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2.0

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When managing security in an all-IP network, it helps to see the big picture.

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March 2015

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Open Data and the Power of Engagement

As the open data movement nears the 10-year mark, where does it go from here? Some would like to see open data become more open and inclusive — and less government-centric.

As this issue went to press, a diverse group of elected officials, policymakers, CIOs and innovation officers met in Louisville, Ky., for an e.Republic conference on government performance and innovation. When the talk turned to open data, the consensus was that governments need to look beyond their own walls to make it more meaningful.

“I have almost a negative view of open data,” said Bryan Sastokas, CIO of Oakland, Calif. “I think cities don’t give it the right attention. It’s not helping consumers. It’s not helping residents. It’s not helping businesses, the average utility customer, but knowing that you’re using more water than 80 percent of your neighbors does. Fortunately, governments don’t need to figure out open data on their own. Outside innovators and other partners can help improve data presentation if agencies are willing to engage with them, Sastokas said.

Or maybe governments don’t need to run the open data process at all. “People thought the open data conversation stopped at government, which is ridiculous,” said Ted Smith, chief of civic innovation for Louisville. “We need to work with citizens or groups that will provide data for us. We don’t need to be the owner or arbiter of open data.”

He says nonprofits or other civic-focused third parties may be willing to take over open data portals that are currently run by cities — and mix in new types of information, context and relevance.

“Open data isn’t good on its own; it’s how it’s used,” Smith said. “The goal is to improve people’s lives.” Although states and localities have put lots of raw data online, they’re not helping consumers make sense of the information. Providing some perspective would help. For instance, detailed water usage data doesn’t mean much to the average utility customer, but knowing that your neighbor uses more water than 80 percent of your neighbors does.

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Doubling Down on Broadband

Google is launching a $1.8 million broadband program that could raise the bar for state-level high-speed Internet expansion efforts. The plan features a $500 million investment from the state, awards from which must be matched at a 1:1 ratio by providers and communities interested in building or extending a broadband network. Called the New NY Broadband Program, participants must provide speeds of at least 100 Mbps, and projects require local input to guide development. The program complements Gov. Andrew Cuomo’s existing $70 million Connect NY broadband grants that were awarded to improve high-speed Internet access in the state’s remote areas.

$1.8m

The amount of a grant given to Pittsburgh and Allegheny County to harness data that informs business processes and decision-making on a daily, regional basis.

WHO SAYS?

“The amount of a grant given to Pittsburgh and Allegheny County to harness data that informs business processes and decision-making on a daily, regional basis.

"There is a growing demand for libraries to evolve their role and become more dynamic, living platforms, responsive to community needs."
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3 cities are building a culture and practice of innovation in real time through the City Accelerator.

Learn from their experience with a free roadmap for making innovation work in your city.

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The City Accelerator is an initiative to speed the adoption of local government innovations to improve cities and the lives of their low-income residents.
New York City's Department of Information Technology and Telecommunications Operations Center in Brooklyn is always open, housing an average of 90 support employees at any one time from several technical teams: the Citywide Service Desk, Windows Operations, Network Support, Mainframe Operations, Messaging Support, Data Center Operations, Unix Operations and NYCWiN (New York City Wireless Network) Operations.

Open since 2013, the facility has the people and tools to tackle a variety of tech issues affecting infrastructure, applications, network, voice and data functions. The operations center can also serve as a disaster recovery site for the city's 311 call center, featuring connectivity and back-up technology in the event the primary 311 center must relocate due to an emergency.
Over the last four years, cities across the country have rushed to join the march toward transparency and open data. Yet the words carry many meanings and even more approaches. Cities vary greatly on what data they open, how usable the information is, and how much they work to help the public use that data. Important to those cities really committed to open data is their ability to benchmark themselves against others. As a result, I’m seeing more and more benchmarking of data transparency efforts, originating from both inside and outside of city hall.

One of the cities leading the way on this issue is Philadelphia. As documented in a Sunlight Foundation blog post, Philadelphia’s Open Data Team used benchmarking to determine that the city was behind its peers in releasing certain difficult, costly data sets. The team looked at the data portals of four other large U.S. cities — Baltimore, Boston, Chicago and New York City — to identify and then analyze the data sets those cities were publishing that Philadelphia was not. That helped inform Philadelphia’s Open Data Census and gave the city insight on its own open data progress.

Of course, these benchmarking efforts aren’t coming exclusively from within government; both the private and nonprofit sectors are also getting in on the action. This past October, the software company Socrata released the results of a survey of government officials on their practices and plans for open data, providing governments of all sizes with information about what their peers are doing and thinking. And then there’s the U.S. City Open Data Census, a collaboration between Code for America, the Sunlight Foundation and the Open Knowledge Foundation. The continuously expanding tool uses crowdsourcing to rank cities based on the transparency of their data, creating an interactive matrix that allows users to quickly evaluate the openness of data sets ranging from asset disclosure to zoning.

Anyone can use the tool, and in Los Angeles city government, it’s proved to be a valuable resource in decision-making. “The census has been a really helpful guidepost in terms of what data we should be prioritizing,” said Abhi Nemani, Los Angeles’ chief data officer, who previously worked at Code for America while the census was being developed. “It’s helpful to have an external indicator of what data matters and what we should be opening up.”

Nemani said that L.A. recently published a consolidated list of city-owned properties partly in response to seeing the data set prominently highlighted on the U.S. City Open Data Census as something many other cities were releasing. L.A. has also closely studied the data sets opened by a host of local governments — including Chicago, New York City, San Francisco, Baltimore and Montgomery County, Md. — as the city works to develop a road map for its future open data efforts. In more and more cities, local officials are realizing that benchmarking can help them learn from the mistakes and successes of their peers as they tackle the challenges of open data. Indeed, only by looking at one another can cities gain exposure to new ideas and technologies, identify relative weaknesses and assess how well they’re doing — insights that are particularly valuable in an ambitious undertaking like an open data initiative.
Q&A: Extending an Already Powerful Government Platform

Accela has always had one mission for its Civic Platform: to better connect government agencies with the citizens they serve. To further this mission, Accela is expanding the capabilities of its Civic Platform. In addition to its core capabilities of Land Management, Asset Management, and Licensing and Case Management, Accela recently added solutions for Legislative Management, Citizen Relationship Management, Recreation and Resource Management, Environmental Health and Safety, and Right of Way Management.

In this Q&A, Accela President and CEO Maury Blackman discusses what makes the Civic Platform unique for government, how it helps agencies innovate, and why its new capabilities can be a game-changer for municipalities and the citizens they serve.

Q: What are the capabilities of the solutions Accela has recently added to its Civic Platform and how do they help government streamline processes and engage with constituents?

MAURY BLACKMAN: Our platform integrates a wide variety of solutions into the overall government enterprise, so when we looked for companies to join our family, we sought solutions tangential to our central capabilities. Our core competency has always been around land and asset management and business licensing, so we wanted to acquire companies that fit that mold. This includes our new Legislative Management solution, which streamlines the entire civic meeting process from agenda development to minutes distribution to streaming city council meetings online. Many civic meetings involve reviewing plans for new businesses or use of land. Because our solutions help agencies create a system of record on these projects in later phases, Legislative Management is an adjacent tool to our existing capabilities. Our new Right of Way Management solution offers map-based coordination to identify conflicts or opportunities that exist in the public right of way. That’s everything from street cuts to coordinating closures for special events to managing emergency situations, and it is really the coordination of activities in front of a business or a development project. These new solutions are all complimentary to what we are already doing in our core space and help to create a cohesive platform for government leaders and citizens to better communicate and streamline processes.

Q: How will these solutions be a game-changer for your government customers?

MAURY BLACKMAN: We are connecting citizens to government by offering a comprehensive platform approach. We’re providing our customers with a broad solution set and increased flexibility to build, add and deploy, plus an ecosystem of partners and developers that are really speeding innovation on the platform. The additional capabilities give government agencies increased flexibility to integrate the records and systems they already have in place. We often hear customers say they want to extend the services and data they have around our products. By providing solutions that touch citizens in novel ways, it gives us an opportunity to add value to the ecosystem of citizen and government interaction.

Q: What makes Accela’s Civic Platform unique and a strong, trustworthy foundation for government agencies?

MAURY BLACKMAN: When we first built this platform from the ground up, we built it with government in mind. We have customized the platform tools to work in sync with how governments operate. For example, in a typical workflow system, people build workflows that help manage activities among different groups. That’s great for private companies, but we have built our workflow in a way that really responds to how governments do business. Everything we do—from the way we build our software development kits (SDKs) and our application programming interfaces (APIs) to the way we have built our solutions and integrated them with services—has a government flavor to it and adds uniqueness to the story we have to offer.

Q: How is the Civic Platform helping municipalities innovate?

