4 Best Practices for Data-Driven Decision-Making in Government Agencies

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Introduction

The President's Management Agenda (PMA) identifies data as one of three key drivers of transformation in government. In conjunction with its IT modernization and workforce development initiatives, the administration is looking to align the technology, processes, and policies needed to leverage data as a strategic asset to support evidence-based policy- and decision-making.

The linchpin of this vision is the ability to provide all stakeholders with timely access to the right data, and to ensure that the data is accurate and understandable. This holds true whether those stakeholders are working in the same organization, across agency lines, or even in different sectors.

In short, data must be treated as a strategic, enterprise asset.

The framework for a new, data-centric approach is taking shape. The 2014 Digital Accountability and Transparency Act defined an open standard for information model schema that, while intended primarily to make data more readily accessible to the public, also supports information sharing across government. Now, as required by the PMA, the administration is developing a Federal Data Strategy that will provide a framework for improving the governance, use, and sharing of government data.

All these efforts will be enhanced by ongoing IT modernization initiatives, accelerated by the Modernizing Government Technology Act. As part of its modernization strategy, the administration is looking to replace legacy systems and to move applications and data to the cloud. This should go a long way toward eliminating information silos that traditionally have made it difficult for agencies to fully leverage—or share—their wealth of data.

Reviewing data practices

Still, legislation, policies, and standards can only go so far in helping agencies to share and use data. Agencies also need to look at their own data practices.

For example, like most organizations, government agencies traditionally have accessed data via static reports from enterprise applications and business intelligence platforms that are generally complex, inflexible, and difficult to share. Consequently, many knowledge workers still manage data in spreadsheets, which are hard to consolidate and are not designed for collaborative work.

To treat data as an enterprise asset requires a different approach. Fortunately, a new generation of technology offers agencies capabilities that were unimaginable just a few years ago.

Change is never easy, but learning from those who have taken the journey before you is the best way to ensure success. Here are four best practices that can help you and your agency support collaborative, data-driven decision-making.

PRACTICE 1

Measure what matters

Data for data's sake is useless. As agencies become more adept at identifying and gathering data on particular programs or around key issues, the wealth of available data can easily overwhelm data consumers, leaving them with no clear sense of what is meaningful and what is just noise. This is why data analytics is so important.

Data analytics clears the noise by interpreting data, finding patterns, and supporting better decision-making. This process is not driven by the capabilities of the technology but by the goals of the program. What are the measures of success—the key performance indicators (KPIs)—that can enable an agency to monitor its progress against those goals? Once KPIs are defined, an agency can determine how to leverage analytics to capture and deliver meaningful data.

If properly deployed, data analytics brings new energy to a program, as stakeholders or end-users are able to see concrete evidence of the program's success.

Unfortunately, organizations often fall into the trap of defining their goals too broadly, making it difficult to achieve or even discern progress. When this happens, people can sour on analytics. But the problem is not with the technology, nor is technology the solution. Rather, the solution, familiar to organizations everywhere, is to focus on goals that are SMART: Specific, Measurable, Accurate, Reliable, and Timely.

There will always be a number of individuals who are power users—those who have both the need and expertise to take a deep dive in to the full store of data. For most people, however, that would be counterproductive. Instead, they benefit from having data organized around specific topics, with an emphasis on the most meaningful metrics.

This approach is especially critical when sharing data with the public, where little can be assumed about an end user's technical or subject matter expertise. But often it's just as important with partners or even internal stakeholders. The concept of data-driven decision-making assumes that decision makers have access to the right data, not to every available data set.

The U.S. Department of Agriculture (USDA) is making a conscious effort to avoid a data deluge in developing its Executive Dashboard initiative. These dashboards will integrate data from systems across the department's 29 agencies and staff offices. While the data will be stored in a data lake, the initiative is focused on tracking metrics related to seven administrative functions: human resources, information technology, finance, property, procurement, security, and operations.

This initiative "addresses USDA's vision to come a more data-driven organization by placing key sets of information at the fingertips of leadership," wrote Ted Kaouk, Chief of Staff in USDA's Office of the CIO, in a blog post about the initiative.

In order to find the right set of metrics to use for published data insights, consider the following:

- **Can you build a systematic and on-going means of measurement?**
- **What are the most relevant metrics users will be reviewing over time?**
- **Can you design a meaningful metric that measures program performance outcomes?**
- **How about metrics against the cost to execute programs and the budgets that support them?**
- **Is this metric truly necessary to contribute to the agency's objectives?**

PRACTICE 2

Empower your people

As noted above, data analytics traditionally has been a function of the IT department. The principle problem with this model is that, inevitably, it limits the ability of end users to interact with data. Typically, these users receive pre-determined reports on a pre-determined schedule.

Consider this scenario: An end user reviewing a report notices an anomaly—something that could either be an error, or an important new data point. But with a static report, they have no way to follow that line of inquiry. They might put in a request for a new report, but it will take time to be processed, if it's even approved.

