Analytics Paves the Way for Better Government

The State of Indiana is applying data-driven insights to improve outcomes for citizens and make public sector performance more transparent.

BY MICHAEL S. GOLDBERG

1. Chui, Michael, Diana Farrell and Kate Jackson. "How Government Can Promote Open Data and Help Unleash Over $3 Trillion in Economic Value." McKinsey & Co., April 2014. http://goo.gl/Vusv99.

Managing state government often requires impassioned debate about the best way to allocate resources, deliver services to citizens and build budgets that reflect elected leaders' and citizens' priorities. The State of Indiana is bringing data-driven insights to these discussions through its use of analytics.

Public sector organizations globally are fertile ground for policymakers' vision of more effective, timely decisions. Every agency, department and bureau has years' worth of data that has been collected in compliance with documented procedures, subject to oversight and accessible via information systems. Citizens, in fact, increasingly expect government agencies to manage and analyze their voluminous data sets in ways that benefit the public and enable government transparency.

Government leaders, from the European Commission to the White House, have called for investment in big data analytics capabilities to modernize government services and aid their economies. Deeper insights from government data offer more than the possibility for better-informed policy decisions. Businesses may also use these insights to create new data-driven products and services using government data (see Figure 1, "Data That Serves the Public"). In fact, McKinsey & Co. estimates that by digitizing information, disseminating public data sets and applying analytics to improve decision-making, governments around the world can act as catalysts for more than $3 trillion in economic value.[1]

In the State of Indiana, data is at the center of Gov. Mike Pence's long-term vision for improving the management and effectiveness of government

FIGURE 1 **Data That Serves the Public**
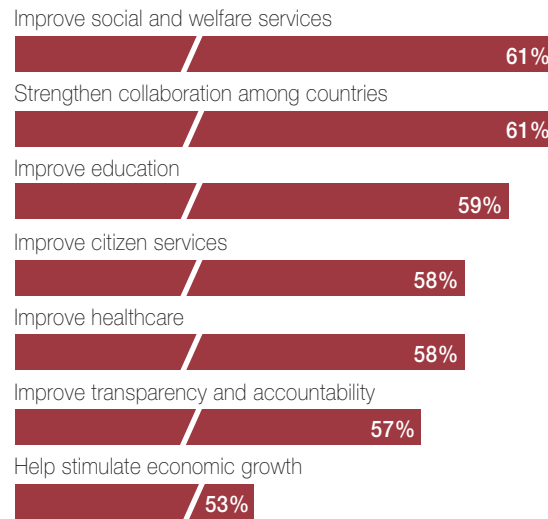
Base: 100 IT decision-makers in state public sector organizations
Source: TechAmerica Foundation. "Big Data and the Public Sector." February 2013. http://goo.gl/XacL0h

Improvements to social services and collaboration are the top benefits to using big data. (percent of respondents)

programs and making Indiana a leader in data-driven decision-making. In March 2014, a year after taking office, Pence ordered state agencies to share data and partner with the state Office of Management and Budget (OMB, which oversees state finances and agency performance management), the Indiana Office of Technology (IOT) and outside experts in a centralized effort "to improve and strengthen services, maximize the utilization of available resources and ensure that state services are available to all." As in many public sector settings—where systems and tools have become available to more easily analyze large, diverse data sets—data sharing had not, until recently, been a common practice in states.

Overseen by the OMB, the data-sharing mandate is setting the stage for an enterprisewide solution that will put key performance indicators (KPIs) in front

By augmenting existing research efforts, analytics have the potential to uncover new approaches to stubborn problems.

of decision-makers and the public. The solution will also apply both descriptive and predictive analytics to critical problems.

DATA SHARING SERVES POLICY GOALS

Indiana's initiative aligns with the administration's six-pronged roadmap that emphasizes economic growth, education and the well-being of families (see Figure 2, "Data-Driven Progress"). "This project is enabling state government to service those goals and achieve outcomes," says OMB Director Chris Atkins.

Each of Indiana's 92 agencies and departments has a role to play. Using Gov. Pence's data-sharing order as a lever, Atkins and his colleagues are working with the IOT and the other agency heads to collect data for analysis. Part of Atkins' job is communicating the end-goal. "We're trying to help the agencies see the value in this project," he says. "A culture of data-sharing means a more successful enterprise."

