," say Brookings Institution researchers.

Yet multiple studies have shown that access to broadband connectivity is far from universal. The gap is most often noted in education, where a 2015 report by the

nonprofit EducationSuperHighway found that 21 million students are not meeting the minimum 100 kbps per student goal set by the Federal Communications Commission.

The broadband gap reflects issues of income and race. Pew Research finds that roughly a third of households whose incomes fall below \$50,000 and with children ages 6 to 17 do not have a high-speed Internet connection at home. At the other end of the spectrum, only 8.4 percent of households with annual incomes over \$50,000 lack broadband.

In other words, low-income homes with kids are four times more likely to be

without broadband than their middle- or upper-income counterparts. In addition, "[l]ower-income black and Hispanic households with children trail comparable white households with children by about 10 percentage points," Pew researchers found. The White House has published similar findings, noting that black and Hispanic households are 16 and 11 percent less likely, respectively, to have an Internet connection than white households.

The federal government has taken some steps to address broadband disparity. Earlier this year, the FCC expanded its Lifeline telephone subsidy program





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GETTING TECH INCLUSION TO BE PART OF EVERY COMMUNITY CONVERSATION IS A GOAL FOR JOHN SPEIRS, PROGRAM COORDINATOR FOR THE AUSTIN OFFICE OF DIGITAL INCLUSION.

OSCAR WILLIAMS



to enable low-income consumers to access discounted broadband service.

States, cities and school districts also are stepping up with a broad range of initiatives intended to make broadband more universally accessible. That's appropriate, given the unique assets government can bring to the table. "They are working with the big picture, they can see all the players, and they may have monies they can leverage to support social and economic development through broadband investments," said Colin Rhinesmith, senior lecturer at Simmons College and author of *Digital Inclusion and Meaningful Broadband Adoption Initiatives*.

Government also is uniquely poised to build the broad coalitions needed to bridge the broadband gap. "With government, you not only have a champion, but you have someone who can bring together the stakeholders: the private sector, the nonprofits.

**“Today, high-speed broadband is not a luxury, it's a necessity.”**

President Obama, Jan. 14, 2015

This works best when you can have a lot of people come to the table,” he said.

This is especially true in education, where government may be better placed than the private sector to tackle certain hurdles. "Government can advocate in all parts of the state, especially the rural parts where it is often hard for the private sector to go in on its own," said Tracy Weeks, executive director of the State Educational Technology Directors Association.

How is government enabling broadband? The state of Utah, the city of Austin, Texas, and Miami-Dade County Public Schools in Florida all offer compelling examples of

the ways in which government at various levels is attempting to tackle the problem.

**J**ohn Speirs describes digital inclusion as foremost a conversation. In order to spread broadband adoption, the program coordinator of the Austin Office of Digital Inclusion said he needs to spark discussion within the city's numerous departments and hundreds of programs.

"We need to speak the same language in order to move forward around these goals," he said. "We want digital inclusion to be a core consideration in every conversation the community has."

While Austin has been advocating for broadband equity for over a decade, the city's push for digital inclusion took a big step forward in March 2014 when the City Council adopted a resolution calling for the development of a Digital Inclusion Strategic Plan that would map out access and adoption strategies. Planners pulled together insights from the nonprofit sector, education, public health, business and other key areas, eventually crafting a document that laid out broad strategies as well as specific initiatives.

One hallmark project, Unlocking the Connection, seeks to redress some of the economic disparity underlying the broadband gap. The project brings free basic Internet access to 1,838 residential public housing units through a partnership with Google Fiber. "We all want people to find better jobs, to eventually own a place, to break out of a possible social silo," Speirs said. "Internet access is a first step toward that."

The Office of Digital Inclusion also is charged with maintaining a baseline understanding of the state of local residents' Internet adoption through a survey to be conducted once every three years. In the first such poll, researchers determined that some 55,000 city residents do not have a home computer or home Internet access. "It really helps us to zoom in on those places where we can provide the necessary skills, access and training," Speirs said.

Training is a big part of Speirs' agenda. Backed by the city's Grant for

Technology Opportunities initiative, the broadband office funds training programs through a range of local organizations, with an eye toward fostering digital inclusion in underserved and underconnected communities.

Austin's inclusion efforts have been guided by an unusually detailed strategic plan. For example, the guiding document declares that the city needs "a more consistent and engaging physical presence to fully communicate the importance of having everyone connected." The inclusion office therefore is instructed to regularly take part in community events.

Likewise, the strategic plan calls for a multifaceted marketing campaign, with specific messaging tailored to different sectors. It also spells out an imperative to engage the local volunteer community.

The strategic plan clearly indicates an intention to cast a wide net, to spread the word of digital inclusion to as many corners of the community as possible. This in turn has become Speirs' guiding principle. "We all need to make technology more of a forefront consideration, whenever we are having conversations with the community and also with others in government," he said.

**W**hile digital curricula and mobile devices are pushing schools everywhere to evaluate their broadband needs, Miami-Dade

County Public Schools have been under special pressure. The state requires all standardized testing be done online, and by 2018 half of all academic content will need to be available in a digital format.

That includes not just PDFs of textbooks, but also video content and other resource-intensive materials, said Deborah Karcher, the district's CIO.

Complicating matters is the district-wide trend toward BYOD. When students and staffers turn on their phones and tablets, the number of devices on the network can jump from 2,000 up to 3,000 or more. In spite of the strain on the network, administrators allow BYOD because it gives students the ability to

work on the same devices in school and at home, and also can reduce the number of devices the district needs to issue.

The school district has stepped up to bridge the broadband gap with a major infrastructure build-out, growing from 1 to 10 gigabytes over the past six years. The vast majority has been paid for by E-rate, an FCC program to provide discounted telecommunications, Internet access and internal connections to eligible schools and libraries, funded by the Universal Service Fund.

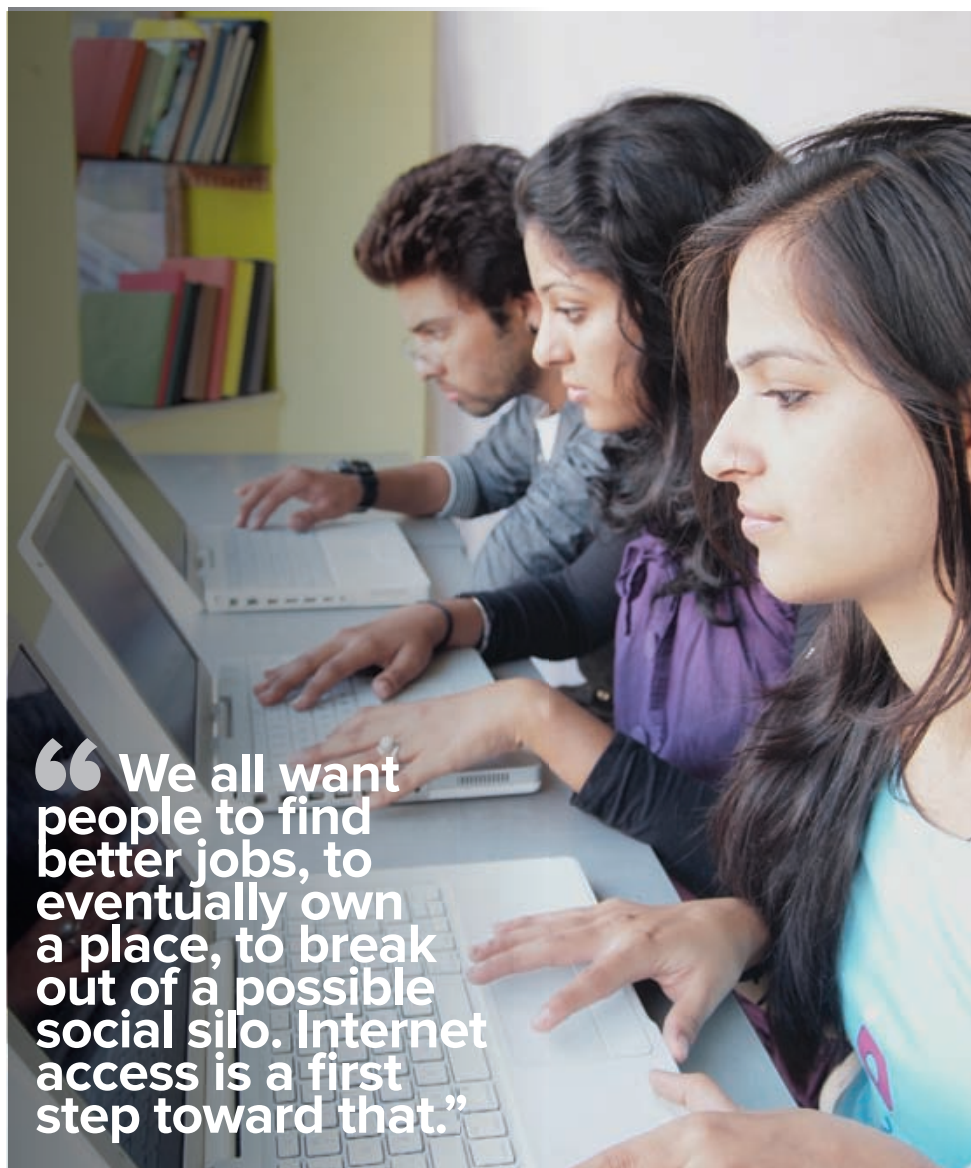
That big pipe is essential, but not sufficient in and of itself. “This is not a ‘nice to have.’ It has to work all the time. It has to be available,” said Paul Smith, district director of data security and technical services. To that end, the school has turned to “traffic shaping” as the key to success in its broadband initiatives.