MAURY BLACKMAN: When we built our platform, we offered common services. On top of those services, we provide a set of solutions such as Land Management, Asset Management and Citizen Relationship Management. However, we also support our customers with a powerful SDK and API stack that enables them to build their own solutions that are unique to them. For example, one of our customers, the city of Westminster, Colo., has a specific manhole inspection process. The process is very important to the city and—although it’s not something our customers frequently focus on—we enabled Westminster through our API stack, to build this inspection capability. The city now has an app that allows employees to inspect manholes in 30 seconds versus the 5 minutes it used to take. That’s significant as the city inspects nearly 5,000 manholes each year. In Palo Alto, Calif., Accela’s open platform allowed the city to put its building permit and inspection process online. This has significantly streamlined what was once a tedious process for city employees—who issue 4,500 permits per year and coordinate 24,000 annual inspections—and their customers, the developers and architects who used to have to stand in line for hours at the Development Center. Overall, we provide the flexibility and the tools that allow government agencies to express their uniqueness through software and technology.
Why is the state launching an open data site? Financial transparency information, including payroll data, for state and local entities in Utah has been available online for a number of years. Last year, our state Legislature passed a bill to take this further and add all open or public data to a central website. We got funded for this on July 1. Using tools from Socrata, we created the initial release of opendata.utah.gov on Jan. 1, with about 900 data sets. We’re still growing; this is the first phase.

We have a data coordinator who is working with the agencies. Our goal is to have all open data for all government entities in Utah on this site by December 2016.

How are users reacting? We’ve gotten about 700,000 page views on the site in about six weeks, and we’ve done very little to publicize it. We’re really happy with the amount of use it’s getting so far, and it’s getting a lot of positive Twitter chatter.

How difficult was this to launch? Some of this was low-hanging fruit. We have 22 executive branch agencies in Utah, and all of them have some open data that’s available on their own websites. So we’ve been going to these sites and consolidating the information and putting it in a format that’s reusable. We make it available for download in seven or eight formats. The tools allow us to create an API that updates the data automatically. But getting all of those in place is probably the more challenging part. We also have some cities involved. Salt Lake City is already on there. Other cities like Logan and Provo are expressing interest.

How will open data in Utah evolve? I’d like to take data that’s not traditionally seen as open data, cleanse it of private and personal information and make that available as well. A good example is unemployment insurance data or Medicaid data. If we cleanse it of names and Social Security numbers, then we can publish that data. The Socrata tools let you make charts or maps with the data. We have legislators who want to do this for their districts. So we’re working to let them map or chart this out by legislative district, or by ZIP code or county.

— Steve Towns, Editor
COMING IN APRIL

GOVERNMENT TECHNOLOGY'S 2015

TOP 25

DOERS DREAMERS & DRIVERS

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The information is out there somewhere. Now can we find it and use it?

OPEN DATA’S NEXT MOVE

By Colin Wood
Data is nothing and everything at once. Any data point a person can think of is either an arbitrary label fabricated to make a complex world more intelligible, or an imperfect measurement or characterization of some physical world phenomena. But people cling to information as if it were the only thing keeping them from being sucked into outer space, because there really is nothing else to rely on. Every decision every person has ever made has been based on some kind of data, whether something as nebulous as one’s feelings at a given moment or as concrete as cell D18 in a spreadsheet.

People will never stop searching for more information, more things to measure and catalog, and when they run out of things in the external world, nervous systems will be monitored and analyzed live, cross-indexed with environmental data to map the probability of future events, showing that brain-states and biochemistry aren’t actually as nebulous as they once seemed. A steady flow of reliable and easily accessible data will radically transform how people behave and what civilizations look like.

Open data isn’t just a budget line-item—it’s one tentacle of a self-organizing cephalopod that humankind will pilot out of the ocean and beyond Earth’s crust to new civilizations.

But before man can traverse the galaxy inside a laser-eyed tentacled beast, he must first learn to crawl. All the information in the universe already exists—it just needs to be collected, tools created to make sense of it, and mechanisms developed for distribution and consumption. And mankind today has more pressing concerns, besides. A married couple who wants to send their daughter to the best possible elementary school today might consist of listening to anecdotes from neighbors and friends, finding a couple data points online like average test scores and graduation rates, and then making a gut decision.

Choosing a school today might consist of finding a school where most students pass the state math test or can read at their grade level. But there’s a lot missing. There’s missing data, missing tools, missing organizations, missing technology, missing governance and legislation. Open data is frequently referred to as a “movement,” not because it sounds good, but because a widespread and organized adoption of data transparency really would change everything.

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The U.S. Open Data Institute (USODI) is a nonprofit that collaborates with federal, state and local government agencies to meet a future of widespread data transparency. The organization’s goal, USODI Director Waldo Jaquith said, is to make the term “open data” sound as dated as “horseless carriage.” It wants the world to take data’s openness for granted, but today’s tens of thousands of municipal and special-use government data silos far from resemble that future. “Everything is a barrier,” Jaquith said. “There are no more than a few dozen people in the entire country who work in government who have the phrase ‘open data’ in their job title or job description.

Open data is improving by leaps and bounds. Jaquith said, but there’s tremendous inertia. It’s simply easier not to do something, especially if that something is opening data. But promises of a glittering future can be gleaned from today’s data landscape.

So if they work on improving the state of open data, best case they get a clap on the back and a hearty handshake. Worst case they get fired because they accidentally opened some data they shouldn’t have.”

An open data future is one in which new information is available for decision-making, but also one in which transformative ideas are made possible. With a standardized open data platform designed for use with the nation’s legislative body, for example, today’s 535-member Congress could be expanded to 50,000 members, Jaquith suggested. Improvement in the data world could beget an evolutionary leap in democracy.

“If you wanted to adapt the House to have much smaller districts, well, you can do that,” he said. “Anybody can file a request to propose changing existing laws and that becomes legislation that is then passed in an electronic vote, which is recorded on an open basis and the law changes and is easily amended and everybody gets a copy of it. All sorts of exciting things like that are possible if we just get to the point where we use common standard schemas for the storage and transmission of government data.”

Open data is improving by leaps and bounds. Jaquith said, but there’s tremendous inertia. It’s simply easier not to do something, especially if that something is opening data. But promises of a glittering future can be gleaned from today’s data landscape. A recent analysis conducted by USODI illustrates the power of unlocking data. The institute compared corporation registration records held by Virginia with the records held by the city of Charlottesville, Va. The group said the city had no idea that one-third of its corporations even existed, representing hundreds of millions in lost tax revenue. If one metric in one city could save hundreds of millions, then the lethargy surrounding open data is at least a little confusing. There are more benefits to be unearthed from open data, but many of them remain unknown because most people don’t even know what data sets government is collecting in the first place, said Stefaan Verhulst, co-founder and chief research.
and development officer of the Governance Lab (GovLab) at New York University. The GovLab attempts to build better governance and education around the data ecology. In other words, when government officials ask questions like, “Why is open data worthy of my resources?” Verhulst tries to supply a scientific answer.

The GovLab looks at which government data sets are being released, who is using them and what the impact is — and then it feeds that information back into the ecosystem to encourage more open data development. Last year, the organization launched the Open Data 500, a project that examined how (mostly small and medium-sized) corporations are using government data to build revenue.

“The next stage is to deepen that and to start understanding other linkages across these corporations, what is the broad economic impact, what is the social impact and a variety of other questions that are yet to be answered as it relates to the impact of open data on the economy and on society,” said Verhulst. “They need to see the value proposition.”

A dearth of mechanisms that process and deliver data to people is among the biggest gaps between today and the future. If there’s a need for government to open more data, there’s an even bigger need for someone to design tools that make sense of the data that’s out there. The GovLab hopes, Verhulst said, that by measuring today’s open data efforts, it can encourage the opening of more data and the creation of more tools, not just in government, but in the private and scientific spheres too.

The narrative of futuristic technology has forever been centered around ease of use. Just press a button and the computer will do all the work — amazing! But there’s a lot of work to be done. There are online health data portals in more than a dozen states, for example, under the MONAHRQ program led by the U.S. Department of Health and Human Services, that supply performance data on dozens of metrics that could be crucial to a patient’s decision-making process. But most people don’t know the portals exist, so when they’re searching for a doctor or medical facility, they’re unlikely to go 40 clicks deep into an obscure portal and then conduct their own data analysis. If a Google or Siri doesn’t present information to people directly, it may as well not exist.

If today’s fractured data standards were applied to the physical world, it would be chaos. Carpenters would need 4,000 screwdrivers to fit all the different screw heads, every neighborhood would speak a different language, and every third traffic light would use a different color scheme. The future of technology lies in the unification of standards and the connection of services, said Dustin Haisler, chief innovation officer of e.Republic, Government Technology’s parent company.

An open data future is one in which new information is available for decision-making, but also one in which transformative ideas are made possible.

“Today we crowdsource certain components of business processes like finding through Kickstarter and problems through SeeClickFix, but the real potential is being able to link those intelligently together,” Haisler said. “We assume that an API is sufficient for interoperability and that’s a flawed model. What we really need are ontologies, standards and people to create frameworks for how information is stored.”

The standards problem is further compounded by financial troubles. The same question about how open data is or isn’t financially viable for an organization also impedes progress. When companies like Apple or Google pursue new ventures that rely on an open exchange of information, like HealthKit and Google Fit, the proprietary platforms that are intended to drive revenue ultimately cripple the products themselves and consequently the entire data ecosystem.