Data sharing is more than a technical issue, as laws and regulations restrict the handling of certain types of data. So another essential element for Atkins was to hire several legal experts who could answer questions about the rules for using different data sets. Federal or state privacy laws may require agencies to remove personal information, for example. "We hired counsel to help the agencies work through these data security issues so they don't have to task their own legal teams," he says. "We're doing it for them, in concert with their leadership" (see Figure 3, "Breaking Down Barriers").

ANALYTICS FOR SAVING LIVES

The data collection effort supports a four-point program to deliver more insights to government policymakers and the public. One segment, recently begun, targets a vital public policy problem: the rate of infant mortality in Indiana, which at 7.6 percent in 2010 ranked higher than the national average of 6.1 percent.

The project pilots Indiana's recently acquired in-memory computing platform, which supports predictive analytics capabilities. An in-memory

FIGURE 2 **Data-Driven Progress**

- Increase private sector employment.
- Attract new investment to the state.
- Improve the quality of the state's workforce.
- Improve the health, safety and well-being of families.
- Increase high-school graduation rates.
- Improve the math and reading skills of elementary students.

Source: Indiana Management and Performance Hub. http://goo.gl/t5u6yj

Insights from analytics will help Indiana pursue six public policy goals.

platform enables organizations to consolidate extremely large volumes of data from multiple sources into one database and answers any question almost instantly. Indiana is now able to collect data sets from many different state agencies for rapid-fire, iterative queries. That ability, in turn, enables analysts to test out hypotheses and answer questions using a range of techniques and algorithms.

By scrutinizing combinations of these data sources—and adding new data sources to the mix—analysts are working to identify correlations that provide signals about the possible causes of the infant mortality problem. The signals may relate to demographics, mothers' health conditions or unexpected relationships among other variables that influence babies' health.

The pilot so far is demonstrating the value of both the cooperation of state agencies (the shared data sets are useful in the predictive models) and the in-memory platform that provides fast response times to analysts' queries. Atkins says the work to date has shown promising results, but it's not finished. "We know as we add more data, we will see more results," he adds.

The findings are expected to drive the development of new programs or the updating of existing ones, so that the state can improve Indiana's performance—and reduce the number of infant deaths in Indiana. Charlie Brandt, managing director at KSM Consulting, a technology, management and data analytics consultancy that has been working with the state, says predictive analytics has the potential to elevate public policy decision-making as leaders are provided

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>
> —CHRIS ATKINS, DIRECTOR, INDIANA OFFICE OF MANAGEMENT AND BUDGET

knowledge of drivers of transformation instead of reports sharing insights on past performance.

By augmenting existing research efforts, analytics has the potential to uncover new approaches to stubborn problems. "People have been trying to improve performance and outcomes related to the public sector, and in particular, in areas like human services," continues Brandt. They do research, take the best of it and use it to model policy changes. "Analytics gives us the opportunity to show that data is a powerful component to be used," he says, "to make decisions and to improve outcomes."

Atkins says the state is now developing additional predictive analytics projects related to achieving the goals that Gov. Pence set out in his roadmap.
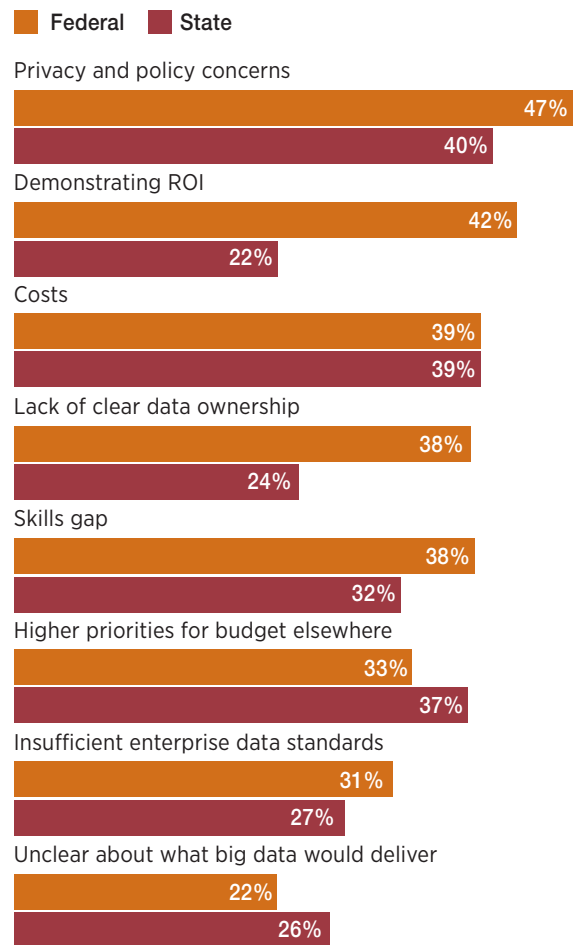
TRANSFORMING SERVICE DELIVERY

