



Are You Ready for Analytics?

How to identify the right technology and expertise to get more value from data

Governments are good at collecting data, but they often struggle with getting maximum value from it. Here's why: Much of their data is locked in silos making it difficult to share across programs or organizational boundaries. Deploying analytics tools can involve a complex integration of hardware, software and systems. And finding and retaining employees with data science skills is a challenge on public sector salaries.

Public sector organizations must overcome these challenges as they look to gain better insights from current data, keep pace with new data types and volumes, and bring analytics tools into everyday work. Meeting these goals takes more thought and preparation than simply acquiring analytics tools. Agencies also must address underlying infrastructure, data access and governance, and organizational issues.

This paper covers five strategic factors behind any successful analytics effort and describes how jurisdictions can better prepare for analytics programs.

FACTOR 1: **Questions That Need Answers**

Identifying which questions should be addressed with analytics may seem like an unnecessary task. After all, aren't data analysis tools supposed to uncover information about anything and everything? Yes, to some extent. However, agencies can obtain more focused and useful answers by first identifying which questions really need to be asked.

Good questions focus on critical problems or operational needs that can be addressed with better access to available data and better tools for extracting meaningful information. Analytics help answer data-dependent questions such as:

- ▶ **How can we quickly detect cases of fraud, waste or benefits abuse?**
- ▶ **Which trends or areas of concentrated problems indicate gaps in our service delivery?**
- ▶ **How can we use real-time field intelligence to improve situational response?**

Jackson, Miss., employed this approach to improve routine business operations. In early 2016, city leaders used analytics to ask how they could improve code enforcement and shorten the municipal hiring process. They discovered that code enforcement activity was trailing behind the clerical steps of property cleanup, which prompted them to shift enforcement responsibility to the police department to speed up the process. And after analyzing city hiring practices, the human resources department made changes that cut hiring time by 50 percent.¹

FACTOR 2: **Data Availability**

Making data available for analytics tools involves more than configuring access privileges in a reporting system or database. It also requires standardizing data and ensuring its accuracy so the results of analytics can be relevant and trusted. Four activities help prepare data to be used appropriately for analytics:

- ▶ **Create an inventory of current data warehouses, program databases and other information sources.**
- ▶ **Identify whether unstructured data such as emails, social media content or video clips will be processed for analytics.**
- ▶ **Define requirements for data use, privacy protection and access control based on the source and nature of the data.**
- ▶ **Assess the quality of data for analytics purposes and consider whether it needs to be reformatted or redefined for consistency.**

Some governments use an analytics initiative to consolidate data for the first time, which can improve the availability of data for analysis and provide other benefits. For instance, Santa Clara County, Calif., integrated 11 disparate databases into a single data warehouse, which led to improvements in case management, business operations, staff effectiveness and regulatory compliance.²



FACTOR 3: **Charter to Act**

Your ability to use particular data sets for analytics projects can be impacted by privacy and security laws. HIPPA restrictions on the sharing of patient health information is a common example. Other federal, state and local regulations may exist depending on the information type. Understanding how these laws and regulations apply to your analytics project is vital, particularly as agencies seek to tap into broader data sources.

Agency culture also can have a chilling effect on data sharing. Too often, data sharing is considered risky, leading to resistance when new projects are proposed. A mandate from senior leaders can motivate the culture change needed for successful adoption of data sharing and analytics tools, as well as the use of the resulting information dashboards, data portals and visualizations.

For example, a 2014 executive order from Indiana Gov. Mike Pence helped establish a data sharing culture among agencies in his state. The order required state agencies to comply with data sharing requests from Indiana's Management and Performance Hub (MPH), a collaboration among the governor's office, budget office and IT department that runs the state's analytics program.

FACTOR 5: **Data Science Expertise**

Although analytics software is designed to help non-experts produce reports and graphs, deeper knowledge of data science can help maximize data value. For example, a team of data analysts in the New Orleans Office of Performance and Accountability supports the city's analytics activity with backgrounds in data science, mathematics and public policy. The office has used its analytics expertise to launch more than a half-dozen data-driven programs to improve the quality of life for New Orleans residents. Among its accomplishments are BlightStat, an initiative to clean up rundown residential properties that reduced blight by 10,000 units in its first 3 years of operation.⁴

Based on the nature of your organization's data and information needs, you should evaluate the knowledge required to develop relevant, accurate and meaningful analytics. This expertise factor is especially important when working with unstructured data, which doesn't always fit into neat schemas or processing rules. Some organizations have opted to develop data knowledge internally through staff training. Others seek help from outside experts. You'll need to decide which approach is right for your situation.

FACTOR 4: **Technology Infrastructure and Knowledge**

To support analytics, your organization's IT team should:

- ▶ **Assess the system integration work required to create a well-designed analytics infrastructure that can be deployed quickly, managed easily and scaled as demand grows.**
- ▶ **Identify the ongoing management activity needed to maintain data access performance as well as analytics workload balancing, system administration and security.**
- ▶ **Consider the impact of growing data volumes; new types of information; and new analytics needs on computing, storage and network resources.**

A project announced by the city of Pittsburgh in October 2016 exemplifies how analytics needs can evolve, driven by the Internet of Things, sensor technologies and other developments. The city will deploy a network of roadway sensors and adaptive traffic signals to reduce congestion. The new technology also will allow buses, public safety vehicles and commercial trucks to communicate with traffic signals so they can move through intersections more efficiently.³

Governments have a range of options for acquiring the infrastructure and data tools they need. Besides traditional technology investments, there is a growing array of services-based approaches that can lower the upfront cost for deploying new computing, storage and analytics resources.

CONCLUSION:

Ready for Success with Analytics

The value of your agency's analytics program is determined in part by the quality of the supporting technology and data expertise. By working through the five strategic factors described here, decision-makers can identify which parts of an analytics initiative should be deployed internally and where it makes sense to look for external help.

To be most effective with data analytics, state and local governments need to develop strategies that let them share information across organizational and jurisdictional boundaries. Implementing the right infrastructure and expertise lowers barriers to data sharing and produces higher quality analytics. It also provides scalability as data volumes grow and analytics requirements evolve. Making the right investments now helps ensure that analytics efforts meet your current needs and scale to meet future demands.

This piece was developed and written by the Center for Digital Government custom media division, with information and input from ViON.

COMBINING ANALYTICS TECHNOLOGY AND DATA EXPERTISE

A new form of outsourcing is available for analytics, combining cloud-based analysis software and data science expertise. As an integrated solution, this form of outsourcing enables governments to:

- Combine preconfigured and validated analytics technology with expert advice on data management and analysis.
- Avoid the delays, complexity and costs of deploying servers, software and integration resources needed for an analytics initiative.
- Obtain a resource for expensive, hard-to-find data scientists.
- Gain ongoing flexibility and scalability in technology and knowledge resources to serve the organization's changing data volumes, analytics needs and budget.

1. www.govtech.com/data/How-Jackson-Miss-Used-Data-to-Build-a-Better-City.html
2. www.govtech.com/library/papers/temporary_381.html?promo_code=GOVTECH_web_library_list
3. www.govtech.com/fs/Pittsburgh-Receives-10-Million-for-Smart-Spines-Traffic-Sensor-Program.html
4. www.nola.gov/getattachment/Performance-and-Accountability/Initiatives-and-Reports/BlightSTAT/Blight-Report_web.pdf/

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