“You have to figure out how to manage with a limited amount of bandwidth, to make it do everything you want it to do,” he said. “That means sometimes you are either stopping or restricting certain kinds of traffic, and allowing other things to get through.”

This is most obvious during testing time, when apps and websites not directly related to testing may experience significant slowdowns. To prioritize traffic, the district has devised its own set of permissions for various sites, and also subscribes to outside services that filter traffic based on content, security and other concerns.

While the district’s network management tools are enabling it to keep up with demand for now, there’s no doubt the race to deliver adequate bandwidth is far from won. “It all goes back to the mandates,” Karcher said. “In the world of education, more and more things are being required in terms of content and testing, and this just continues to grow.”

**R**oughly half the states have an office dedicated to broadband. When Strategic Networks Group ranked them, Utah placed No. 8 for availability and No. 12 for growth investment. The state’s Broadband Outreach Center has an ambitious agenda that includes the develop-



**“We all want people to find better jobs, to eventually own a place, to break out of a possible social silo. Internet access is a first step toward that.”**

ment of data on commercial broadband availability for business recruitment.

Every six months the office polls all of the state’s 55 to 60 Internet providers to generate maps of available services, one residential and one for the business community. For Kelleigh Cole, director of the broadband center, these maps form the core of an economic development agenda. Her office will help potential businesses locate providers and even coordinate with cities to get the appropriate permits in place.

At the same time, the office feeds demographic data back to providers

in order to help them identify underserved areas of the community.

Utah has generally high Internet and adoption rates: 92 percent of households report accessing the Internet at 25 megabits per second, which meets the FCC’s current speed threshold. But the state wants to be proactive on broadband in the face of predicted population growth, coupled with the rapid rise of Internet-enabled devices.

“We are seeing households using more and more devices, needing more and more capacity,” Cole said. “Right now we are ahead of the game, but we believe that usage is going to increase as more



**Kelleigh Cole,**  
director of the  
Utah Broadband  
Outreach Center

Utah is being proactive on broadband in the face of predicted population growth coupled with the rise of Internet-enabled devices.



AUGUST MILLER

people use more devices and more applications that require more bandwidth.”

In addition to producing the maps, Cole’s office acts as a resource to municipalities. The center has helped various cities form plans to encourage Internet adoption and generate guiding principles for their own broadband policies. Cole also has been working to show cities how they can work with developers and Internet providers to incorporate broadband in advance of any new development.

The office has acted as a conduit for state broadband information in the development of seven regional broadband plans. “We are able to look at the state, to figure out what is working and then disseminate that information to the different groups as they go through their planning process,” Cole said.

The broadband center also acts as the state’s advocate on connectivity issues at the national level. In late 2014, for


example, the federal government initiated changes in E-rate. “We realized that a large number of our rural school districts would no longer be considered ‘rural’ under those changes,” said Cole. “Rural school districts get a higher percentage of funding for broadband through that program, so this becomes really important.”

Utah weighed in against the changes, which in the end, were not enacted.

The Broadband Outreach Center can’t single-handedly bridge the broadband gap, but with its research and advocacy efforts, it hopes to move the needle. “The state’s role is to work with the broadband providers, the cities, businesses and other partners to implement policies that encourage development,” Cole said. “I don’t have a fund to pay for infrastructure projects, but I can work with a lot of different partners to develop plans and create efficiencies.”

Looking across these city, state and school district initiatives, it’s perhaps striking to

see how little they have in common. Austin works with nonprofits to put broadband into public housing, while Miami-Dade focuses on network management as the key to high-speed connections in the schools. Utah meanwhile is focused on the economic development potential of its broadband strategy.

Why such wide-ranging government efforts to close the gap? Brookings Institution researchers say it’s because broadband is a lynchpin of future prosperity. “[C]ompleting the transition to an all-digital economy will be impossible until broadband adoption looks ubiquitous like water and electricity infrastructure,” they write. “And much like electricity development in the 20th century, ensuring every American has reliable online access is a clear 21st-century mandate to maintain the country’s global economic pre-eminence.” 

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Deputy Chief **Steve Clark** of the Santa Cruz, Calif., Police Department sees tech as a way to get smarter about how officers' time and resources are spent.

# SMARTER

EFFECTIVE **DATA ANALYTICS PROGRAMS** CAN HAVE A MAJOR IMPACT ON PREDICTIVE LAW ENFORCEMENT EFFORTS.

# POLICING

STORY AND PHOTOS BY EYRAGON EIDAM



**F**rom the right vantage point, it is almost possible to watch the steady tide of technology seeping into the briefing rooms and patrol cars of American law enforcement agencies.

The devices and technologies that may have once started as benign civilian conveniences have transformed into powerful tools that enable agencies to pinpoint their resources, prevent crime and cast a wider net for wrongdoers. The exponential escalation of mobile computing and analytics has given officers intelligence on the go and greatly improved their chances of being in the right place at the right time.

While these tools come with profound benefits to the men and women behind the badges and the communities they serve, there are ramifications that ripple far into the public space as well as considerations that must be made to prevent misuse and infringement on civil rights.

But we still seem far from the broad-stroke reports of many in the mainstream media who might tell you that cops everywhere can peer into your life with the click of a mouse or a well placed drone — at least at the local level. Despite some of these overblown stories of advanced surveillance capabilities, many in local law enforcement would tell you that funding for boots on the ground will almost always win out over bids for the latest NSA-style tech. Even if smaller agencies want it, they probably can't afford it.

This is not to say there aren't those with a spy-style kit they can't or won't talk about. These methods tend to encourage public distrust and suspicion, but we'll cover that a bit later on.

Despite the gloomy and often mischaracterized capabilities of police powers in the U.S. and the tools they use daily, a wider look at the profession and its emerging capabilities can show us just how important technology is and will become in policing.

## SEEING CRIME BEFORE IT HAPPENS

It's 4 p.m. on a Tuesday in June in Santa Cruz, Calif., and the squad car radio echoes off with chatter about a strong-arm robbery near the rail bridge that connects the popular boardwalk with a nearby



beachfront neighborhood. The suspect, a woman with a backpack, has taken another woman's belongings by force and was last seen making her way toward the network of vacation homes and beachgoers enjoying the sunny afternoon.

But Santa Cruz police officers are already nearby and move in to track the perpetrator within moments of the first report. There's nothing random about their presence in the area. What on the outside might look like blind luck or coincidence is actually part of a predictive system the department has been perfecting with the help of academic partners turned businessmen since 2011.

And this is not someone sitting in a room with a crystal ball or tarot cards trying to pinpoint the next crime; this is the intersection of advanced probabilistic algorithms and community policing. It's appropriately called PredPol, short for Predictive Policing.

Crime data fed into the PredPol system provides officers with 15 different zones for four types of crime — auto theft, vehicle burglary, burglary and gang-related activity — at the start of each shift. Each zone covers an area of 500 square feet.

In a city where tourism can double the population in a single night, the deputy chief said maximizing the efficacy of his department was a no-brainer. The technological edge provided by the advanced software would help to close the gap between what was, at the time, increasing crime and staffing limitations.

"Time is a zero-sum game. I only have the number of officers times the number of hours that they're working to address crime issues in the city. If now all of a sudden a chunk of our time is dealing with radio calls for service, that greatly reduces my proactive policing time. The only way to increase that is you either lower the demand or you get more officers to dilute or diffuse the calls for service so you have more proactive time," said Deputy Chief Steve Clark. "I couldn't afford more officers, so I had to get smarter about how we were going to deal with our limited time resources."

Despite giving officers a substantial leg up when it comes to patrolling the city, Clark said the system still requires them to interact with the community and walk the beat, as it were. They cannot, and do not,

**Clark demonstrates different aspects of Santa Cruz's predictive policing system.**







rely solely on the system's predictions to do their jobs. They still patrol the city as any cop would, but they're looking for any indication that the predictions were correct.

However effective the system might be in predicting crime, Clark said the job of policing is more than simply following the data. "You can't become too reliant on these things. The officers have to continue to sharpen their saws as far as their instincts, their training, their experience, their instincts — those things that we spend a lot of money to teach them and train them, those years of experience," he said. "Public safety is a discipline or a field, if you will, that you can never lose the human element in."

From Clark's perspective, the platform does more than just point cops in the right direction; it also removes the potential for race- and income-based biases so often a concern in policing. The predictive platform doesn't see race, financial status or any of the other indicators that often lead to the perception of police profiling. All PredPol sees are the reports of crimes that have occurred, which are then translated into where they are likely to occur next.

"There's nothing in there about demographics," Clark said. "Whether it be the population type or monetary demographics. These are actual crime reports, and that's what it makes its predictions from."

Halfway across the country in Eden Prairie, Minn., a town of about 63,000 people, predictive policing has taken on a slightly different form. Officers rely on a dedicated analyst for up-to-the-moment intelligence on their patrols.

The public safety system may not rely on advanced probabilities and mapping, but rather law enforcement analyst Ryan Kapaun, who tracks each crime and translates it into usable intelligence for the department, which averages 60,000 calls for service a year.