“Maybe open data is not something you monetize right off the bat,” Haisler said. “Maybe the business models have to completely flip upside down with open data. When the Internet was created, they didn’t charge for it. It was a platform that other business models are built on top of.”

Anyone who doesn’t see the depth of potential in open data can’t be blamed for it. The current data landscape isn’t a garden ripe for picking. Most of the companies in the Open Data 500, a list of open data firms compiled by the GovLab, have niche applications, and about 25 percent of those companies are now defunct, said Haisler.

That 500 clever applications are even necessary is an indication of the problem. For open data to succeed, the environment must be such that one good application is all anyone would need.

The early days of open data are over and people want to know what’s next, said Daniel Castro, director of the Center for Data Innovation and senior analyst at Washington, D.C., think tank Information Technology and Innovation Foundation. People want to know if open data can drive local economic development and innovation, whether there’s a business case for open data, and the answer is yes, said Castro, who also writes a column for Government Technology.

Open data can drive economic development, it can drive innovation and there can be a business case. The question is no longer if open data can work, but how it will work. Open data has always been driven by the technologist’s office, but the potential influence of open data begs a cultural change that would place the technology in everyone’s hands, Castro said — both in and out of the organization. The future of the young girl whose family won’t have health insurance when she needs it is an indication of the potential. That potential in open data can’t be blamed for it. The current data landscape isn’t a garden ripe for picking.

Anyone who doesn’t see the depth of potential in open data can’t be blamed for it. The current data landscape isn’t a garden ripe for picking.
SMALL, MEDIUM AND LARGE CITIES SHARE HOW OPEN DATA EFFORTS ARE EVOLVING IN THEIR COMMUNITIES.

BY PAMELA MARTINEAU
Asheville, N.C., CIO Jonathan Feldman says open data has fueled a variety of local hackathons.
pen the data and the citizen
miners will come — and
they just might develop an
app, map or other inno-
vative product not yet envisioned by
busy local government officials.
That’s been the experience of many
local governments as they place more data
online for public consumption. Initially
open data initiatives grew out of a desire
to increase government transparency and
reduce staff time in processing public
information requests. For the most part,
the initiatives are achieving those goals.
But a growing number of entrepreneurial
residents — in addition to creative local
government staff — are using the data to
develop products that help citizens access
services and interact with public agencies.
Local governments are even sponsoring
hackathons as a way to entice residents
to develop new apps from the data.
Examples of citizen-inspired entre-
preneurial projects include an app that
uses live data from city parking lots in
Ann Arbor, Mich., to let people know
in real time how many spaces are avail-
able in each lot and a community devel-
oped map of Kansas City, Mo., that
keeps neighborhood groups from
duplicating their funding requests.
Local government staff also are using
data in creative ways. For instance, Denver
debuted the pocketgov city services app
in January. The app gives citizens access
to various data as well as the sched-
ules for street cleaning, recycling and
other services. Citizens can opt in to
receive notification via email or text
that a service is coming to their block.
“What we’re attempting in Denver with
pocketgov is to create a dynamic applica-
tion platform that will engage our citi-
zens and developers to more effec-
tively interact with the data,” explained Frank
Daidone, chief information officer for
the city and county of Denver. “The next
phase for open data will be analyzing the
interactions with the data allowing us to
more intelligently focus our resources and
taxpayer dollars in areas of greatest need.”
Just a few years ago, open data initia-
tives consisted of a few data sets being
posted to a government website. Now
the initiatives have evolved into new
ways of engaging citizens and providing
more efficient services. Local govern-
ments today routinely post a wider range
of data sets to their sites and ask residents
what kind of data they want to see.
And while direct economic benefi ts
from open data initiatives can be diffi-
cult to trace, most agree that they hold
intrinsic civic value for a community.
“Understand that open data is good
for everyone, not just citizens, not
just businesses, not just for journal-
ists, but for city staff, city managers
and city council members,” said Ashe-
villle, N.C., CIO Jonathan Feldman.

SETTLING ON STANDARDS

HOW DO CITIES MAKE SURE THEIR DATA IS USABLE?
In KANSAS CITY, MO., staff members provide
data in a format that is
easily downloadable,
searchable and reusable
by commonly used appli-
cations. Open, machine-
readable formats are the
industry standard, and
cities say getting existing
data into usable shape (and keeping it up-to-date) is the
hard part.
DENVER uses industry standard
data formats CSV and PDF. Other
standards used by
the city come from
the White House
and the Open Data
Foundation.
PASADENA uses
open data standards
imposed by widely used
data hosting services,
like Junar and Socrata.
Pasadena leaders have
encouraged both compa-
nies to create a stan-
dards body to help other
cities release data
that will spur product
development oppor-
tunities for applica-
tion developers.

Data on ANN
ARBOR, MICH.’S
financial site,
A2OpenBook,
downloads as CSV,
an industry standard
for data exchange.
The city Data Catalog
follows industry
standards as well —
KML and shape files
for GIS layers and
CSV for data,
for example.

GIS data sets in
ASHEVILLE, N.C., are
delivered via an ETL
(extract, transform, load)
program in multiple
common formats
like shape files, KML,
KMZ and GeoJSON.
Other business data is
presented using CSV.
Like many other jurisdictions, Denver’s open data initiative began as an employee-driven effort to get information out to the public in order to be more transparent and save staff time spent processing requests for information. While agencies are encouraged to contribute data to the Open Data Catalog (ODC), it needs to meet basic standards and contain metadata to ensure it is usable, city staff told Government Technology. The data evaluation step is currently being built directly into the project management intake process.

Most Denver agencies are responsible for providing their data sets, except for crime and financial information, which are extracted directly from departmental applications. And the information is being put to good use: Researchers have used data from the ODC to develop a metric to predict when market rate affordable housing will be demolished or remodeled based on factors like increases in land value and declining building value. In addition, as part of a community health grant, local students have used Denver’s data to look at access to physical activity in certain census tracts.

A 2012 hackathon brought the Kansas City, Mo., IT Division and the Public Works Department together to create the city’s open data initiative. The parking garage data they released led to an award-winning app and the formal introduction of the initiative to city leaders. The city’s open data portal, https://data.kcmo.org, was launched the following January.
Portal contents in Kansas City are driven by information requests and votes that come in from a crowdsourced engagement site (www.allourideas.org/kcmo) that solicits ideas from the public. “If you post data to your portal, but it isn’t being used, it’s of no value,” said Kansas City, Mo., Open Data Coordinator Kimberly Mesa.

Engaged citizens have a vested interest in knowing precisely how government manages public dollars. A hallmark of transparent governments focused on building the public’s trust in recent years are open checkbook-style sites that slice and dice government revenue and spending in a variety of ways. According to the U.S. Public Interest Research Group, 2013 was the first year in which all 50 states published some kind of spending data online. Local governments are moving in this direction too.

Ann Arbor, Mich., has a variety of static data sets available for download on its Data Catalog website, like city amenities, crime data and permits under review. But A2OpenBook offers an interactive experience that allows users to drill down into specific financial data sets. Ann Arbor reports that for A2OpenBook, the most often used data set is Expenses by Service Area, followed closely by Vendor Payments. The update process for A2OpenBook is fully automated, although the Finance Department also contributes data manually to the city’s Data Catalog in PDF form. Ann Arbor IT Director Tom Shewchuk recommends that cities avoid manual entry of data sets whenever possible.

“The best piece of advice I can offer is to make sure the data can be presented via a systematic approach versus by hand,” said Shewchuk. “This ensures the timeliness, consistency and accuracy of the data.”

Beyond the strides in transparency resulting from open data efforts, Ann Arbor offers another kind of data — infrared photos — to help citizens better understand their stormwater utility bills. The more impervious surface a parcel has, the greater the run off into the stormwater system, and therefore the higher the property owner’s stormwater utility rates.

The city used a flyover with infrared and other technology to capture images of each parcel’s impervious surface. Including this data in stormwater bills improved customer understanding and service, Shewchuk said.

In Asheville, N.C., the 2-year-old open data initiative is driven by a framework of the 3 P’s, according to Feldman, which are “pragmatics, policy and participation.”

“If something is useful to staff to make into open data, we do it,” Feldman explained. “If policymakers want to see it published, same. If we get a lot of citizen input that citizens want to see a data set published, we do it.”

Asheville’s online catalog has powered civic hackathons like ReRoute AVL, which built projects around multimodal transportation, a business-focused Open Data Day, as well as Hack for Food, a 2013 event held in conjunction with the National Day of Civic Hacking, aimed at tackling local food insecurity.

Open data advocates frequently cite the possibility of government data driving local jobs, but in the movement’s early stages, concrete examples can be hard to come by. In Asheville, however, BuildFax was built on selling business intelligence derived from open building permit data to insurance companies. The company employs more than 30 people, according to Feldman. There is also a successful map business in town (http://bestlocalmap.com) that was able to improve upon existing tourist maps by adding information gleaned from open data.

Dublin, Ohio, GIS Administrator Brandon Brown said the city of less than 45,000 is in the very early stages of its open data initiative. The effort has been driven internally by administrative staff. A small project team has begun researching philosophies, policies and technologies to aid in the creation of the city’s overall strategy and policy. Even though the initiative has not been driven by the public, Brown reports that the city has engaged the public and local business leaders in discussions regarding the type of data they would like to access. Officials add, however, that they have been practicing various organically grown versions of open data for many years. For instance, its GIS group has long had a data download portal, and has recently transitioned to Kisi’s Open Data platform.