The fact is that the end users, more than IT experts or even data specialists, often have the best idea of what questions need to be asked around a given topic to gain new insights. All they need is the ability to ask those questions. That is not to say that every end-user wants or needs to be a power user. *But everyone should have the ability to access and query the data they need using intuitive tools.*

The U.S. Agency for International Development (USAID) has made self-service analytics a priority. Saying that data should be a "team sport," the agency ensures that both its leaders and knowledge workers have access to data and analytic tools. The goal is to foster data literacy throughout the agency. This makes sense: to really take hold, data-driven decision-making should not be limited to top-level officials but instead should be understood and practiced throughout an organization. Learn more in this interview with USAID Chief Data Officer Brandon Pustejovsky.

Self-service capabilities also help create a culture of accountability. Given the ability to access and analyze data, employees can develop a better understanding of how programs are performing and what adjustments might be made. For example, an employee can promptly correlate budgets with programs and outcomes. Something that used to take weeks and months is now made readily available and shareable in just minutes and seconds with a few clicks.

However, keep in mind that the IT department still has an important role to play. First and foremost, IT needs to ensure that analytic operations comply with security, privacy, and other mandates. They also should set the rules and processes for data governance, set standards for analytical processes, and ensure that users are accessing appropriate data sources.

Finally, the IT department must ensure that the analytics platform integrates well with the broader enterprise. Without IT's buy-in and support, a self-service data analytics initiative is not likely to succeed.

PRACTICE 3
Tell stories through visualization

As agencies extend analytics capabilities beyond the experts, they might run into a problem: the non-experts—both leaders and knowledge workers alike—won't necessarily understand how to interpret the data.

This is the problem with spreadsheets. Power users and analysts aside, people don't think in terms of rows and columns. They can make sense of it eventually, but they do not interact with a spreadsheet intuitively, and the more data sources involved, the more difficult it gets.

That's why dashboards are so important. Dashboards show rather than tell, using color, shape, and other visual cues to help viewers grasp essential details quickly. For example, dashboards often use a green-yellow-red color scheme to convey the status of programs, with red intuitively understood as a sign of problems. Visual displays also can be used to make trend lines or clusters immediately apparent. The more data or data sources involved, the more important visualization is.

The presentation of these visual cues provides a narrative that helps users interpret the data—and to identify storylines worth further investigation. For example, a look at call center transactions over the course of a year might show a steady increase in online transactions that can be correlated with a digital campaign around those services. But perhaps a trend line shows a dramatic drop during a recent week. This outlier, clearly visible in the graph, points to a potential problem that might need to be explored.

One way to discover and showcase relevant insights is to bring together data sets from multiple data sources, also known as data mashups. This can be done with simple drag and drop tools (no coding required) that offers meaningful visual analysis. For example, bringing together separate data sets on poverty and transportation to answer specific questions with more depth, or to find completely new insights.

Visual analytics help knowledge workers collaborate, providing a common picture as a starting point (see next section). But data visualization also plays an important role when sharing data outside the agency—whether it's with other agencies or the general public.

The decennial census is a case in point. The mission of the U.S. Census Bureau is to serve as the nation's leading provider of quality data about its people and economy. Visualization has become an integral part of its strategy. The bureau's Data Visualization newsletter highlights tools, best practices, training opportunities, and related information.