Using fairly simple tools, like the Microsoft Office suite and IBM's Analyst's Notebook, Kapaun funnels officers' suspect descriptions, potential patterns and anything else that may help stop or catch a criminal.

"To just map every burglary, for me, doesn't tell me a lot, because it doesn't

tell me that those burglaries are linked. So one might be an overnight garage burglary [and] one might be a front-door-kicked-in burglary during the day while people are at work," he said. "What I'm most interested in is not aggregating and mapping all of the burglaries. What I want to know is, what are the anomalies? What doesn't fit? What are the burglaries, as an example, that aren't fitting the other burglaries?"

The concept took time to catch on with his badge-wielding colleagues, according to the analyst. But now Kapaun's work represents one more tool in each officer's belt that can help them make split-second decisions on patrol.

"Everyone is using data, and they might not either be aware of it or understand it, and if you think of it, a police department has a wealth of data — they're data-rich. It's just figuring out how to take that data and use that data in a way that's meaningful," he said. "I think a lot of agencies end up using the data to just say, 'Burglaries are up 15 percent from this week over last week.' For a patrol officer, when I used to do that, eyes would glaze over. What does that mean? You have to tell the story with the data."

Kapaun said the program's successes have the department looking at how to expand it and potentially bring in other analysts.

## THE RISE OF BIOMETRICS AND FINGERPRINT ALTERNATIVES

In recent years the push to include alternative identification methods in daily police work has exploded past fingerprinting and the classic mug shot. Law enforcement agencies are now looking toward options like facial recognition to help "finger the right perp."

At the federal level, the FBI's Next Generation Identification program has given new identity tools to federal, state and local law enforcement, and has stoked the flames of critics, who believe the system is little more than a way to catalog people — the guilty, the innocent and those somewhere in the middle.

But the program seems to be the next logical step in a national process where

fingerprints and photographs don't always tell the whole story of a person's criminal past. The larger program, which extends its database services to participating state and local agencies, relies on a growing index of finger and palm prints as well as facial and iris scans to identify persons of interest.

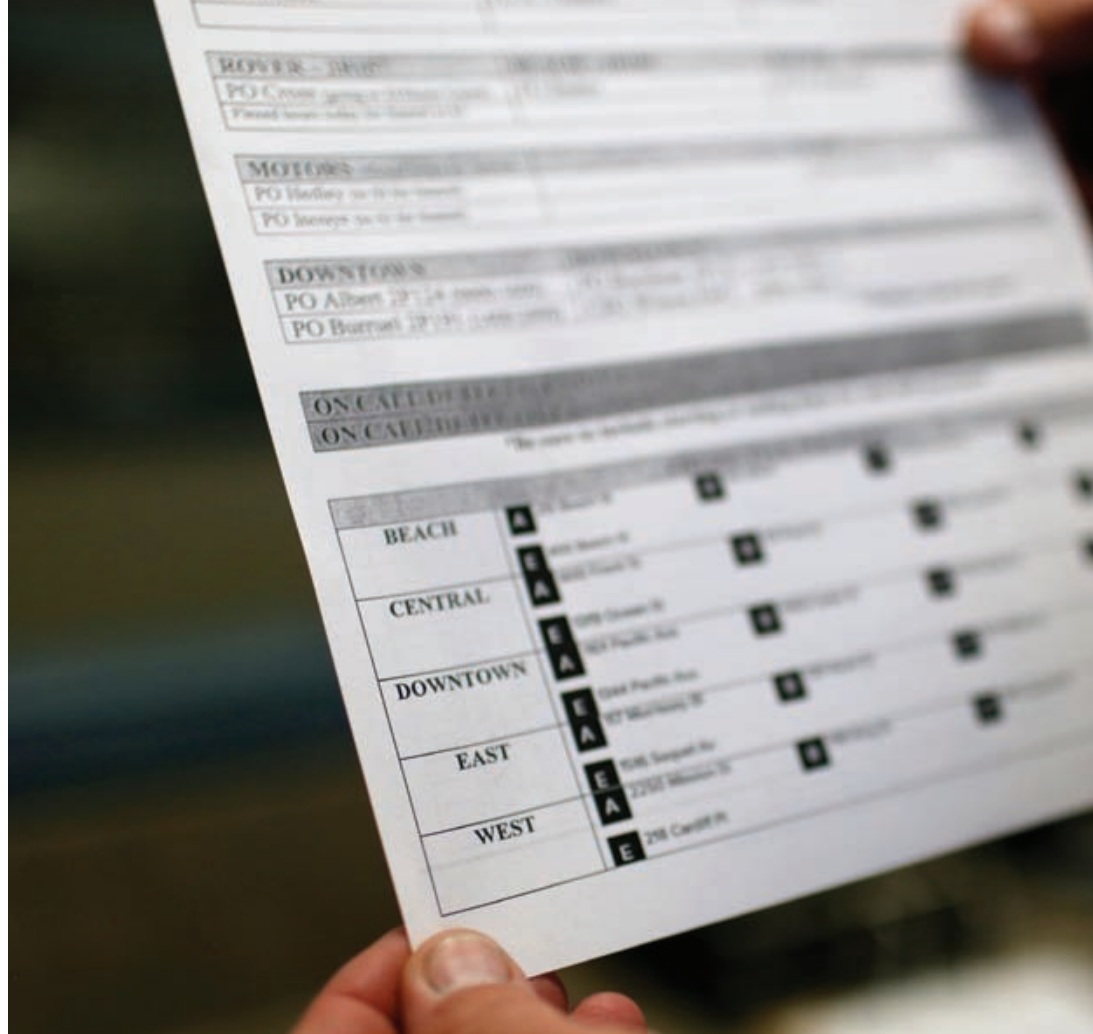
In San Diego, the city's police department (SDPD) employs facial recognition equipment to identify people its officers come in contact with. For example, if an individual does not produce an ID during a traffic stop, facial recognition could close the information gap for the officer.

According to Officer Steve Thorn, the SDPD facial recognition program coordinator, around 100 facial scanners have served the department well since the city first signed on with the Automated Regional Justice Information System, a larger regional law enforcement collective.

"Officers use the devices to assist in the identification of individuals lawfully detained or arrested when those persons are unwilling or unable to provide identity. A typical situation would be when officers contact an individual for a crime. The crime could be minimal in nature, such as littering or jay-walking, or more severe such as battery or theft," he said. "If the individual has no identification on them or would not provide their name, the officers could use the device to verify their identity and issue a citation in the field versus having to transport the individual to a police station and take fingerprints, which could be very time-consuming."

But the usefulness of the tools extends far beyond identifying criminals. Thorn said officers also use the department's 100 or so scanners to work with the homeless community and identify potential missing persons.

"I have spoken to a number of officers who use the device regularly. They all say the device works very well, saves time and helps prevent misidentification. The device is extremely useful for officers assigned to the quality-of-life team and homeless outreach team. Both teams are a resource to the homeless population, but also take enforcement action as necessary. A vast majority of homeless peoples have no identification in their possession, and the



device enables the officers to make quick identification and take appropriate action."

For critics, programs like these represent a way to capture and store permanent, vital information about civilians with little oversight. Most recently, the Next Generation Identification program took fire from critics when the FBI petitioned to exempt it from federal privacy regulations, which critics say would prevent the misuse and abuse of data.

In a U.S. Government Accountability Office report, published in May, the agency pointed to gaps in the FBI's processes and recommended steps the top domestic law enforcement agency could take to improve the program's accuracy and transparency.

## VIDEO: ANYTIME, ANYWHERE?

Police video is not a new concept by any stretch of the imagination. What started as the occasional camera capturing a liquor store or bank robbery has grown into cameras being installed on seemingly every street corner. In the past


few years, law enforcement agencies across the country have started equipping officers with body cameras to document interactions with citizens.

The prevalence of video and its societal benefits are the reason that researchers at Purdue University are working on the CAM2, a cloud-based platform that links publicly available cameras through a single, easily accessible portal. Despite how popular reports may have painted the research to this point, the team scoffs at the idea that it's a way for police to peer into the lives of unsuspecting Americans.

Yung-Hsiang Lu leads the team behind CAM2. From his perspective as a technologist, the system has applications in law enforcement environments, but it doesn't give them anything sensitive.

"We do not use any data that requests passwords, and furthermore we actually take reasonable efforts to exclude any camera we think may look at a private space," he said. "Most of the cameras we have in our system come from Departments of Transportation of different governments,





**Santa Cruz officers begin each shift with a report detailing predicted hot spots and items of interest.**

Control and Interoperability Environments in conjunction with the Department of Homeland Security's Centers of Excellence, and said the video platform has sparked the interest of some in the larger law enforcement environment who see more potential applications.

"One of the things that I see as a great potential for this also is in the emergency response and disaster response fields," he said. "Basically a tornado comes through or hurricane comes through, you're trying to do assessment of damage and where your resources should be allocated. Being able to pull up that information through this sort of system is a good way to crowd-source the information instead of having to wait until people upload photos, or look through Twitter images or Snapchat information and things like that."

But the tool comes with the need for the inclusion of best practices, Ebert added. While it may not be peering into the living rooms of everyday citizens, he likens it to how local agencies address the collection of information on publicly available social media platforms.