Other examples include access to automobile crash report data, crime data and information on building permits.
Q&A: Why Now is the Time to Make Government More Mobile, Personalized and Engaging

People today are immersed in a consumer-centric world that is increasingly personalized and mobile — getting what they want in the manner they prefer, customized to their needs. This is raising their expectations for how accessible and easy transactions should be across all industries — even government. In this Q&A, Contact Solution’s Senior Vice President of Marketing and Product Management Michael McShea discusses why it’s critical — and how it can even be cost-effective and simple — for government to provide more mobile, personalized and engaging ways for citizens to access services.

MICHAEL McSHEA
Senior Vice President of Marketing and Product Management, Contact Solutions

Q: How are consumer trends impacting government?

MICHAEL McSHEA: One thing that stands out from experiencing consumer trends evolve for over 10 years is that we are now in the “age of the customer.” Consumers are on equal footing with sellers and service providers due to the information they access via the Internet. This has raised consumer expectations to have more control and convenience in their transactions. Consumers are also leading a more mobile lifestyle. They have smartphones within reach 24/7 and want to complete transactions at any time and from anywhere. These are the overarching consumer trends that have been driving contact center technology programs for commercial enterprises for some time. Because of this, they expect the same when they interact with government.

Q: How is the mobile mind shift transforming how government agencies serve their constituents?

MICHAEL McSHEA: As government contact centers evolve, investments are made in improved ways to interact and communicate with citizens, such as self-service, mobile and social media. However, it is difficult to integrate these various methods of communications to gain a holistic picture of citizens’ wants and needs. It can be expensive to solve this problem from the inside-out, for instance, by integrating or upgrading legacy systems with the focus on organizational needs versus the needs of the citizen. The real opportunity is to look from the outside-in and leverage what citizens expect and already have access to and are comfortable with — personalized experiences from their smartphones. This is a much lower-cost method because if citizens can accomplish something in seconds via a customer service app where they can self-serve or quickly message with an agent at their own convenience, or resolve an issue seamlessly through a personalized phone self-service option, it prevents them from having to go into an office or wait on hold to speak to an agent. This improves the experience for citizens, boosts agent productivity and lowers operational costs — a real win-win.

Q: What are three key success factors agencies should consider as they move to mobile and personalized constituent engagement?

MICHAEL McSHEA: The first thing worth stressing again is the importance of taking an outside-in approach. There is a tendency in the contact center world to solve problems from inside the contact center, which can become very costly and miss the mark on providing the best and easiest level of care. If you just flip that around and solve the problem by leveraging citizens who have access to a smartphone, it turns out to be a much more cost-effective and rapid solution. The second key thing is to utilize data and cloud-based hosted technologies to be more nimble in delivering and evolving citizen services. Cloud-based technology will help you take some immediate small steps in offering more mobile services to citizens. It also gives governments more control over data privacy issues since highly secure hosted platforms keep the data off the phone and safe without the worry of security and continuity issues. Additionally, as you enhance your customer engagement model, you will be collecting valuable interaction data from your citizens about what they are trying to accomplish and their preferred method of accessing services. You should utilize that data to continuously evolve your mobile and personalization capabilities to work on your and your constituents’ behalf, something that should be top-of-mind for your hosted provider. The last point is to focus on self-service over time. Citizens manage busy lives and want to solve problems on their own time, so continue to offer them tools to do so and it will drive operational efficiency.

Q: How can Contact Solutions help?

MICHAEL McSHEA: Contact Solutions’ current portfolio supports 42 states, as well as local governments and federal programs. We help provide personalized and engaging interactions so governments can offer services that meet citizen expectations. With over 10 years of driving self-service in our IVR platform and leveraging business intelligence through comprehensive customer interaction data, we learned the more you personalize and mobilize the interaction, the more benefit you receive — including higher automation and a better user experience. Our goal is to help governments improve the citizen experience and to do so with limited resources. We truly believe mobile-first citizen engagement will be the ticket to governments fulfilling their missions of providing citizen services while staying sustainable far into the future.

To learn how to make your programs more mobile and personalized, visit www.contactsolutions.com or email information@contactsolutions.com

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WE TALK TO CHIEF DATA OFFICERS ABOUT HOW THEY ARE SHAPING ONE OF THE NEWEST POSITIONS IN STATE AND LOCAL GOVERNMENT.
Data is the watchword, the new tool by which governance can be managed. Crunch enough numbers hard enough, the logic goes, and you'll get something meaningful, something that can guide civic efforts in diverse arenas. Who will gather, sort and crunch those numbers? Increasingly it is the chief data officer (CDO), a rising class of officials with an often broad mandate to convert data into actionable intelligence. Such a position has its advocates. “To achieve maximum benefit, all enterprise-class activities — including data warehousing, business intelligence, master data management, customer relationship management, data governance, data quality improvement initiatives, enterprise architecture and so on — should be led by a new chief officer whose primary responsibility is the standardization and management of data assets in the organization,” said Larissa T. Moss, senior consultant at the IT consultancy Cutter Consortium. “This new position is the chief data officer.”

That's a mouthful — one that the corporate world at least seems ready to swallow. Gartner predicted that by this year, 25 percent of large global organizations will have appointed CDOs. Research Vice President Debra Logan said there are more than 100 CDOs serving in large organizations today, more than double the 2012 number.

The public sector is following close behind. In 2010, Colorado became the first state to appoint a chief data officer. A year later, New York City established the position in local government. The U.S. Army has a CDO as do such major cities as San Francisco, Chicago, Philadelphia and Baltimore. With the CDO’s role poised to become the new norm in U.S. government, this is an appropriate time to step back and ask some basic questions: Who will fill that role? What will he or she do? What challenges will he or she meet? Should there even be a CDO at all?

Some think not. Take, for instance, Forrester Research Principal Analyst Jennifer Belissent, who blogs that the CDO may be redundant in the shadow of a good CIO. “The role of the CIO is not just about keeping the proverbial ‘lights on.’ It’s about achieving business outcomes — achieving those goals of engagement and access, of improving operational efficiency and policymaking, and of enabling innovation and facilitating economic growth,” she said. “If a CIO is truly empowered to guide the use of technology and not just its maintenance, the organization likely doesn’t need another chief.”

Against a backdrop characterized by urgency on the one hand and uncertainty on the other, we talked to four prominent CDOs about the work they do and the meaning of their jobs in the overall structure of civic governance.

Barbara Cohn: In New York, an open data handbook helps agencies prioritize meaningful data sets.
BEFORE TAKING ON HER present role as state CDO in 2012, Barbara Cohn earned her chops in Michael Bloomberg’s administration in New York City. Working in the Office of the Deputy Mayor for Health and Human Services, she pushed for intergovernmental data sharing and learned an important lesson that serves her well today. “One of the most important things I learned is that it can be done,” she said. In the world of HHS, “it” meant pulling together case information from across government, giving a caseworker the ability to see into a family’s history anywhere it had touched the system. How to bash down those long-standing walls? Solid systems. “We have a very strong governance process. There was an executive order from the mayor, there was strong leadership, there was structure, there were processes in place and standards that had to be met, and there were very clear objectives,” she said. “It was all done in a very methodical way. It wasn’t arbitrary or capricious.”

Cohn brings that same sensibility to her present role, where it is her job to foster exchange and interoperability across government. She works to harmonize core data elements, create standards, enhance data quality and facilitate the governance structure that makes sharing possible. For the past year, her office has been engaged in a successful open data initiative: There has been a fourfold increase in data catalog items from 54 participating state agencies. In addition to data points, the team has crafted diverse charts and graphs to make all this information more easily digestible. “We are very cognizant of the end users and want to provide maximum understanding,” Cohn said.

To formalize the process, in November 2013 Cohn oversaw publication of an open data handbook, a set of guidelines to help all agencies identify meaningful information and prioritize data sets. “Data is new to agencies,” she said. “With the explosion of data, people are just awash in it and this is a pointer, a road map. It has really gotten the agencies excited and enthusiastic.”

Cohn reports directly to the CIO, putting her at a high level in the organizational chart — high enough that she needs to have at least a passing familiarity with the workings of every agency. But she doesn’t need to know it all. In order to make the data move, “you don’t need to be an expert in everyone’s field. You do need to know what their business objectives are, and once you are clear on those business objectives, it becomes clearer what the value proposition is here,” Cohn said. “It comes from being constantly in communication with all the different agencies. I have spoken to countless agencies through the open data initiative and we have created many strong relationships.”

THERE ARE MANY WAYS of looking at data and its function in government. With hard numbers in hand, government can make sound policy decisions. Data can help officials to target resources. Ali Farahani is thinking about how data gets used, but he’s starting the journey by asking how it will be accessed. In the past, data was collected and disseminated on a “specific transaction model,” with various government functions holding their information close to home: Hospital data went to hospitals, HR to HR and so on. “I want to change that dynamic,” Farahani said. “I want to promote a model where we look at data as a service. The purpose would be to make it available to all consumers of data, to make it more readable, in a standard format, almost as a plug-in so that any consumer of data in the county can access data without worrying about what platform it is in, without worrying about building bridges to access that data.”

