

THE LAST MILE

Delivering Meaningful Answers from Your Data



ACTUATE
The **BIRT** Company™

INDUSTRY PERSPECTIVE

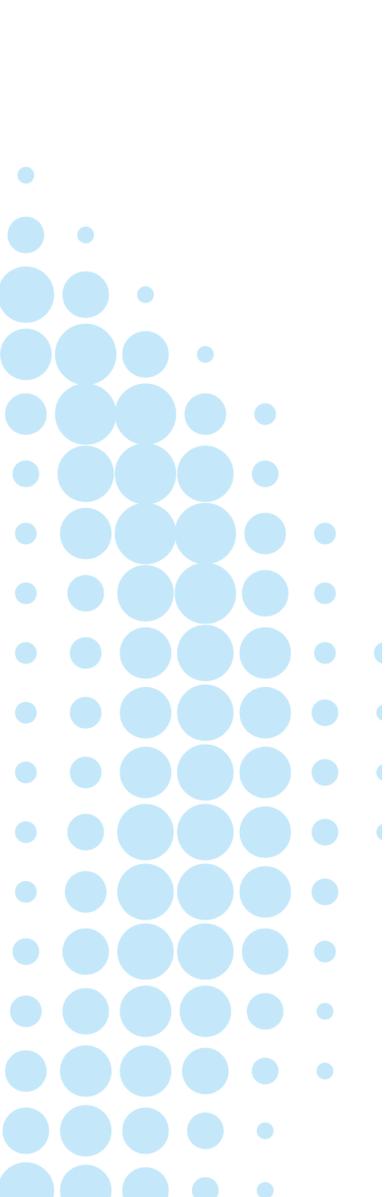


In reality, it's the computers that like data
– people prefer answers.

If we focus on the answers, we'll be able to
unlock the fourth V of Big Data,

and that's value.





WHERE ARE WE NOW?

Understanding the Last Mile of Big Data

Public sector agencies are beginning to understand the enormous effect of data. Nowhere is this more apparent than at the highest level of the U.S. government. Most recently, the White House issued a directive entitled “[Building a 21st Century Digital Government](#)” in which more accessible data and insights – specifically the opening up of government data to the public – was a key goal of the federal government’s digital strategy.

As a result, at the click of a mouse, it is now possible to view the central role that data plays in government work, from the Census’ [data visualization](#) tools to [data.gov](#), which houses over one hundred thousand unique government datasets for public consumption and private use.

We’re entering the age of Big Data, in which decision-making at all levels will be

powered by the enormous amount of information we produce every day. For government agencies, this data has the potential to deliver tremendous benefits for the customers they serve, including civil servants, citizens and even other government agencies.

But how close are we to that goal? The ability to collect, store and process the data isn’t the complete journey. Data, whether it is big, small, or somewhere in between, is only valuable when you can draw some meaningful conclusions from it.

This is the last mile of data value for agencies. It is about finding a way to actually parse out the raw data into useful nuggets that eventually inform decision-making both inside the agency, as well as for those you serve.

To help public sector agencies achieve this final goal, GovLoop and Actuate have

produced this report on the benefits of focusing not only on the data itself, but on the ability to use it in a meaningful way.

“When talking about Big Data, we often hear about the three ‘Vs’ – Volume, Variety and Velocity,” said Allen Bonde, VP of Product Marketing and Innovation at Actuate. He recently sat down with GovLoop to discuss the transformative potential of data in the public sector. “In reality, it’s the computers that like data – people prefer answers. If we focus on the answers, we’ll be able to unlock what I call the fourth V of Big Data, and that’s value.”

Let this report serve as your guide to reaching that last mile.

The Changing Demands of the Data-Driven Enterprise

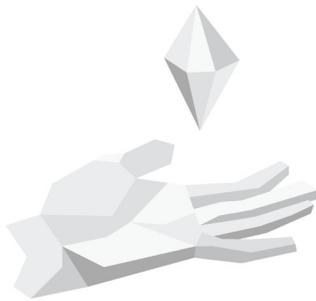
The traditional model of the data enterprise, in both the public and private sectors, was very IT-centric. IT shops, based on requirements from business groups, would deploy transactional systems and build out custom, static reports, usually delivered in tabular form. New queries – even something as simple as a new column in a report – could take days and sometimes weeks to deliver.

There isn't anything inherently wrong with this model, but these days, it isn't agile or responsive enough to take us to that last mile of value-derived data analysis. Plus, many of these approaches were more suited to traditional data sources versus today's cloud or even social data.

As a response to this gap, there are a number of disruptive trends that are fundamentally changing the organization's relationship to data.