"I think a similar set of guidelines for these type of cameras would be very appropriate. Depending on your current interpretation of the laws, the view is that all of the information that people put out on social media they're making publicly available if they don't have privacy settings turned on, so there is no violation of privacy. That's the perception, but the question is, have the laws caught up with what the public expects?"

## THE EVOLUTION OF DATA ANALYTICS AND COLLECTION

And now to the stuff agencies seem a bit shy about.

The Stingray made recent national news as information slowly trickled out that the U.S. Justice Department had provided local agencies with the funds to purchase so-called cell-site simulators. The devices are designed to intercept cellular communications, access the data within them and track locations. But as quickly as the technology made its way to the headlines, legislation began to consider the implications of


what many considered to be the possibility of mass surveillance by local agencies.

States like Illinois and Nebraska began to propose legislation to strip agencies of their simulators and bar them from buying new ones. But this isn't the only kind of tech that has some people concerned. The Los Angeles Police Department declined interview requests about its use of a software platform produced by a company called Palantir, which also won't discuss its work with law enforcement agencies.

On the upside, the department talked about the product and its potential for a company testimonial, so we do have a small idea about what it is capable of, even if it's just the stuff the company needs to sell it to other departments. While the lack of transparency might seem like a cause for concern for residents, the system appears to be little more than an advanced data analytics platform geared toward law enforcement applications.

Basically Palantir's platform uses available data sources to "make sense of all of the noise that is out there," according to Police Chief Charlie Beck in a 2013 testimonial. "For years we've had stove-pipe systems that have a lot of information, but don't talk to each other and don't compare that information, and Palantir allows us to do that," he added.

While details are limited, as of a few years ago, the company was gaining momentum. In 2012, Palantir founder Alex Karp told *TechCrunch* that while he could not disclose how many government contracts the company had, he did say that doubling his staff would help it meet demand.

By pulling untapped or underutilized data sets into the investigative process, officers are now able to piece together information that might otherwise appear unrelated. Combining information like crime and arrest records, field interview cards, automatic license plate readers, Department of Motor Vehicle information and rap sheets, as well as publicly available camera footage and police body cameras, is helping to usher in effective predictive policing programs across the country. 

eeidam@govtech.com  
twitter@obsessivejourno

different states, different cities. For obvious reasons, because our research is about data management, it is not about looking at whether you are sitting on your sofa or not."

The scalable video platform allows users to log in and view a wealth of publicly available cameras collected from around the world, which can be watched in real time or recorded for later. In terms of potential, Lu said the analyzable data from the platform could ultimately help in a number of sectors, including transportation planning.

The problem facing the system is the fragmented sources of the video feeds, Lu said. Engineers have had to work around the multitude of camera systems to adapt them to a singularly accessible platform.

The larger challenge of video is inextricably linked to big data and has unsurprisingly been the focus of researchers around the world. While the platform may not equate to the next big surveillance tool, there are undeniable benefits for police, first responders and the communities they serve.

David Ebert heads up Purdue University's Visual Analytics for Command,





# A CALCULATED CONTEST

HOW GRANULAR ANALYTICS ARE DRIVING A MORE  
SOPHISTICATED APPROACH TO CAMPAIGNING. COLIN WOOD



Elections are like wars. Though more civilized, an election is a conflict in the pursuit of power based on ethics like understanding the enemy, adapting to a chaotic environment, dissimulation, deception and gathering intelligence to inform resource allocation. The philosophies guiding the hand of a winning general haven't changed since Chinese general Sun Tzu wrote *The Art of War* more than 2,500 years ago. The crucial difference is that the implements have changed.

Instead of gathering troops to intimidate the opposition, presidential candi-

dates analyze statistical models and make bold claims about the loyalty of their Twitter followers. Instead of flanking the enemy, they formulate precise TV ad campaigns and bluff about which states they intend to contest. Tzu promoted the idea of fluidity — that a wise general adapts to his environment like water flows around rocks. Failure to adhere to this piece of ancient Chinese wisdom has already claimed at least one casualty in failed Republican candidate Jeb Bush.

Bush spent about \$60 million on television advertisements, according to Prosper Insights & Analytics, but it got him no closer to the election. How people get their information, form opinions and interact with one another evolves daily, but a lot of politicians are acting like it's still 1972, said Philip Rist, executive vice president of strategy at Prosper.

"For folks like us who spend time analyzing human behavior, we know that the reason [Bush's campaign] didn't work is they were putting all their money in two forms of media that are not big with the younger people. They're putting it

mostly in television and direct mail," Rist explained. "They go do the old things that they always have done and now they're trying to figure out why it's not working. The millennials aren't watching TV."

Next to baby boomers and the retired, millennials are the most important age group this election, according to a Prosper analysis. Even Donald Trump, who called data analytics "overrated," began seeking help from analytics companies on how to target voter groups. It's hard to overlook data, because it powers all the tools candidates use.

Combining data from all over to form predictive models and spot trends is the skeleton of this beast. The meat on the bones is field tools — things like voter contact organizers and digital engagement tools, which are used to raise funds and ultimately get people to vote. There are a lot of moving pieces for data scientists to contend with, but the game's





objective is simple: Figure out which potential voters can swing the election, and fill their heads with bright ideas.

Analytics companies, which tend to lend their services exclusively to one political party or the other, include names like NGP VAN (Democrat) and Cambridge Analytica (Republican). A new addition to the scene is a company called Timshel, founded by Michael Slaby, chief technology officer for Obama's first presidential campaign. The basics of campaigning haven't changed in the last 100 years, Slaby said — but new tools like social media and an interactive Web make it easier to participate.

"I think the metaphor that's most valuable to think about is building a community," he said. "A campaign is fundamentally about building a community of people prepared to vote for you."

The days of blindly knocking on as many doors as possible are gone, Slaby said. Campaigns are mixing analytics and game theory to maximize resources spent on the middle and swing voters before the November deadline arrives.

"Where are those people? What media are they consuming? What messages are most likely to move them and inspire them to act?" said Slaby. "And how does that translate into electoral votes? [It's about] being able to optimize resources like, 'Should we be buying TV ads in Pennsylvania or Ohio?' Because if you're definitely going to win Pennsylvania, like, you're 100 percent sure, then you should spend zero dollars there. That's tough. How confident are you?"

Showing up at the podium and running down the bullet points isn't good enough. When just a few fractions of a percentage point can make a difference, candidates have to get scientific. Cambridge Analytica surveys what voters care about, but it also figures out why voters care about the things they care about, said Molly Schweickert, the firm's head of digital.

A political ad with a broad message about the economy, for instance, is less effective than a specific ad about the economy designed for a certain audi-



"IN MOST INSTANCES, WE ARE ABLE TO WORK AT THE INDIVIDUAL LEVEL OR THE INDIVIDUAL DEVICE LEVEL, NOT JUST THE ENTIRE HOUSEHOLD. THAT IS A TREMENDOUS LEAP FORWARD."

MOLLY SCHWEICKERT, HEAD OF DIGITAL FOR CAMBRIDGE ANALYTICA

ence. A young white-collar voter might care about the economy because he's looking to buy a house and start a family, while a middle-aged blue-collar voter who already has a family might have different concerns, and therefore different emotional reactions to the connotations of various economy-centric messages.

Analytics determine the message's vehicle too. Not everyone uses social media. Of those who do, some don't like getting their news there. Some might be willing to engage in political discussion with friends and family, or maybe some like reading news on Twitter, but not Facebook. These are the things that data companies are feeding their

models to help politicians figure out where their efforts go furthest.

"It's not just classifying people into these top-line groups based on what we know about their demographics, but digging into the behavioral signals they're giving out," Schweickert said. "In most instances, we are able to work at the individual level or the individual device level, not just the entire household. That is a tremendous leap forward. ... What we're doing is bringing humans back into targeting. We're not thinking of them as cookies or as an address. We're thinking of the human behind that."

Kim Wyman, secretary of state for Washington, is campaigning for re-election this year, and while she said her own campaign isn't as technologically sophisticated as politicians seeking more high-profile offices in the state, she's seen the game change a lot since starting her political career in 2001.

A Washington state-based technology consortium called TechRoanoke, for instance, today helps nonprofit organizations and conservative political causes use data to further their goals.

"You can download a walking list to your supporters and they can go out and knock on doors, and they really tied in a lot of analytical data so you know just who you're talking to when you go to that door," Wyman explained, noting that in years past, the information available was as simplistic as whether a given household leaned left or right politically. "... That's going to change some of that grass-roots campaigning in really powerful ways. We're just starting to tap into it and use it, but it has applications for doing direct mail pieces that can be very specific to voters in ways that I don't think we've ever seen before."

On the left, another Washington-state-based group called Fuse Washington is helping the presidential campaign with tailored messaging. By definition, being conservative means being slow to adapt new ideas and methods, and so the left's willingness to embrace new technologies is proving an edge for the party.

“They’ve been really effective in tailoring that messaging on a specific candidate or race to very specific voters and talk about it in those terms that really matter to them,” Wyman said. “Quite frankly, that’s what I’ve seen in this state and in a number of races nationally, why the Democrats have had really good success.”

Politicians from all parties are abandoning conventional wisdom as they find that norms relied on as recently as two elections ago don’t hold anymore. *The Party Decides*, a 2008 book by four political scientists, outlined a well accepted theory that a given candidate’s nomination is a foregone conclusion early in the process. The theory goes that party actors — those most involved in the political process like volunteers and other politicians — tend to rally around an electable, mainstream choice. And then came Trump, a man who until 2016 had been little more than one of America’s favorite punchlines.