The county is a long way from that today, with information still in silos across the enterprise. Farahani’s current mission is to put in place an enterprise information management working group, a cross-cultural body that can lay down rules for moving data across divisional lines. “You can’t just knock on someone’s door and ask for data,” he said.
“You need a governing process so that the sharing of data is accepted as part of the enterprise management process.”

At the same time, Farahani is running a parallel offensive: That is, the effort to build a data culture in government, a mindset wherein the information that percolates up across agencies ultimately drives smart choices. “I am trying to promote a culture of data-driven decision-making in our county government, to actually have programs and policies that use data as a driver of good public policy,” he said.

To do this, he is talking to department CIOs, encouraging them to connect with their business executives in order to begin seeing the link between policy goals and available data. “There is a lot of value in reaching out to the CIOs,” Farahani said. “Once you start talking to them about the tangible value of analytics, then they want to have data, they want to have a dashboard.”

What about Forrester’s Belisarius and her assertion that the CDO may be redundant to the CIO?

Farahani sees a clear necessity. “The CIO’s job is nowadays so big and comprehensive, it becomes a matter of having someone who can focus on just this particular area,” he said. While the CIO must tackle the technology needs of a county with a $26 billion budget, the CDO looks at a much narrower band. “We rely so much on data, we have become so dependent on our data in the last 20 years; it has become the centerpiece of all business processes. So now we need to focus on that asset.”

**TYLER KLEYKAMP**

*Connecticut Chief Data Officer*

TYLER KLEYKAMP CAME TO his job in February 2014 after a stint as GIS coordinator in the state’s Office of Policy and Management. His technology skills are largely self-taught, picked up along the way as he worked on GIS databases. Nonetheless, data seemed a natural transition. “It was part of the work that I had always done,” he said. “Working with GIS, I was doing all sorts of analysis: weather, land use, conservation and development. So I was already a data chaser, someone who went agency to agency looking for data in order to do some type of analytical work.”

As an office of one, Kleykamp still reaches out to multiple partners, collating data from throughout state government and pulling it into the Office of Policy and Management. The job grew out of a gubernatorial call for an open data portal, and that has been Kleykamp’s top priority, to convene multiple agencies and see what they could do to make their data more publicly accessible.

That executive order has been a boon to his efforts. Agencies are required to provide a management-level liaison who will be ready and able to work with the CDO on matters related to data sharing. “That means we have someone in that agency we can go to when we are looking for something, when we are trying to open something up,” Kleykamp said. “So it is not just a shot in the dark at the agency.”

As Kleykamp reaches out from the state level to the civic strata, things get a little more complicated. The state has no counties, just 169 municipalities, each keeping its own records. There are regional councils to help pull it all together, “but it’s still a learning process for me to understand where some of this stuff is, how it looks, who can access it,” he said. “Those are the big challenges we are working through now.”

**BARBARA COHN**

*Chief Data Officer*

BARBARA COHN said. “In order to have data become public facing, you want to ensure it is in certain formats, that it is legible. There is cleaning, there is prep work that needs to take place to make it usable.” Usable data will be the hallmark of a successful effort statewide and within each agency.

**MEASURABLE RESULTS**

The role of chief data officer is still new enough in civic life that it is worth asking: What counts as a win? Here are the metrics CDOs told us they are using to measure their success.

**ALI FARAHANI**

Mission No. 1 is to pare down the bloat, carving away at the excesses of existing data warehouses. “Let’s inventory all our data assets and look at the systems where we store all this data, and then ask ourselves: Can we eliminate redundancy in trying to store the same data in multiple places?”

**TYLER KLEYKAMP**

It will be hard to know the value of open data on the public side, so Kleykamp is asking end users to submit their success stories. Internal metrics should be easier. “I think as we mature across state government in terms of our use of data, we’ll begin to see measurable outcomes, whether they be cost savings, time savings or impact from policy change.”

**MISSION NO. 1**: To pare down the bloat, carving away at the excesses of existing data warehouses.

What about Forrester’s Belisarius and her assertion that the CDO may be redundant to the CIO? The role of chief data officer is still new enough in civic life that it is worth asking: What counts as a win? Here are the metrics CDOs told us they are using to measure their success.
As he feels his way along, in much the same way as other CDOs, Kleykamp is careful to set realistic expectations. People often liken data sharing to the watershed moment when the federal government opened up GPS data to the public. Everything changes. But he doesn’t see it that way. “I don’t think that is what we are looking at, at the state level,” Kleykamp said. “We have an opportunity to leverage this data to make better decisions. That may save us money down the road or we may have better outcomes. This will have a positive impact on the way we do business as a government, but it is going to be a period of slow, incremental change.”

When he took on the CDO role last summer, it seemed like a natural evolution. “I was hooked on building applications that would connect citizens to government, but I kept finding myself looking for data,” said Wisniewski. He has since found more than he bargained for. “We have a lot of systems that have developed over the decades, but they are not necessarily compatible or in the same format. We have things on the mainframe, on Oracle databases, on SQL Server databases. There is not one tool that gives us access to all this data.”

A simple example: When the city wants to contract for a commodity, the contracts reside in one system and the product descriptions in another. Try to merge that data, “and it is all a huge ordeal.”

The remedy begins with knowing what is out there. Wisniewski has asked for data inventories in various departments. An open data team will then measure demand for that information internally and externally, based on input from an advisory group made up of community members, the media and academia, among others. “Then we can tell a department, here’s exactly what the public wants,” Wisniewski said. “We want to be less anecdotal about it and more deliberate, more methodical.” Wisniewski answers directly to the CIO and oversees a range of teams covering open data, civic technology, creative services and application services—a total of 16 people. So far, these teams have been met with positive energy from throughout government. “I have had conversations with folks at various levels and people generally get it,” Wisniewski said. “They do understand the value of these kinds of things.”

Wisniewski is measuring success by his own ability to prioritize on behalf of city departments. He wants to create a 1-to-5 scale to show managers just which aspects of their data are most in demand. First he needs that inventory, though, and that is no small trick when a full picture requires input from 57 different departments. “You can’t just walk up and ask somebody: What data sets do you have?” he said.

As for the suggestion that the CDO may be little more than CIO Lite, Wisniewski said the difference in emphasis creates a fundamental distinction between the roles. “There is a new recognition of the value of data as an asset,” he said. In creating a chief role solely to exploit the value of data, cities and states make a stand about their readiness to open themselves to citizens. “There is a real desire to use data to increase civic engagement. That requires some degree of creativity, it requires engaging with the user and that requires a special degree to focus.”

IT TOOK A CIVIC HACKATHON to help Tim Wisniewski see the possibility for combining his IT hobby with the city’s interests, launching him to become Philadelphia’s director of civic technology, where he managed projects that connect citizens to government, like the Philly311 mobile app and myPhillyRising.com.
GETTING SMART ABOUT TRANSIT
When it comes to public transit, the city of Portland, Ore., stands out. Despite having a metro population ranked 24th in the country, the city has the 11th largest transit system, when measured by passenger trips. Besides bus service, the city has, over the years, invested in an extensive light rail system, a downtown streetcar line as well as commuter rail. And growth continues. In September, Tri-County Metropolitan Transportation District of Oregon (TriMet), the regional transit agency, will open a 7.3-mile extension of its light rail system. Add it all up and Portland has a robust transit network that is the envy of many American cities.

Portland’s transit system gets a lot of national attention partly because of its investments in different forms of transportation, which are well integrated. It also gets high marks for how it uses technology. The agency was an early leader in the use of smartphone apps for trip planning. It was also one of the first transit agencies in the country to let riders use their smartphones to pay fares. Like a growing number of transit systems, TriMet transmits bus location information in real time. Need another minute to finish that cup of coffee before starting your commute? In Portland, riders can find out on their phone, tablet or computer when the next bus will arrive at their stop within a five-minute window.

While transit agencies always have used technology, most of the focus and spending has been directed toward infrastructure—the buses, trains and rails—as well as significant labor costs. Information technology has played a relatively quiet role as a tool rather than as an overall strategy. But that thinking is beginning to change as mobile computing, social media, GPS, data analytics—as well as other forms of automation—have opened up new ways to improve service and, hopefully, attract more riders.

Transit agencies are using advances in technology in three broad areas. First, there are technology solutions that are meant to make transit appealing to a broad ridership, not just the traditional users who are typically low income or don’t have a car. This is what Terry C. Bills, global transportation industry manager of Esri, calls the Madison Avenue approach, where transit agencies use data and cool technology to market transit so that it appeals to urban professionals and to better understand their needs. “For new urban riders, what’s important is that transit service is on time, clean and fast,” he said.