“Small data connects people with timely, meaningful insights – derived from Big Data or ‘local’ sources – organized and packaged, often visually, to be accessible, understandable, and actionable for everyday tasks.”
– Allen Bonde

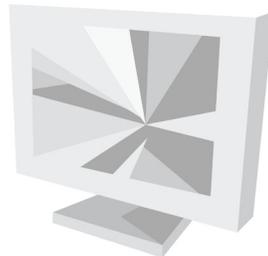
Three Trends Changing the Business of Data



1 CONSUMERIZATION OF IT

As individuals become accustomed to the pervasive influence of technology in their lives – from cloud to mobile – they begin to expect this experience in other areas. This includes the availability and consumption of data.

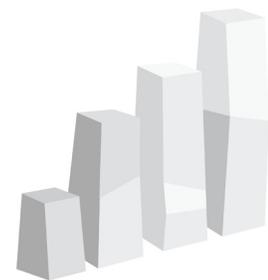
When you put your consumer hat on, and go to a travel website or an e-commerce website, you expect to easily navigate, interact, and even experience a certain level of personalization. In this way, when citizens or employees seek out data to complete a task or gather information, they want an experience similar to Amazon or Kayak.com – as opposed to a green screen.



2 DIGITAL DISRUPTION

The disruption of consumer experience is not only driving the demand side of the IT equation, but also the supply of IT as well. Cloud, mobile, and even social media are reconfiguring the traditional IT-centered world of data management into one that is more distributed around the organization, leading to self-service and user empowerment.

This is a transition that even extends outside of the organization to the public. These technologies are also transforming the way users can view data. Rows and columns have given way to rich visualization tools and a level of interactivity that is both accessible and usable – which gets us closer to that last mile of value extraction.



3 THE EMERGING BIG DATA MOVEMENT

The small data movement is the trend that is driving us towards the fourth V of Big Data.

“Small data connects people with timely, meaningful insights – derived from Big Data or ‘local’ sources – organized and packaged, often visually, to be accessible, understandable, and actionable for everyday tasks,” said Bonde.

The key is that the focus is no longer on the size or heterogeneity of the data. Instead, the focus is on making sure the data is available to all, easy to apply and focused on the task at hand.

Three Benefits of Actionable, Accessible Data

We've discussed many of the changes that are altering our relationship to data, as well as the expectations of the consumers of data both inside and outside of the agency, but what are the benefits? What can reaching the last mile of data do for your agency?

There are three main benefits from value-oriented data-driven apps.



1 RESPONSIVENESS

With actionable, relevant data and new ways to serve up insights directly to potentially millions of end-consumers, governments have the potential to be much more responsive to the needs of the organization and citizens.

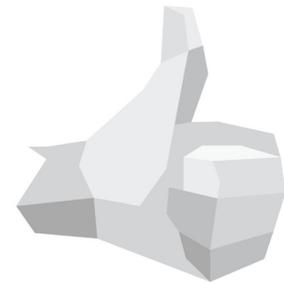
If you have insight into what's important or relevant – or even into the questions people are asking – you can more confidently take action in response. That's the over-arching objective of data use here: to allow agencies to be more responsive to their customers, whether they are employees, citizens, or other government stakeholders.



2 PERSONALIZATION

A key idea behind small data is that experiences can be more tailored or specific to the consumer of the data and the device on which the consumer views that data. On one hand, there may be a lot of data that is being harvested, with a lot of potential users logging into an application or portal, which is exactly the type of wide customer base governments face. But at the same time, you need to help make each individual feel like the data consumption experience is made just for them.

This is the primary benefit of the small data approach: Even as you build to scale, you're ensuring that the delivery platform takes into consideration the unique demands of the individual.



3 PROACTIVE DECISIONS

An outcome-oriented approach has the greatest potential to evolve from a reactive to a proactive model of data-driven analysis.

This is the ultimate big picture promise of Big Data – the ability to anticipate the next big trend, whether it is an election outcome or weather patterns or scientific discovery. Plus, if you can wire up our data-driven apps to understand what information is most useful to each user and how they consume it, and feed that back to app developers, you can essentially anticipate the best way to engage and inform going forward.

The Key to Personalization? Visualization.

The way to create a more personalized view of data is with pictures and dashboards that invite interaction, manipulation and exploration. The more data we have at our fingertips, the greater the imperative to simplify things for users at all levels. The consumerization of IT simply isn't compatible with a data architecture that is so complicated and inaccessible that only data scientists can extract meaning from it.

“To me, the shortest path to simplifying a data stream is through pictures,” said Bonde. “We see more and more people using Actuate's solutions to render the final output as an interactive visualization or infographic-style dashboard. You're telling stories with pictures, but beneath those pictures is still the underlying data.”

Thus, users who aren't formally trained in data analytics are still empowered to manipulate, visualize and use data to accomplish their tasks, without being overwhelmed. Meanwhile, for those who require a deeper dive, the option is there to explore beyond the pictures and get to the data. You're allowing users to pick and choose the data they want to expose, as opposed to dumping out a large amount of data. This is the essence of delivering personalized insights.