Today’s political campaigns use common, ready-made tools like Twitter, Facebook, WordPress, DoubleClick and Google Apps, but the custom data engines that drive how politicians spend their time and money are what distinguish the modern campaign. During Obama’s second run at the presidency, his campaign experimented with the Civis Media Optimizer, a tool that helped it figure out which TV shows undecided voters were watching. By piloting variations of a similar advertisement in various small TV markets, Obama’s researchers were also able to see which messages were more effective with certain demographics.

What was experimental in 2012 has become necessity in 2016. The success of the Optimizer in Obama’s second campaign prompted the birth of a company called Civis Analytics the following year. What’s different today, explained David Shor, a data scientist with Civis Analytics, is the quality of the data, but also the scalability of the technology. It took 55 people working



“DATA AND REALLY SMART, RIGOROUS DATA SCIENCE IS CHANGING THE WAY WE TALK TO VOTERS, AND THE IMPACT OF THAT IS PEOPLE GET MORE PERSONALIZED AND RELEVANT MESSAGES.”

STEPHANIE HANNON, CTO FOR HILLARY CLINTON'S PRESIDENTIAL CAMPAIGN

on one campaign in 2012, he said, but today, six or seven people can do the same work on 60 races concurrently.

“The entire reason Civis was founded is that we’ve realized that the questions campaigns face are actually very similar to the questions that other organizations face,” said Shor. “We work with a wide variety of nonprofits and corporations because basically they have the same questions our political clients do, which is ‘Is what we’re doing working?’ ... You wouldn’t believe how many business meetings I’ve been in where C-suite executives say they want to treat their company like a political campaign.”

The thing that makes tools like the Optimizer relevant is that they are rooted in empiricism. In 2008, common sense told everyone that a person like Trump could never take a shot at the Oval Office, and common sense was wrong. A wise general is rooted in reality. He looks at the facts and plies his ethics against what is real, no matter how counterintuitive.


Peter Bouchard, the director of media science at Civis Analytics, explained that for a long time, people believed that the most effective slot for a campaign ad was during television news shows, because it was thought that news audiences were both suitably interested in politics and primed at that moment to receive a message.

“When we actually did randomized controlled experiments and built models, we found that, generally, people who are into news are not persuadable at all,” Bouchard said. “The TV show we found that had the most persuadable voters was *Dog the Bounty Hunter*, which ends up being a lot cheaper.”

The use of data is the biggest difference in today’s campaigns, said Stephanie Hannon, CTO for the Hillary Clinton camp.

“It’s the power of data to be hyper-targeted in all the different mechanisms you’re using to reach the voters and that includes advertising, that includes email, that includes the website, that includes how you talk to people at doors,” Hannon said. “Data and really smart, rigorous data science is changing the way we talk to voters, and the impact of that is people get more personalized and relevant messages to them in channels they care about, from people they care about.”

The shortcoming of these efforts is that they stop after the election ends, she said, but there’s value to society in developing these technologies consistently. It just makes it harder to build a viable business model over the long term.

“I wish more money was going into those spaces, because it’s important and there are big problems to solve,” Hannon added. 

cwood@govtech.com



# Reshaping Expectations

Cities are embracing the concept of beta testing, saying that the best thing to do before going live with a new website is to, in fact, launch a website.

By Jason Shueh / Staff Writer

For years there has been the belief that cities have to unveil new websites in the same fashion they present their plazas or parks: in one swift reveal. From the start, every amenity has to be ready, each piece of content added and the design — with the exception of minor garnishments — should be set and final.

Often, for city officials applying such tactics, an unwanted discovery was imminent. They might see to their dismay that the work wasn't done. Site features didn't work the way they envisioned. Navigation buttons went awry. The maladies just continued until leaders found themselves crossing fingers and throwing cash at the problems.

That was then, this is now, and luckily things are gradually changing. Cities have learned that websites — like any other piece of 21st-century tech — are always evolving. It's why they're embracing the idea of beta testing, whose advocates argue that the best thing to do before launching a website is to, in fact, launch a website.

Beta testing reshapes expectations for a “final product,” and instead, seeds the idea of an evolving service. Cities publish a prototype, gather public feedback, make adjustments, gather more feedback and so on, until a site is ready for rollout. The practice has gained appeal in Philadelphia, Los Angeles and other cities that have employed it to enhance services while avoiding launch day pitfalls.

To offer a few reasons why cities might consider such a strategy, Boston, a city of nearly 700,000 people, and West Carrollton,



Boston.gov will constantly be evolving — the final phase of its launch is called “continued iteration.”

Ohio, a city of more than 13,000, join the federal digital service 18F in demonstrating three advantages of beta launches.

## REASON ONE: Less Stress

In Boston, the city's foray into beta testing began in May 2015 when it sought to co-develop its new site with residents. The IT department built a blog to chronicle activities and sliced development into six phases. The first decided city partners for the project, the second entailed user research and the third included building the actual prototype. These phases were followed by the beta launch for feedback, the official relaunch of the site on Boston.gov and a final phase dubbed “continued iteration” that theoretically never ends.

What might shock traditional government types was an inherent lack of hard deadlines. Considering the fluid nature of

the project, Boston only set a rough timeline. This eased worry. Staff could take the right amount of time for quality development, while at same time, the flexible design took any causes for complaint and transformed them into constructive input via surveys, emails and open office hours. For government, the process was procedurally audacious, relatively foreign, and yet at the same time, safe and uniquely productive.

“The mentality we have around the website is that it's not something that you build, and then launch, and then orphan or leave over time,” said Lauren Lockwood, Boston's chief digital officer. “It's something that should always be improved and maintained.”

The build-and-adapt philosophy lifts internal tensions as well. Lockwood said that from a project management standpoint, communicating function

and design with a tangible product, as opposed to ideas and sketches, clarified a host of misconceptions at the start.

“It’s been really helpful internally as we migrate [data and content], because anybody in my position is going to be thinking about how to work with the teams internally to get all this done,” Lockwood said. “It also takes some of the pressure off once the site does go live because we’re not talking about putting things online for the first time.”

## REASON TWO: Solve the Right Problems

18F is an outfit in the federal government famously known for its capacity to solve problems. The group — which helps agencies build, buy and share software — aims to take complex policies and technologies and rework them into human-friendly services. 18F did this in 2014 when it helped save the Affordable Care Act’s health insurance platform, HealthCare.gov. It did it again with improvements to the Department of Homeland Security’s Immigration Application site, and applied the same sort of know-how at the U.S. Department of Veterans Affairs when it helped streamline the way veterans receive benefits.

18F members credit their knack for problem solving to modern design principles, concepts such as human-centered design and agile development — a collection of concepts that assess human behavior and embrace iterative methodologies to create user-friendly tech. In a statement to *Government Technology*, the group said beta testing is a fundamental component in these guiding practices. Similar to Boston, 18F jump-starts a Web project through a discovery stage that harnesses user research to target needs, which leads to an initial product via an alpha stage for solution testing. Shortly thereafter the group pilots a beta site to collect input for improvements before an official launch.

“Our design process starts by figuring out the right problem to solve and making sure that’s what we’re tackling,” 18F said. “Once we have an understanding of the right problem to solve, we use iterative testing, which includes any metrics analysis or usability testing, [and] we do this to continually validate that we are solving the right problem as best as we can.”

18F is in the process of relaunching the Federal Election Commission site, FEC.gov.

This project, designed to improve citizens’ access to federal campaign finance data, serves as a prime example of 18F’s beta work. At the FEC, 18F did a deep dive into the world of arcane financial regulations and outdated data systems to create beta.FEC.gov. The site is set to replace its predecessor with a bevy of new features, additions the group is honing with the experience of its partners at the FEC and average citizens.

“When 18F started talking to stakeholders and users, we learned that users were often worried they hadn’t found the right information, all the information, or the most up-to-date information when navigating the site,” 18F’s Leah Bannon and Noah Manger wrote in a joint post.

Now with a fresh look, the beta site is off to a promising start with a suite of simple tools that specifically answer user concerns. Just a few of the features include a new navigation menu that lets visitors search for election finance information by candidate name, a geographic location, or within the executive and legislative branches of government.

While 18F doesn’t typically develop city sites, it does serve a variety of offices and departments on civic projects. When attempting to answer problems, 18F’s advice to cities is to gather not just feedback, but also representative feedback that reflects the local population. This can be done affordably too. Often high-tech algorithms or enterprise analytics aren’t required. Feedback can come from highly accessible platforms like Google Analytics, a stack of emails, a site widget prompting reviews, or just plain observation and note-taking.

“We perform both in-person and distributed testing,” 18F said. “The beauty of technology is that it allows us to both see the user in action with a product, and allows us to see and/or hear what’s happening with the user at the same time.”

## REASON THREE: Community Buy-In

West Carrollton is not New York City, Chicago or San Francisco. Like most cities and towns across the nation, West Carrollton does not boast an armada of IT workers or pretend to be the next Silicon Valley. It’s a small Ohio town with a close-knit community of suburban homes, wide lawns and spurts of interwoven roads. So when officials in West Carrollton sought


to redesign their website at the start of the year, they approached beta testing as a way to build with community support.