Second, agencies are increasing the use of intelligent systems to streamline and improve fare collection, scheduling and routing of transit services. Agencies can track not just where their buses and trains are in real time, but they can also know exactly how many people are riding a particular vehicle at a particular time. When this information is put into a database and analyzed, transit officials

About This Report

The Digital Communities Special Report, which appears quarterly in Government Technology magazine, offers in-depth coverage for local government leaders and technology professionals. It is part of the Digital Communities program, a network of public- and private-sector IT professionals working to improve local governments’ delivery of public service through the use of digital technology. The program—a partnership between Government Technology and e.Republic’s Center for Digital Government—consists of task forces that meet online and in person to exchange information on important issues facing local government leaders and technologists.

Look for Digital Communities quarterly reports in Government Technology magazine in March, June, September and December.
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can better predict how many buses are needed on given routes at different times of the day and can control when they arrive at a stop, so fewer are too late or too early. Intelligent transportation systems can help control light rail and subway trains, allowing more on the tracks during rush hour, without risk of an accident.

Third, transit agencies are adopting social media for two-way interaction to increase transparency and accountability, while improving how they monitor transit service. The goal is to keep riders well informed and to also mine social media for ways to improve services. Twitter, Facebook, Instagram and other social media platforms have become essential tools for customer-focused transit agencies.

But the application of new technologies, many of which are not expensive to deploy, is far from uniform across the country’s 7,865 transit agencies. Transit officials will be the first to tell you they are broke and don’t have the funds to spend on high-tech tools. Still, a number of cash-strapped agencies, such as TriMet, continue to adopt new technologies, especially those that have an impact on services. This report will examine some of the leading trends in transit technology, and not only explain what they are and how they work but, more importantly, why they can make a positive change in urban transit.

MOBILITY & ITS

In 2013, Americans took 10.7 billion trips on public transit, the highest number in 57 years, according to the American Public Transportation Association. For decades the demographic profile for the typical transit rider was someone who was low income and often had no other means of transportation. In other words, people who used public transit did so because they had to, not because they wanted to. But since 1995, public transportation ridership has grown 37.2 percent, almost double the amount of the country’s population growth at 20.3 percent, according to APTA. Clearly a new generation of transit riders has stepped forward. Many of them are so-called “choice riders” who have other options to get around besides buses and trains, but prefer using public transit. To keep these choice riders coming back, experts say that transit agencies must offer a ride that is reliable, fast and clean. They also want convenience.

THE APPLICATION OF NEW TECHNOLOGIES IS FAR FROM UNIFORM ACROSS THE COUNTRY’S 7,865 TRANSPORTATION AGENCIES.

One way that transit agencies can make the daily commute convenient for riders is with mobile ticketing. With approximately 91 percent of adults using a cell phone, according to Pew Research, the push to collect fares via an app on a mobile phone is extremely appealing to transit agencies. Not only does the technology make it easy for people to purchase rides, but mobile ticketing also lowers the cost of fare collection because riders pay for the fare equipment — the mobile phone — not the agency. In a 2013 Accenture survey of transit riders in nine major cities, more than half of respondents said they would be willing to pay more per ride for tech enhancements like paperless ticketing, and 75 percent said travel would be easier with electronic ticketing. In 2013, Dallas Area Rapid Transit launched one of the first mobile phone fare collection systems in the country. Technology for the system was developed by the Danish...
Public transit data is growing exponentially as agencies expand the use of automation to collect information that can improve transit service for both riders and for operations. The problem is that not all agencies are equipped and trained to analyze and use the data to improve performance.

One obvious solution is to publish the data so that third-party developers can make use of it for public consumption. More than 200 transit agencies worldwide are publishing their schedules, fares and station locations to Google’s TransitDataFeed in a common data standard and for free, according to Stephen Goldsmith, the former mayor of Indianapolis and professor at Harvard’s Kennedy School of Government (and also a Government Technology columnist). In the United States, a growing number of city transit agencies have set up developer portals and created application programming interfaces to give the public and programmers the ability to create tools and apps that help riders plan trips, receive accurate arrival times for buses and trains, and learn about service updates.

One of the first transit agencies to release its data to the public was Portland’s TriMet, which launched the practice in 2005. Since then, the agency has expanded the number of published data sets and has met with developers several times to explore new types of transit applications. Other open data portal leaders include: Chicago Transit Authority; San Francisco’s Bay Area Rapid Transit; the Metropolitan Transit Authority in New York City; Massachusetts Bay Transit Authority; and the Washington Metropolitan Area Transit Authority.

Some members of the American Public Transportation Association believe that open data has triggered more innovation in public transit than any other factor in the last three decades, according to Goldsmith. But open data has its drawbacks. The quality of the tools and applications can diminish considerably if the data isn’t clean, isn’t updated on a timely basis or isn’t available in standardized formats.

Firm Unwire, which has extensive experience with mobile ticketing in Europe. In the same year, TriMet also unveiled the first mobile ticket for use on both buses and trains. A year later, the agency sold nearly 1 million mobile tickets, surpassing expectations. “Our mobile ticketing app has been an overwhelming success, quickly surpassing our expectations,” said TriMet General Manager Neil McFarlane in a release.

Prior to launching the service, TriMet knew that 50 percent of its riders had a smartphone; today the number is closer to 60 percent, according to Chris Tucker, TriMet’s director of revenue operations. Mobile ticketing allows riders to buy tickets anytime, anywhere. “We’re seeing a big shift in how riders purchase fare tickets,” said Tucker. “Fewer are heading to retail stores or a ticket vending machine to buy their ticket.”

The current version of the mobile ticketing system is a stand-alone system that operates in conjunction with the agency’s legacy fare collection system. But TriMet is developing a new, comprehensive fare collection system that, when finished, will allow the agency to get rid of aging and expensive fare collection equipment and reduce the cost of fare collections as a percentage of revenue. Mobile ticketing will be a fully integrated feature. Globetrotter, an Oregon-based mobile payment and ticketing company, is helping TriMet develop the digital fare system.

Not surprisingly, other agencies are moving in this direction. Long Island Rail Road, the nation’s largest commuter rail system, expects up to 25 percent of its riders to use its yet-to-be-launched mobile ticketing app within five years. The Massachusetts Bay Transportation Authority rolled out a mobile ticketing service for commuter rail riders in 2012. Both ticketing systems were developed by Masabi, another mobile ticketing software company.
But mobile ticketing isn’t just a convenience for riders. To keep mobile ticketing attractive to riders, and to entice new riders to use TriMet’s transit services, the agency plans to offer a discount system in the form of fare caps, which will allow passengers to ride for free once they’ve used the full value of the fares they have purchased. Tucker compared the fare cap system to a retail gift card, but with discounts built in. “This is going to be exciting for everyone, because it will be much easier to use,” he said. “It really frees up the options riders have as to how they plan their journey.”

INTELLIGENT TRANSIT

Mobile ticketing isn’t the only feature available for riders with smartphones. A growing number of agencies (and third-party providers) offer bus and train arrival time via apps. There are different ways agencies can calculate when a bus arrives at a stop, but the most popular and ubiquitous is automatic vehicle location (AVL) technology. AVL, part of the constellation of intelligent transportation system (ITS) technologies that have been developed in recent decades, consists of two major components: Onboard GPS that tracks the location of each bus in real time and software that displays the location of the buses on a map. The technology has been a boon for commuters who want to know when the next bus or train will arrive. But it also helps transit managers respond to unplanned service disruptions as well as monitor distance between buses and on-time performance.

Some agencies have coupled AVL data with signal prioritization systems to improve scheduling. In Portland, transit officials decided that in order to make public transportation more reliable (and popular), they would concentrate on the on-time performance of buses that served area schools and hospitals — two places where being on time is critical, according to Esri’s Bills. Signal prioritization technology can synchronize, as well as delay, signal changes for traveling buses to keep them on schedule. By linking AVL data with a signal prioritization system, bus schedules become easier to control, reducing the possibility of a bus arriving too early or too late at a stop next to a school or hospital. Another ITS technology that is helping transit agencies improve...
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service, while helping to control costs, is the automated passenger counting (APC) system. Using infrared sensors, APC records the number of passengers who board and deboard a bus at each stop. APCs are far more accurate than the old-time manual checking systems agencies used to deploy.

An APC can help agencies more accurately figure out how many buses they should run on each route, said Chris MacKechnie, a transportation expert and service planner with the Long Beach, Calif., Transit Agency. “The data from APCs can be used to determine schedule adherence and whether bus routes need more or less running time,” he said.

APC and AVL systems aren’t cheap, however. They can cost between $8,000 and $10,000 — each — per bus, according to MacKechnie. While the feds provide grants to fund ITS technology projects, users tend to be the larger transit agencies, he added.

For those agencies with the funds and resources to automate their fare collection, bus and train routing and passenger monitoring capabilities, the next step is to analyze the reams of data generated by these systems, look for patterns and develop new transit services and strategies.

Applying analytics to transit data is a new discipline, according to Wade Rosado, director of analytics at Urban Insights, a subsidiary of Cubic Transportation Systems, a global transportation IT company. “You can’t just use existing databases,” he said. “You have to create a new, integrated database.” Done correctly, models can be generated of how people use bus and rail routes and, more importantly, new routes can be designed that best meet the needs of the customers who use transit, Rosado added.