Three other projects in the state's data analytics program aim to improve transparency, so that policymakers and the public alike are able to more easily see government performance. Indiana is using the in-memory platform and data visualization tools to make data more visible. For one project, the OMB is working with agency leaders to collect data for specific KPIs tied to each state agency's performance. Another involves developing an executive dashboard system that will enable state leaders to scan these metrics and know when they change.

A related project includes the launch, in July 2014, of an online Management and Performance Hub (MPH) to share performance data in sectors tied to Gov. Pence's roadmap, including private sector employment, elementary students' reading skills and the percentage of children who are at risk of going hungry. The measures are posted on the MPH Web site, with graphs and charts that set baselines for comparison as data is added or updated.

Taken as a whole, these moves have attracted the attention of government innovation watchers like Stephen Goldsmith, a former Indianapolis mayor who is a professor at Harvard's Kennedy School of Government. Goldsmith writes: "With the launch of MPH and strong

2. Goldsmith, Stephen. "How Indiana Is Supercharging Data for Efficiency." Governing, June 18, 2014. http://goo.gl/kC4pnY.

FIGURE 3 Breaking Down Barriers

Base: 198 IT decision-makers in federal and state public sector organizations
Source: TechAmerica Foundation. "Big Data and the Public Sector." February 2013. http://goo.gl/XacL0h

U.S. technology officials view privacy and other policy issues as a top obstacle to using big data. (percent of respondents)

central leadership, Indiana stands to become a model for other governments looking to embed data throughout their operations and tap the power of data analytics to save money and transform service delivery."[2] •

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"We're unlocking the true potential for innovation through new business processes and models: real-time innovation."

—STEVE LUCAS, PRESIDENT, PLATFORM SOLUTIONS, SAP SE

Real-Time Organizations Make Decisions in the Moment

Forbes Insights interviewed Steve Lucas, President, Platform Solutions, SAP SE, about transforming operations with real-time insights.

What does it mean to be a real-time organization?

Being a real-time organization means being aware of the key factors that will impact your decisions and being able to make a decision in the moment that matters. In most public sector agencies today, decision-makers have to wait for batch processes to run. When batch technology is replaced with real-time processing, however, organizations can obtain in-the-moment policy insights instantaneously. They can use those insights to improve performance, deliver services to constituents more efficiently and develop innovative approaches to policy goals. That is why the SAP HANA platform exists: to enable organizations do business in the moment.

Where do you see the most value for different organizations?

The value comes from three main drivers. First, we reduce the complexity of the systems required to produce your existing results. This was one of the key motivations in designing SAP HANA: massive IT simplification. You can use the platform to feed data from all different sources into one system. Second, we enable agility by giving customers the ability to get real-time insight for decision-making. Third, we're unlocking the true potential for innovation through new business processes and models: the real-time innovation.

As you look ahead, what new ways of serving constituents do you envision?

Our SAP HANA platform not only can enable customers to make decisions for today, but it also provides a powerful predictive engine. Most organizations make decisions by looking in the rearview mirror. But the rearview mirror is tiny compared to the windshield looking forward. Organizations will start to build forward-looking decisions into their operating models.

What is your best advice to organizations that want to start their real-time transformation?

It is not just about the technology. SAP HANA is extraordinarily innovative, but the first thing we do is look at where the opportunities are to transform business processes. Then we spend time with customers rethinking how those processes are designed, and how to remodel them. You have to start at zero: What would you do if you didn't have to wait for information? If you don't have to wait, there's an opportunity for massive reinvention and value creation across industries.

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