Erika Mattingly, West Carrollton’s public relations coordinator, said the redesign began with guidance from the developers at ProudCity, a gov tech startup focused on digital services. Since much of the platform was already worked out, the beta launch was a brief two weeks starting on Feb. 9, out of which, Mattingly said staff and the Proud-City design team uncovered a surprising number of fixes and final adjustments.

“It was just a nice way to get feedback,” said Mattingly. “Not only from our residents and people using the website, but people internally within the city, who were essentially able to say ‘Hey, what about this?’ or suggest little things we may not have thought of when we first got started.”

**“The mentality we have around the website is that it’s not something that you build, and then launch, and then orphan or leave over time. It’s something that should always be improved and maintained.”**

The city placed a link to its beta site on its old home page, created a banner on the new site to draw input, while City Manager Brad Townsend reached out to key stakeholders for their impressions. The outreach yielded technical improvements to icons, content and search terms, but more significantly, Mattingly said the beta testing brought about a measure of community endorsement. Residents saw the public outreach effort on the site, found out through word of mouth, and then saw their notes and suggestions turned into site updates.

“It was a much easier process than it ever had been before when we had revamped our website,” Mattingly said. “I’m glad that we took the leap and tried something different.” 

jshueh@govtech.com  
twitter@jasonshueh





# Legislature.gov

Function trumps form in the quest to shine light on state policymaking.

By Eyragon Eidam / Assistant News Editor

In just the last few years, the public sector has been abuzz with plans to open data and revolutionize the way citizens interact with their government. But behind these well meaning attempts to further the democratic process with technology, glaring inconsistencies remain.

State legislative websites, among other online assets, are a prime example of this point. True, the majority of Americans have likely never been to their state's legislative website, but there are groups that rely on regular, effective access to session information to transmit what they find through more digestible means.

Journalists who report on congressional goings-on, watchdog groups and lobbyists are just some of the individuals perusing state portals on a daily basis. Often the lack of modern search tools and Web best practices make getting to critical information a challenge.

And while some legislative websites struggle, there are states that are getting it

right. Their approaches are worth noting as well.

## Where Legislatures Can Improve

We have come a long way since the days of sitting in the gallery and carefully noting floor votes by hand. Today, at the intersection of government and technology, legislatures are embracing streaming video and other tools that bring the happenings on the floor into the offices and homes of those who are invested enough to watch.

Other tools like Google-esque search features allow online visitors to quickly and easily find bills or subjects that matter most to them, and in some states the results of votes are updated the same day.

While the general design of a website is important to an end user, access to the meat of it all is the important part to government watchdog group the Sunlight Foundation.

"The advice that we have given, particularly as different government agencies come to us and [ask], 'How can we make

our website more functional?' [is] we often point out that the best way to do this cheaply ... is to improve the accessibility of your data so that at least it can get used," said Sunlight Senior Analyst Emily Shaw.

In releasing data, whatever it may be, Shaw argues that other groups outside of government may be able to translate that data into usable information for other constituents. While an easy-to-navigate website is an added bonus, it means nothing if there's no substance behind it.

With states looking to be as cost-efficient as possible, website redesigns are often what she calls a "hard sell." Instead of focusing on the overall presentation of a portal, she points to the addition of tools that will improve the timeliness of data, like machine readability.

The Center for Data Innovation agrees that there's work to be done in making more of the legislative process publicly available. Director (and *GovTech* columnist) Daniel Castro said there are

gaps in the process, especially when it comes to things like scanning handwritten notes and committee votes.

He sees this as cause for collecting more digitally. “Right now in some states you’ll basically have handwritten changes to bills or things like that where it is not being captured electronically — especially committee votes — so it’s hard to actually see that process if the information isn’t digital. Capturing the data well in a digital format is another big thing we are looking at.”

In some states, bills are regularly posted as PDFs, which Castro said is a clear indicator that legislatures need to update their systems. The format can make finding information a laborious and difficult process.

“These types of things are a huge impediment to transparency,” he said.

Another issue is the lack of cohesive standards and best practices. With each state approaching the information

it disseminates to the public differently, there are few real guidelines for portal managers to look to when it comes to making the sites they run good vessels for communicating legislative information.

“There are different things that people want access to. I have yet to see real clear and generic rules for how to make legislative information most accessible, or most useful for people,” Shaw said. “I think it’s something that we all know when we don’t feel it, but the articulation of specifically what you need to do in order to make it most usable is a more complicated question.”


### Promoting Usability

The next natural step in the progression of government legislative portals is making data available by API, or application programming interface, and structuring the data to maximize its utility.

Castro and Shaw agree that the move toward APIs would allow outsiders to more easily use the wealth of informa-

tion held by government. Though your average person may not access data sets for his or her own enjoyment, other groups and entities can help to turn data into publicly useful information.

“Something that I think we are hoping to see more states doing, something that leading states like Washington and the New York Senate are already doing, is making their data available by API or Web service,” Shaw said. “As different kinds of analysis start to rely more heavily on API access to their sources of data, it’s going to continue to make this information accessible to the largest number of technical users.”

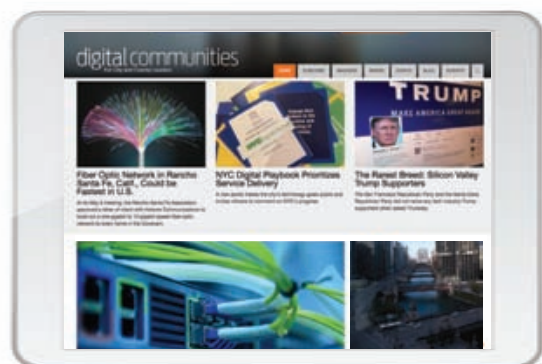
Castro added that a willingness on the part of those within the federal government to move toward more usable structured data that could easily be used analytically would also go far to advance the mission of government transparency. 

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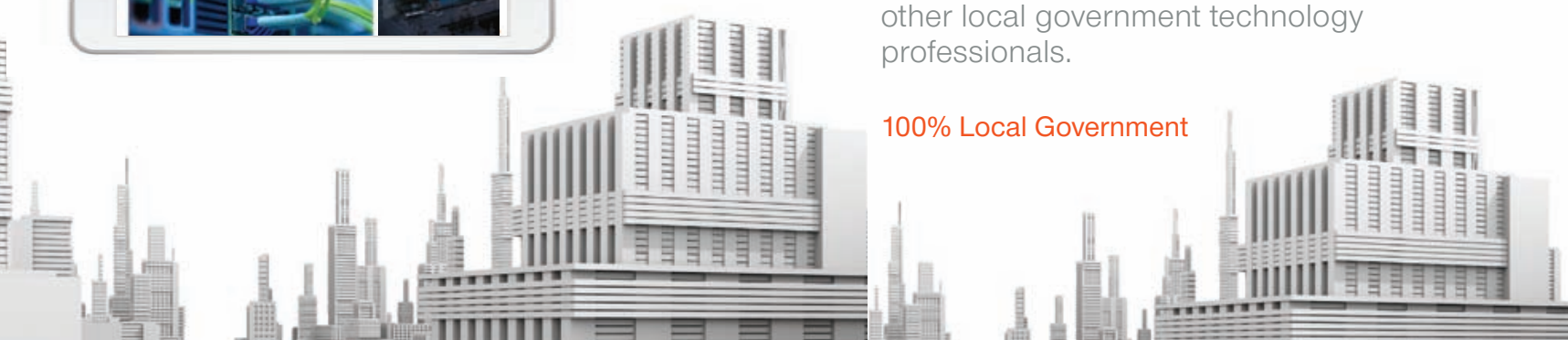


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# Eye on Accessibility

Why there's still work to be done on developing government portals that all residents can use.

By Julia McCandless / Contributing Writer

Despite major technology advances over the years, many organizations still struggle with digital accessibility. A 2015 study by the Centers for Disease Control and Prevention found that 53 million — or one in five — adults in the U.S. have a disability. That's a large chunk of the population that must be considered when designing government websites and online features.

While there are many tools for disabled individuals to utilize computers and mobile devices (e.g., screen readers for the blind), there are still major challenges that stem from how content is provided. So what issues do individuals with disabilities face when accessing websites?

According to Sachin Pavithran, chair of the U.S. Access Board and director of the Utah Assistive Technology Program, much of it comes down to how information is presented. "The bigger problems are that a lot of these websites have a lot of information," he said. "Even though you can access it, the way the information is laid out could create a barrier because it's hard to navigate due to the structure. That's one of the biggest barriers right now: how information is laid out."

Pavithran, who is blind, runs into this problem a lot. "For example, if I go on a Web page and there are pages of information but there's no way to distinguish one section from the next, I can't prioritize,"

he explained. "Whereas someone who doesn't have accessibility concerns can skim through to jump through each section, I have to go from top to bottom."

While the prevalence of Americans living with disabilities is undeniable, there are few accessibility guidelines or models for organizations to follow to ensure they are up to par. The most well known accessibility standard is Section 508 of the Rehabilitation Act, which outlines basic compliance standards for federal agencies to follow regarding electronic and information technology. In addition, the World Wide Web Consortium has released the Web Content Accessibility Guidelines 2.0, which serves as a key reference for many organizations that are focused on improving or reviewing their accessibility compliance.