Which Last Mile Vehicle Is Right for Your Agency?

As with anything technology-related, there inevitably comes the decision of which solution to adopt and how the organization should go about building it. There are so many choices: build it on premise or in the cloud; build it yourself or buy a third-party solution; go with a commercial off-the-shelf (COTS) product or open source?

“In simplest terms, I think for most people it is going to be a mix,” said Bonde. “A hybrid approach seems to make sense for most organizations, especially where you have some unique data requirements or end-user requirements where you’re not going to find a solution out of the box.” Creating something fully custom is not generally a viable option either, given it is expensive and you won’t benefit from the advancements that have been created by the ecosystem of commercial and open source developers.

Open Source as a Key Component to Any Hybrid Solution

There is an enormous amount of innovation coming out of the open source community, and the field of Big Data and personalized analytics is no exception.

“In the case of Actuate, there are three and a half million developers who use [BIRT](#) [Business Intelligence and Reporting Tools, an open-source reporting and BI project Actuate has co-sponsored], and that by any measure is far and away much larger than the number of resources we have inside the company,” said Bonde. “We have built on a lot of this innovation to create better commercial products, the same way companies using Hadoop have created vibrant businesses around that community.”

This commercial-open source approach is especially beneficial in the field of advanced analytics and some of the newer areas like Internet of Things (IoT), where we are connecting devices and monitoring machines as well as the data from how people interact with them. “These are leading edge technologies, but despite this, it is amazing how collegial the community is,” said Bonde. “People are posting their enhancements or their additions, and they are offering them up to the community with the developer mentality of, ‘Hey, I just figured this out and now I want to share it with my peers.’”

An open source community is also a great complement to the kind of personalization

required by today’s users. Open source developers are equipped to be agile, productive and responsive to the needs of their users because they are supported by an ecosystem of developers working on the same challenges.

“These are leading edge technologies, but despite this, it is amazing how collegial the community is,” said Bonde.

Finally, commercial-open source is also a great fit for the public sector technology community. Unlike the private sector, in which companies are competing for customers and market share, the public sector is a kind of open source community itself. Agencies are often willing to share best practices, technology solutions and even code. We’ve already seen state governments [sharing mobile apps](#) and the creation of the [General Services Administration’s 18F](#), which helps federal agencies architect open data solutions.

Of course, not everything needs to be open source or customized. A best practice is to surround your open source tools with the benefits of an enterprise architecture and system design – things that you would never want to create yourself. Connectors, APIs and management tools – it doesn’t make sense to build those yourself if they are available through a commercial platform that provides the scale and security often needed to complement pure open source components.

This small data philosophy can be realized by creating apps that are simple, smart, responsive and social, as Bonde originally outlined in an op-ed for *Forbes* in 2012. “In a way, there’s a design philosophy that is also embedded in that idea,” said Bonde. You should simplify as much as you can and then build around the specific needs of your consumers. This can be a piece of information, a particular insight, a tool, or even a connector that delivers what they need in an environment that makes sense for them.

The last mile of Big Data, while a short distance, requires smart and careful planning, as well as the right technology, to empower your agency, your citizens, or anyone else who will consume your data. But getting it right can create more impact than the rest of the entire journey combined.

About Actuate

Actuate provides software to more than 3.5 million BIRT developers and OEMs who build scalable, secure solutions that save time and improve brand experience by delivering personalized analytics and insights to over 200 million of their customers, partners and employees. Actuate founded and supports BIRT – the open source IDE – and develops BIRT iHub™ – the world-class visualization and deployment platform – to significantly improve productivity of developers working on customer facing applications. Actuate’s BIRT Analytics™ delivers self-service predictive analytics to enhance customer engagement using Big Data. The Actuate Customer Communications Suite™ empowers organizations to easily transform, process, personalize, archive and deliver high volume content and individualized correspondence. Actuate is headquartered in Silicon Valley with more than 5,000 enterprise customers in financial services, technology and government. Visit actuate.com and developer.actuate.com.



About GovLoop

GovLoop’s mission is to “connect government to improve government.” We aim to inspire public-sector professionals by serving as the knowledge network for government. GovLoop connects more than 140,000 members, fostering cross-government collaboration, solving common problems and advancing government careers. GovLoop is headquartered in Washington, D.C., with a team of dedicated professionals who share a commitment to connect and improve government.

For more information about this report, please reach out to Catherine Andrews, director of content, GovLoop, at catherine@govloop.com.

GovLoop
1101 15th St NW, Suite 900
Washington, DC 20005
Phone: (202) 407-7421
Fax: (202) 407-7501
www.govloop.com
Twitter: @GovLoop





ACTUATE
The **BIRT** Company™

GovLoop
1101 15th St NW, Suite 900
Washington, DC 20005
Phone: (202) 407-7421 | Fax: (202) 407-7501
www.govloop.com