The San Diego Metropolitan Transit System used Urban Insights to analyze information from its disparate databases to understand ridership patterns. The data is complex, involving point-to-point travel times, transfer points, geospatial demographic information, ridership levels and even results from ridership satisfaction surveys. But the deep dive into data and analytics can pay off handsomely.

Ridership on San Diego’s bus and trolley lines has increased, service has improved, with improvements in on-time performance and reductions in fare subsidies, according to Earl’s Bills, who has followed the work of the San Diego Metropolitan Transit System used Urban Insights to analyze information from its disparate databases to understand ridership patterns. The data is complex, involving point-to-point travel times, transfer points, geospatial demographic information, ridership levels and even results from ridership satisfaction surveys. But the deep dive into data and analytics can pay off handsomely. Ridership on San Diego’s bus and trolley lines has increased, service has improved, with improvements in on-time performance and reductions in fare subsidies, according to Earl’s Bills, who has followed the work done by the transit system.

The field of transit data analysis is so leading edge that most agencies rely on firms like Urban Insights, Cambridge Systematics and a handful of others that have the expertise to mine the various types of data. One of the newer entrants to the field is Urban Engines, a firm launched by Stanford University Professor Balaji Prabhakar and Shiva Shivakumar, a former Google executive. Urban Engines focuses on spatial analysis and behavioral economics to help agencies reduce congestion on transit systems.

To reduce crowding on bus and train lines, Prabhakar said it’s useful to know how, when and where congestion hot spots occur. For example, a bus route may have a hot spot that affects just 20 percent of the route’s length during rush hour. By analyzing APC information and other data sets, agencies can figure out how to deploy more buses that run along just the most congested portion of a route, rather than the entire route. More efficient use of buses not only helps alleviate congestion, but it can also reduce wear and tear on buses that no longer have to run the entire route, just those sections where there are the most riders.

SOCIAL MEDIA & TRANSIT

Traditionally, connecting with riders hasn’t been a top priority for transit agencies. To find out what riders thought of transit service, agencies used periodic surveys to gauge performance, interest in new transit projects and to monitor conditions. But thanks to social media, agencies now have an opportunity to connect with their customers, putting a personal face on what appears to be a faceless bureaucracy. Social media tools and platforms — ranging from Facebook pages and Twitter feeds to Instagram photo sharing, YouTube’s media sharing and Foursquare’s location platforms — have created new avenues through which agencies can engage riders. According to a 2012 report issued by the Transportation Research Board, the reasons transit agencies use social media fall into five broad categories: timely updates, public information, citizen engagement, employee recognition and entertainment.

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SOCIAL MEDIA: STILL A WORK IN PROGRESS

In 2012, the Transportation Research Board surveyed transit agencies about their social media practices. The results were published in the report “Social Media in Public Transportation.” The research identified best practices as well as barriers and concerns about using social media in transit. It also identified gaps in knowledge about social media that needed further study. They included:

SOCIAL MEDIA POLICY. Although industry experts believe having a social media policy is critical, only one in four transit properties participating in the survey had such guidance in place. More research could identify elements of a social media policy that are relevant to public transit agencies.

SOCIAL MEDIA METRICS. Most of the surveyed agencies measured the effectiveness of their social media activities by using built-in metrics, such as counting “friends” or followers, and by using a third-party application such as Google Analytics. While these metrics can give a good overview of activity, they don’t provide the information agencies may need to better understand the effectiveness of their social media activities. Additional research could provide transit agencies with the tools for estimating the costs and benefits of social media, perhaps by including sample metrics or performance indicators drawn from other industries.

INTERNET SECURITY. Industry experts consistently emphasized the vulnerability of social media applications to security threats, including viruses and malware. Additional research could help determine whether social platforms leave transit agencies especially vulnerable to cyber-treats and, if so, recommend appropriate actions.

ACCESS FOR PEOPLE WITH DISABILITIES. Though federal agencies are required to conform to Section 508 accessibility guidelines for their Web applications, some analysts argue that these rules don’t apply to government use of privately owned social media sites like Twitter and Facebook. Additional research could help organizations identify features to improve the accessibility of social media sites and contribute to the debate about how federal accessibility rules apply to social media.

MULTICULTURAL ISSUES. The characteristics of social media users are not yet well documented and questions remain about whether social media platforms can bridge the digital divide, or the perceived gap between people who have access to information technology and those who do not. While not conclusive, research suggests that social media attract users from multiple demographic categories. Further research could provide more data on the demographics of social media users and help determine whether public transportation agencies must take additional actions to ensure that all riders can access online information and social networking sites.

INTEGRATION WITH OTHER AGENCY ACTIVITIES. Despite the growth in mobile applications and traveler and citizen information services, only a few responding agencies reported integrating social media with these programs. Additional research could quantify the potential for better coordinating social media with other platforms for providing agency information.

REVENUE POTENTIAL. Industry experts anticipate growth in several areas, including location-based technology and social-buying services. Additional research could help identify revenue opportunities associated with these applications.

While there’s no definitive list of transit agencies using social media, a 2014 survey by the American Association of State Highway and Transportation Officials of 44 state DOTs found that 98 percent use Twitter, making it the most popular transit-oriented platform; more than three out of four have adopted social media policies; and about 44 percent of DOTs had staff dedicated to social media. Similarly, local transit agencies have embraced social media, and the numbers show it. New Jersey Transit has more than 70,000 Twitter followers and another 46,000 likes on Facebook. Hot topics include customer relations, service alerts and arrival times. San Francisco’s Bay Area Rapid Transit has more than 80,000 followers on Twitter and receives 200 to 800 messages daily. Its social media staff monitor the messages — a train car is too hot, smells funny — and will pass along messages to crews if action is needed. But they also create content for riders, such as a video on “the crowded car survival guide” or information about new features, like a recent replacement of seat and carpeting for its fleet of subway cars. The department aggregates messages from riders that deal with bigger topics and they get elevated to proper management, according to Melissa Gordon, a communications representative with the agency. “We are the canary in the coal mine,” she said.

Keeping management informed about serious issues that bubble up through social media chatter is important. It’s also possible that data from social media can be of strategic value to transit agencies that strive to be more customer-focused. Social media can act as a monitoring tool that can help transit agencies improve how their systems run and even increase trust between passengers and agencies. “Transit providers can use aggregate mobile phone data and social media posts to improve...
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system management,” writes Sarah Kaufman, a digital manager with New York University’s Rudin Center for Transportation and author of the report Co-Monitoring for Transit Management. Kaufman recommends transit agencies develop a “co-monitoring” system that combines staff reports, data analysis and social media to create an improved feedback process, speed up awareness about transit conditions, reduce the cost of infrastructure monitoring, empower riders and improve-customer relations.

But elevating social media from an interactive communications tool to a strategic asset that can make transit agencies more nimble, service-oriented and able to perform better overall, isn’t without some pitfalls. Those drawbacks range from legal concerns over records retention to a lack of resources to train staff on using social tools in more sophisticated ways. Then there’s the issue of dealing with the digital divide between passengers who use social media all the time and others who aren’t digital at all. Also, social media, with its anonymous participation, has been shown to invite excessively critical posts.

THE CASE FOR MORE TRANSIT TECHNOLOGY

America has been and still is a car-oriented society. In the first decade and a half of the 21st century, the share of public transit in urban mobility was less than 2 percent of all passenger miles, according to Jean-Paul Rodrigue, author of The Geography of Transport Systems. Since the 1920s, the use of public transit in urban areas has been in steady, sometimes precipitous, decline. To put it simply, public transit has plenty of room to grow. Fortunately it’s starting to happen.

Beginning in the 1990s, with increases in government funding for public transportation projects, ridership has started rising again, breaking a 57-year record in 2013. And growth should continue for two reasons. First, despite the paucity in federal funding, the U.S. is expected to invest $71 billion in 2015 in new light rail, streetcar, subway, commuter rail and bus rapid transit lines, including new tracks, rail cars, buses and stations, according to Ynabah Freemark, an expert on transit systems. The multi-billion dollar investments will give added capacity to nearly 90 transit systems throughout the country.

Second, as this report has shown, transit agencies are beginning to embrace information technology as a strategy to attract new riders while improving the capacity of existing infrastructure. It starts with convenience. Mobile ticketing is taking off and the quicker transit agencies make the feature available, the better. By giving riders more information about their transit system, especially arrival times and how to plan a trip that reduces transfers and wait times, agencies are making their service more attractive to choice riders. This information is extremely accessible these days, thanks to mobile devices and the publication of open data so that third parties can create transit-oriented apps.

Somewhat more expensive intelligent transportation technology, in the form of vehicle location and passenger counting systems, gives transit agencies the digital infrastructure they need to run buses and trains more efficiently. When the data from these systems is properly analyzed, transit agencies have the ability to put routes where riders need them the most and to accurately gauge capacity. More efficient use of bus and train fleets can also translate into less waste and tear on equipment.

Technology also allows transit agencies to improve how they serve customers. In the private sector, 62 percent of consumers have used social media to report customer service issues and nearly 30 percent of customers expect a service response within one hour when they contact a company via social media, according to Oracle Retail. These same consumers expect similar digital dialogues from their transit agencies. Those agencies that do it correctly will have a higher percentage of satisfied riders.