## Prioritizing Web Development

Despite the resources available, many organizations aren't quite hitting the mark when it comes to providing optimal digital accessibility. That's likely because accessibility is often viewed as an afterthought instead of a key piece of the development from the get-go.

"The biggest thing is how you exercise higher priorities," said Pavithran. "A lot of times, accessibility is thought of after the fact. For example, when we talk about most websites in the government sector, security is a huge factor, but accessibility is nowhere

in that conversation. You need to ensure accessibility is a part of the design phase — understanding what accessibility at large means needs to be more engraved in teams that work in these kinds of environments."

That's where organizations like WebAIM, a nonprofit based at Utah State University's Center for Persons with Disabilities, come in. A majority of the services that WebAIM provides are accessibility evaluations and trainings to assist private and public organizations, including the CIA and IRS.

Jared Smith, associate director of WebAIM, said the organization's clients are eager to improve, they just don't necessarily know where to start. "Most of the time when people get to the point of engaging with us, they have an understanding that there are some problems — many of them don't understand the extent," he explained. "Our approach is to educate and empower our clients. We don't want to build a reliance on our services; we want them to become the experts. That's why we don't fix people's websites for them — we provide training on how to fix them so they can do it on their own."

Reshaping the way accessibility is thought about is important when it comes to staying relevant to all users. "The training gives a broad understanding of accessibility and of disability," Smith said. "We focus on the end-user experience. What does disability mean? It helps them









# Getting to Yes? No, Thanks

Innovation may be scary for bureaucracies, but can lead to new and preferred futures.

**T**he remarkable thing about innovation in government is that it happens at all.

The even more remarkable thing is that it often makes the private sector better — challenging incumbent industry players and startups alike to help solve big, complex and public problems.

It is a reach for public agencies too. Not only do these arrangements cast government as both customer and partner in innovation, but they also go against type.

Public institutions are equal parts ballast and glue — the former providing stability in the sometimes rough seas of societal, economic and technological change; the latter serving as a social mucilage that helps hold communities together. The guardians of those institutions, and many who work within them, are understandably resistant to shaking things up.

By one recent estimate (ours) there are at least 175 public employees doing the work of innovation officers. They are not Machiavellian in disposition, but Nicolo aptly described their role about 600 years ago: “It must be considered that there is nothing more difficult to carry out nor more doubtful of success nor dangerous to handle than to initiate a new order of things.”

Look at what the cloud has initiated.

Today you cannot compute without it. But it was only five short years ago that two-thirds of state CIOs responded

to a straw poll by selecting “no clouds in sight.” In the intervening years, the technology has matured and competitors entered into a certification arms race to earn their way into the government market. The blue-skies point of view has also flipped, with many state and local CIOs actively working to get themselves out of the infrastructure business.

**Nicolo aptly described the role of chief innovation officers about 600 years ago: “It must be considered that there is nothing more difficult to carry out nor more doubtful of success nor dangerous to handle than to initiate a new order of things.”**

Today self-driving vehicles bring with them the promise to usher in a new order of moving people and things. Their entry onto public roadways has raised concerns among consumer advocates and policymakers about safety, security, liability and a lack of training about how not to drive this new category of vehicles. The level and variety of automated features further confuse the conversation — parking and braking assistance are, by themselves, well short of being an autonomous vehicle. Fully self-driving cars are not expected to be on the road until 2020, but self-driving technologies — including parking assistance, blind-spot

detectors and front-end crash warning systems — are being built into cars today.

As builder of roads; regulator of car manufacturing; licenser of drivers (for now), taxis and ride-hailing companies; and provider of public transportation, governments have a multifaceted role in the development of this form of transportation. That is a lot to unpack and time consuming to resolve, particularly if government is relying on its own policy deliberations to get it done.

But government is not acting alone. The insurance industry is signaling its willingness to buy risk in the meantime. A UK firm has introduced policies for driverless cars, which includes coverage for failure to: (a) install vehicle software updates and security patches, and satellite outages affecting navigation systems; (b) manually override the system to prevent an accident should the system fail; and (c) loss or damage if the car gets hacked.

In both cases — the cloud and self-driving cars — third parties are doing what government cannot in mitigating risk. These moves provide coverage, literally and figuratively, for government and other players in moving forward with innovations. That is very good news because guardians of the past tend to be comfortable with the deliberative processes that lead to “no” and remove the need for action. “Yes” is scarier for bureaucracies, but that is the answer that leads to more interesting paths to what very well could be preferred futures. 

**Paul Taylor** is the chief content officer of e.Republic, Government Technology's parent company.

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# Keeping Open Data ‘Open’

Policymakers must recognize the importance of this public resource.



One of the defining traits of open data is that it is freely available to the public without any restrictions. In short, open data must be open. However, in March, a committee in the California Legislature approved Assembly Bill 2880 (AB 2880), which would grant the state and local governments the ability to apply intellectual property restrictions to all government materials. While supporters of the bill ostensibly intended AB 2880 to prevent potential intellectual property copyright disputes with contractors, in effect the legislation could make everything that a public entity creates — such as reports, maps and of course data — subject to copyright protections that would restrict the public’s ability to access and use this material.

Fortunately the California Senate recently struck those provisions from the bill, but had it not, open data would have been dealt a serious blow in the state. Regardless, that any legislation would propose establishing such authority indicates that there is still a long way to go to ensure that policymakers recognize the importance of open government data.

Federal copyright law explicitly states that works of the federal government are not eligible for copyright protection, and for good reason — tax dollars fund the government’s activities, and taxpayers should be able to use and benefit from

any data generated by these activities. However, the federal Copyright Act does not apply to state and local governments, which is why California lawmakers were free to consider AB 2880.

Restricting how taxpayers can use public data is, at best, double-dipping — charging taxpayers for something they have already paid for — and, at worst, an attack on open and accountable government. For example, AB 2880 would have allowed a government agency to claim intellectual property protections on data revealing fraudulent or wasteful spending, and though the California Public Records Act would prevent the agency from withholding this data if someone requested it, the agency would be able to restrict how that information is shared or displayed.

Open data is still a relatively new concept in government, and robust open data policies were only officially defined at the federal level in 2013. On the local and state levels, the vast majority of open data policies have only come into existence in the past five years. However, that open data is still in its nascent stages of development is all the more reason to strongly push back against policies that could threaten its future.

This is particularly necessary for California, which has demonstrated a series of missteps that show open data is on shaky ground. For example, though some state agencies publish open data, and some municipal governments have their own open data policies, the State Assembly in September 2015 failed to pass legislation

that would have created California’s first statewide open data policy and thereby clearly establish that government data was a public resource. And in 2013, the California Supreme Court had to rule that publicly funded GIS data qualified as public records after the Orange County government tried to charge businesses and members of the public \$375,000 in licensing fees to access this information. In effect, AB 2880 would have allowed all state agencies to do what Orange County tried to do with its GIS data.

As governments increasingly recognize the value of open data and adopt sound open data policies that ensure open data is truly “open,” the potential for AB 2880-style legislation cropping up elsewhere may decrease. But as of now, only a small fraction of city, county and state governments in the U.S. have open data policies, and it is likely that some lawmakers will again fail to recognize that government data is a public resource and attempt to restrict public access. When they do, open data advocates, the private sector, other policymakers and the public as a whole should firmly resist. **ut**

*Joshua New, a research analyst at the Center for Data Innovation, contributed to this column.*

**Daniel Castro** is the vice president of the Information Technology and Innovation Foundation (ITIF) and director of the Center for Data Innovation. Before joining ITIF, he worked at the Government Accountability Office where he audited IT security and management controls.



## ◀ Convertible Spin

Samsung Electronics America announced the Notebook 7 spin, a new laptop two-in-one that converts into a tablet for users who require flexibility both in the office and on the move. The Notebook 7 spin is offered in two form factors. The 13.3-inch model is powered by an Intel i5 processor and built with a 500 GB hard drive and 8 GB double data rate fourth-generation (DDR4) memory at 2133 MHz. The 15.6-inch laptop operates with an Intel i7 processor, a 1-terabyte hard drive, a 128 GB solid state drive and an 8 GB DDR4 memory at 2133 MHz. With one flip, the Notebook 7 spin uses Continuum to transform from laptop to tablet, while sporting a 360-degree touch display offering multiple viewing angles.

[www.samsung.com](http://www.samsung.com)



## Working Game ▼

The new Alienware Alpha is both a gaming console and desktop PC that can be transported easily with minimal setup. Its compact design now comes with 60 percent higher GPU performance than the previous generation and better frame rates at higher resolutions and higher settings. The Alpha contains a 6th Generation Intel Core i3 processor, as well as 8 GB DDR4 of memory at 2133 MHz - 1 DIMM and 500 GB hard drive. The PC measures 2.17 inches x 7.87 inches x 7.87 inches, and starts at 4 pounds. [www.dell.com](http://www.dell.com)



## Power Port ▲

SMK-Link Electronics introduced the USB-C Multi-Port Hub. Designed as a docking station for laptop computers using a USB-C port interface, the ultra-portable USB-C Multi-Port Hub enables multiple connectivity options, including a USB-C charging port, an HDMI HD/4K video port, a gigabit Ethernet port, three high-speed USB 3.0 ports, and SD and Micro SD memory card readers. When not plugged in, it provides network, HDMI, USB and card reader connectivity. When it's plugged in, it also powers external USB drives while charging the user's laptop. The hub measures 4 inches x 2.5 inches x 0.5 inches.

[www.smklink.com](http://www.smklink.com)





## ◀ REWARD FOR HEALTHY ACTIONS:

Aiming to create a cleaner environment, the TreeWiFi device is a small birdhouse that uses different colored lights to indicate the current level of air pollution in Amsterdam and provides the reward of connectivity. The birdhouse's roof is green when air quality improves, activating complimentary Wi-Fi. But when the light is red, the air is polluted and Internet access is disabled. An app connected to the platform lets the local government review data from the devices to better understand pollution, and residents can use it to get tips for improving air quality.

SOURCE: CITYLAB

## GREEN PORT FOR L.A.:

July 12 marked the official launch of a program to create the world's first off-grid marine terminal at the Port of Los Angeles. The \$26 million Green Omni Terminal Demonstration Project will include a 1.03 megawatt photovoltaic array, a 2.6 megawatt-hour battery storage system, and bi-directional charging equipment that can both receive and supply power. Officials expect the green tech to be running by the end of the year.

SOURCE: GIZMAG



# 2.4 MILLION

The number of drones that are expected to be sold in the U.S. in 2016. The Consumer Technology Association's semi-annual forecast also predicts that 48 million wearable devices will be sold, a trend driven by fitness activity trackers.

**Mutton Tech:** When Google Street View didn't visit the Faroe Islands in Denmark, a resident turned to a local resource to get 360-degree photos of the area: sheep. As part of Sheep View 360, cameras that take a photo every 60 seconds are strapped onto an animal using a special harness that's outfitted with solar panels. The pictures are live-streamed to the local tourism office and also uploaded to Street View using their GPS location information.

SOURCE: ENGADGET



Send Spectrum ideas to Managing Editor Elaine Pittman, [epittman@govtech.com](mailto:epittman@govtech.com), [twitter@elainerpittman](https://twitter.com/elainerpittman)



# Hitting the road to drive innovation

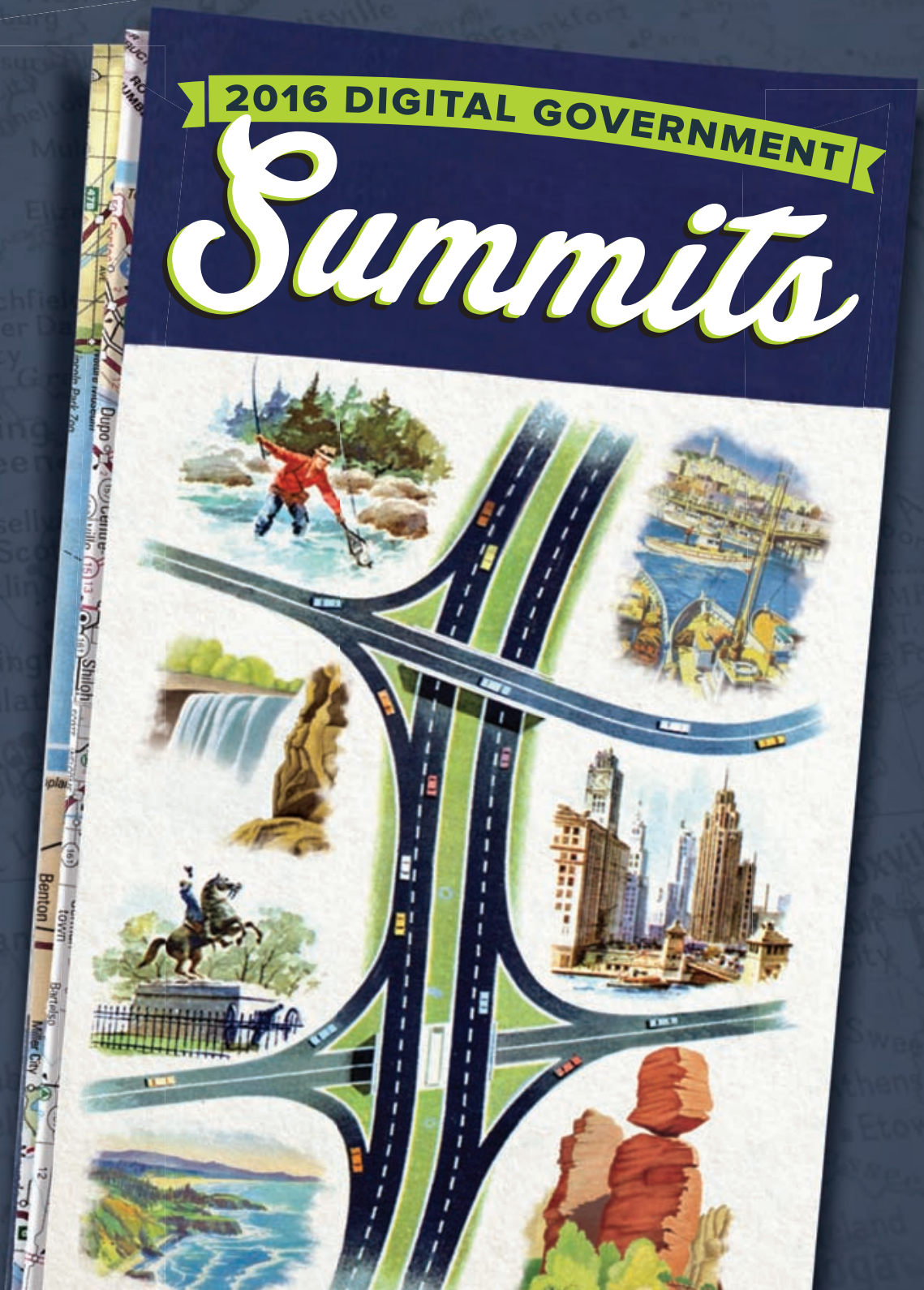
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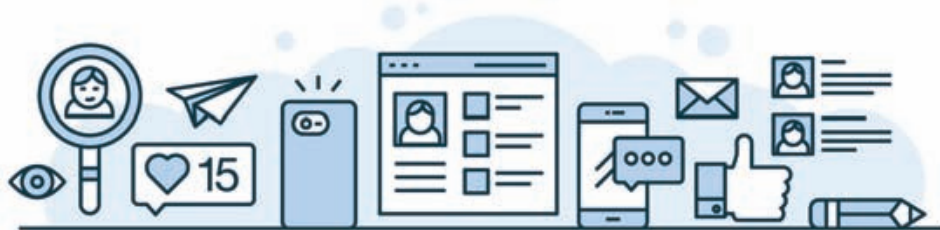






# Encourage the Conversation

Are you still nervous about Facebook comments? Here's how to address major concerns.



**E**ven in 2016, some government agencies are still hesitant about creating an official page on Facebook, for fear of comments. Many times, these agencies are smaller cities, counties and special districts.

Because Facebook doesn't allow page administrators to "turn off" comments, there are typically two reasons why government agencies are hesitant to create a page on the popular social platform: There's no time to monitor comments and concern about negative comments.

## We Just Don't Have Time to Monitor Comments

First of all, being a Facebook page administrator for your agency doesn't mean that you have to hang out on your page all day and night, waiting for comments to come in. Using any number of social media management tools, or Facebook's

own notification settings, you can receive an alert anytime a comment is made on your page — including receiving the alert as a text message. You can then determine if a response is necessary. Remember, not all comments are questions that will require a response.

If your Facebook page repeatedly receives the same

comment from numerous citizens, you might "pin" a post to the top of your page that features your agency's official response. Also, if your page is set up to receive private messages, you can turn on the "response assistant." This feature sends a customized reply to let the people who send a message know that it is outside of the business hours when you'll be monitoring messages.

## We're Concerned About Negative Comments

Understand that if your citizens are unhappy, they are going to make negative comments about your agency whether or not you have a Facebook page. If you do have a page, it gives you the ability to respond to those comments to correct misinformation or help your constituents if they have a legitimate problem.

If notoriously negative comments on your local news sites have given you a bad taste, understand that Facebook commenters are generally a bit different. Why? Because they typically aren't hidden behind the generic user name mask of anonymity that news websites commonly have. People seem to be less likely to enter into online rants if their identity is public.


Facebook offers an optional profanity filter that can be turned

on in the page settings. According to the company, it determines "what to block by using the most commonly reported words and phrases marked offensive by the community." I would advise that if you opt to use the filter, incorporate that fact into your official comment policy and be transparent about this publicly on your page.

## Negativity Stemming from Inaccurate Information

If the negative comments from your citizens are caused by incorrect information, it's a perfect opportunity for your agency to set the record straight by replying with the correct information. The key is doing this tactfully and respectfully — your tone is extremely important in these situations.

But what if these inaccuracies are repeatedly referred to in comments, or done so maliciously even after your clarifications? One approach is to create a rumor page online, and point citizens back to this anytime the incorrect information resurfaces on social media. For instance, Kansas City, Mo., has a section of its website dedicated to this purpose and even encourages citizens to contact the city if they hear rumors in the community.

Please don't let the commenting function of Facebook deter your agency from setting up a page. Just like the official public comment time during meetings, hearing and responding to social media comments can help your agency earn valuable trust with citizens. 

Kristy is known as "GovGirl" in the government technology industry. A former city government Web manager with a passion for social media, technology and the lighter side of government life, Kristy is the CEO of Government Social Media.

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