Making the right investments in transit technology takes time and money. But budgets remain under stress. New York City’s vast transit agency, the Metropolitan Transportation Authority, could be facing $100 million deficits in coming years, according to The New York Times, and has to address a $18 billion shortfall in its capital plan. MTA just announced a fare increase to close the budget gap. Even innovators like Portland’s TriMet aren’t immune. Over a four-year period, the agency has contended with $56 million in budget shortfalls, according to the city’s daily newspaper, The Oregonian. Yet budget issues, a perennial problem for transit agencies, shouldn’t be an excuse for not using more advanced IT in public transportation. With the right IT leadership and the kind of innovative mentality that is spreading through city governments these days, transit agencies can and should be able to apply technology in cost-effective ways that can reap far-reaching results as more people make public transit their choice for travel. It’s a ride worth waiting for.
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Cordell Schachter, CTO, New York City Department of Transportation

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More than 20 state and local governments adopted or amended open data edicts in 2014, making it a banner year for transparency. But the policies set forth by Washington, D.C., Pittsburgh, Houston, Maryland, Illinois and the others are just the tip of the iceberg. Experts believe the trend will continue in 2015, particularly in the East.

Ohio is considering a measure at the state level, while Boston and Cambridge, Mass., could pass local open data laws in 2015, according to the Sunlight Foundation. The organization also has its eye on open data conversations happening in Alaska, Minnesota and Nebraska.

Alisha Green, policy associate for the Sunlight Foundation, said Ohio is of particular interest, due to “a lot of excitement” concerning open data around the state in 2014. She expects laws on the topic to be passed at some point this year. “There are an increasing number of discussions around the value of open data and what it can have,” said Green. “Not only transparency, accountability and innovation, but more generally through encouraging collaboration between governments, nonprofits and community groups.”

Also spotlighted by Green was Connecticut. Cities throughout the state will be looking at their open data policies after successful ones were rolled out by the state and the capital city of Hartford.

Open data activity continues next door in Massachusetts. Although Boston has an executive order regarding open data, Green said the city might pass legislation to help bolster it. That could trigger further movement in Cambridge on the issue.

Ben Kallos, a New York City councilmember and co-chair of the Free Law Founders, a nationwide partnership of local elected officials and others dedicated to upgrading online access to America’s laws and legislation, agreed. “Cambridge and Boston … are probably the most serious of the contenders with legislation most likely to pass,” he said. “[They] are sister cities within the same vicinity and both have a very educated populous who are technologically savvy and demanding of these sorts of things. And they have tech-savvy legislators on board, so I think they are the two cities to watch.”

Green also sees California continuing to set an example with open data policies and legislation. San Diego passed a
policy at the end of 2014, and other cities and counties in the state will likely follow. Calling California a “leader with technology and innovation,” Green said local governments are going to see the added value of having open data policies in place for collaboration and information sharing.

She explained that passage of a 2014 ballot measure signals strong support for open data among California voters. The measure — known as the California Compliance of Local Agencies with Public Act — requires local governments and agencies to comply with the California Public Records Act and the Ralph M. Brown Act as well as with any subsequent changes to the acts. This guarantees a person’s lawful right to attend public meetings and have access to public data. “The voters decided the state public records law is something all municipalities will have to adhere to,” Green said.

There are an increasing number of discussions around the value of open data.

What to Watch

While many large U.S. cities have jumped on the open data bandwagon already, Green said 2015 is ripe to have a lot of mid-size cities and counties follow suit and take the leap. While she couldn’t name specific local governments, Green anticipates that the growing number of public records requests will spur leaders to consider formal open data policies.

Green also noted that more municipalities are taking a proactive approach to sharing data, rather than simply reacting to public records requests. Kallos has noticed the same trend and New York City is working to address it. The city is following the federal Freedom of Information Act with its similarly named Freedom of Information Law (FOIL), which includes a “three strikes and you’re in” initiative to add more information to New York City’s open data portal. After a city agency receives three requests for the same data set or record, that information is added to the data portal if it isn’t already uploaded.

For example, Kallos explained that the City Council’s payroll records are “FOILed” regularly. So instead of requiring people to request the data, it would make more sense to put it online. “Beyond the open data, it’s just helpful to have tracking of the information that people are requesting and having it public so … we can actually be responsive to the overall requests we’re seeing as a city,” Kallos said.
How Open Is University Data?
States should push public universities to adopt open data policies.

Many states now support open data, or data that’s made freely available without restriction in a nonproprietary, machine-readable format, to increase government transparency, improve public accountability and participation, and unlock opportunities for civic innovation. To date, 30 states have adopted open data policies, via executive order or legislation, and 24 states have built open data portals. But while many agencies have joined the open data movement, state colleges and universities have largely ignored this opportunity. To remedy this, policymakers should consider how to extend open data policies to state colleges and universities.

There are many potential benefits of open data for higher education. First, it can help prospective students and their parents better understand the value of different degree programs. One way to control rising higher ed costs is to create more informed consumers. The feds are already pushing for more data, or data that’s made freely available without restriction in a nonproprietary, machine-readable format, to increase government transparency, improve public accountability and participation, and unlock opportunities for civic innovation. To date, 30 states have adopted open data policies, via executive order or legislation, and 24 states have built open data portals. But while many agencies have joined the open data movement, state colleges and universities have largely ignored this opportunity. To remedy this, policymakers should consider how to extend open data policies to state colleges and universities.

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Google for Robots?

Turns out there are a lot of things that humans know that robots don’t. People can call on Siri, Google or Wikipedia for immediate answers to their top-of-mind curiosities. But robots need a bit more context around the information they seek, given their lack of incidental knowledge. Stanford University’s Ashutosh Saxena is leading a team of students building Robo Brain, a knowledge engine just for robots that will help them carry out tasks. Creators envision the project as collaborative, linking information from other services, and using learned knowledge from similar situations, i.e., a well-documented egg-handling technique could also apply to carrying light bulbs. Read more at Robobrain.me.
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Who’s in Charge of Social Media?
How social duties have evolved since government got on board.

Over the last several years, I have witnessed first-hand the evolving role of the local government social media manager. I used to be one myself. Soon after I began my job as the Web manager of Reno, Nev., in 2006, I helped the agency launch a presence on social media. I continued daily management of social profiles until I left for private industry consulting in 2012.

Social media management in the public sector was a lot different in the early years. There was a good deal of hesitation about even having an official social network profile as an agency, let alone actually spending taxpayer dollars to hire someone to manage those accounts.

Today, we are observing an interesting shift in social media staffing in local government. Agencies recognize the value that communicating on social networks brings to their citizens, and a social presence is often an expectation by both leadership and the public. Now, agencies are getting serious about developing roles specifically for social media.

More than Other Duties as Assigned
Social media management began as an “other duties as assigned” function that could be handed down to existing staff. It was an Internet technology after all, so it made sense to give the responsibilities to the webmaster. Having served on the board of the National Association of Government Web Professionals, I saw this shift unfold in cities and counties across America.

At the same time, government communicators were also beginning to take on responsibilities such as social posting. They were already accustomed to being the voice of the agency in the scope of their roles in writing and communicating with the press and public, so it was a logical fit. Over time, once agencies started recognizing that the return on their presence on social media was proportional to the amount of effort put into managing it, the issue became how can we get more of this good thing?

What’s in a Name?
A group of government and private industry advisers and I have been organizing the nation’s first social media conference for U.S. city, county and state government. The April 2015 Government Social Media Conference & Expo in Reno is a training event just for individuals who manage local and state government social media.

Early conference registrations have given us a glimpse of the present-day titles of social media managers. Surprisingly only about 5 percent of attendees are government Web professionals, and only around 4 percent even have “social media” in their job title. In fact, the position that most participants held is either public information officer (PIO) or some variation of communications coordinator or specialist.

Although many government social media managers do not actually have the words “social media” in their job title, we are seeing more and more agencies dedicate positions to social media-only roles. For instance, PIO Jennifer Davies’ primary job responsibility is managing social strategy for Las Vegas.

The PIO job title takes the lead in social media in other public-sector agencies as well, such as law enforcement. Social media survey data from the International Association of Chiefs of Police in 2014 shows that the PIO is typically responsible for the day-to-day management of the agency’s public-facing social media accounts. The distant second and third most popular roles for managing social media in law enforcement are command staff and the chief executive.

Where Is this Role Heading?
The evolution of the government social media manager first involved duties absorbed by Web or communicator roles (and sometimes simply clerical staff). Today, we are seeing the dedication of roles such as PIO and communicator, which can have a large number of focus areas, to social media. As we move further into 2015 and beyond, you can bet that these dedicated social roles will be more commonplace, along with more aptly named job titles like “social media coordinator” or “social strategist.”
## Freedom of Information/Public Records Request

**Part I:** I hereby request to: **X** Inspect **_** Copy the following records:

Please provide all Everton City and Police Department social networking content from May of 2012 regarding special notices and street closures related to the Everton Memorial Day parade.

**Part II:** What format do you request?  **X** Electronic  **_** Paper

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

| Name          | 1074 Freedom Way | City: Everton | Phone: (209) 867-5308 | Email: info@public.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.

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**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.

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