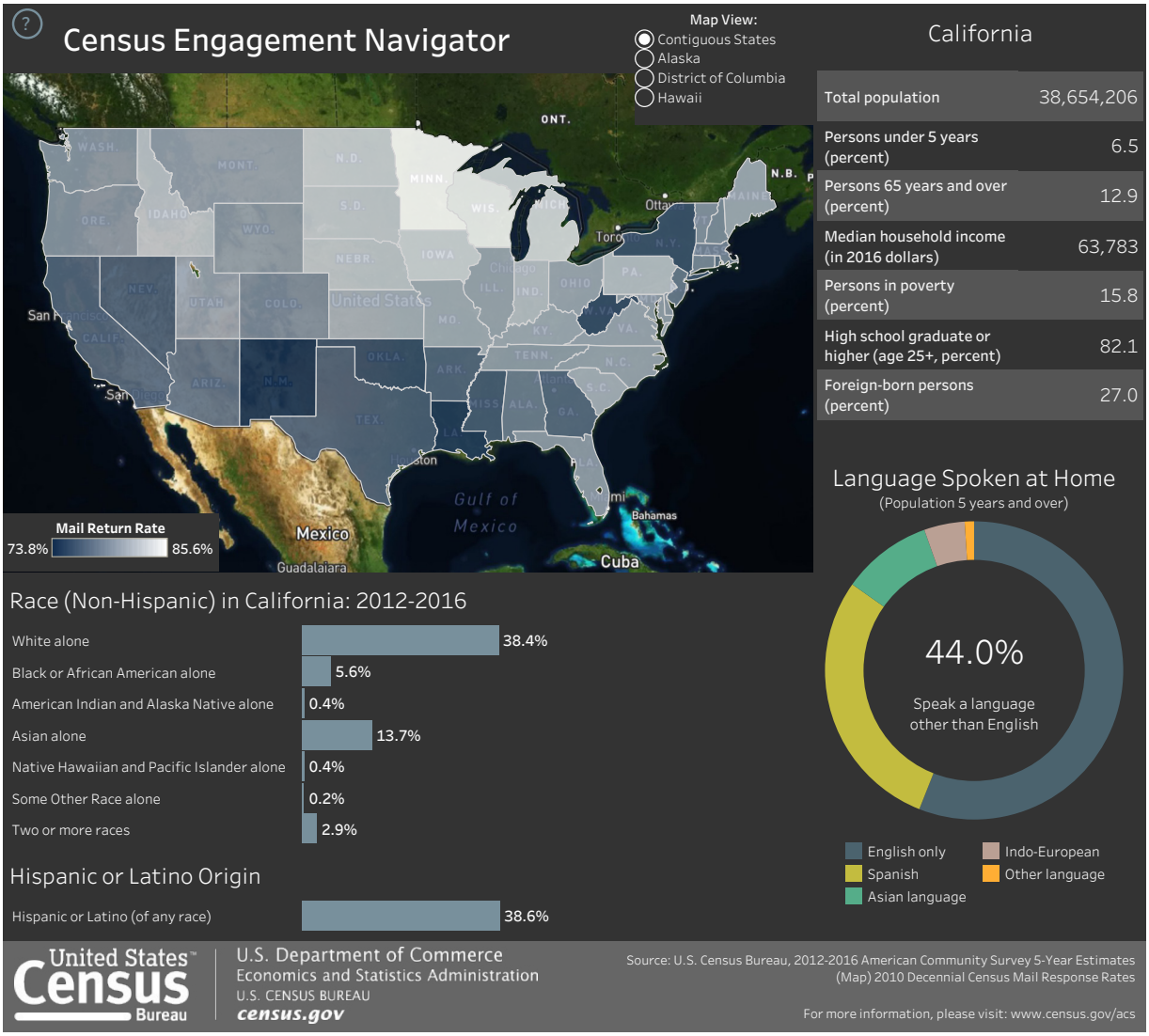

Figure 1 This interactive data visualization application allows users to quickly understand what areas of the country had high or low return rates in the 2010 census and is designed to make data more accessible to non-data experts, such as policy-makers in federal, state, and local governments.

PRACTICE 4

Cultivate collaboration

As noted above, one of the benefits of dashboards is that they provide a common starting point for discussions among different stakeholders in an organization or across different organizations.

Such discussions are much deeper and productive when everyone involved is looking at the same set of data—what is often called a single source of the truth. If people are working off their own reports, they are likely to waste time talking at cross-purposes, each person making assumptions or asking questions based on their own particular slice of data.

A single source of truth provides the foundation for collaborative decision-making. But it's also important to provide that data in a dashboard or another format that makes it easy for people both to view and interact with it—because people looking at the same set of data will have different interpretations or questions, based on their particular experience and expertise. This is especially true when dealing with projects that involve different offices or agencies or experts in the private sector or academia.

Giving people the tools to test their interpretations or to ask their questions adds to the knowledge of the larger group—and provides a more solid foundation for decision-making. Questions lead to new interpretations and even more questions. This iterative process allows a group to arrive at insights that otherwise might have been missed.

Fortunately, today's interactive dashboards enable stakeholders to perform basic analytical tasks, such as filtering views, adjusting parameters, quick calculations, and drilling down to examine underlying data—all through an intuitive user interface that requires no special expertise.

USDA leaders recognize the value of interactive dashboards. The department's Executive Dashboards "dramatically improve the speed with which key questions can be answered, down from days to hours, minutes, or even seconds," Kaouk wrote on his blog. "By promoting an interactive data culture, the project will spark USDA employees' thinking to develop innovative solutions that meet customer needs."

But this process can work in many different environments. For example, the Veterans Administration envisions providing analytic capabilities to patients, with simple smart phone or tablet apps that help them to make data-driven decisions about their own treatment. Learn more in this interview with Dr. Joseph Ronzio, the VA's Deputy Chief Health Technology Officer.

Keep in mind that the easier it is for people to collaborate, the more likely they are to take part. So, when sharing data across an agency, with external partners or with the public, keep access simple.

Browser-based dashboards are essential. With easy navigation that helps people find the dashboard they need whether they are at their desktop or on a mobile device, they can help users reach insights more quickly. Also consider posting links to dashboards on other websites, blogs and even social media—however you reach your stakeholders. For internal users, you might also embed dashboards in existing reporting tools, intranets and other internal web-based resources.

Conclusion

Leveraging data as an agency-wide, strategic asset can seem daunting, especially when decisions often involve input from stakeholders working across organizational boundaries—often stakeholders with varying levels of technical and data expertise. These four best practices will help you start on the path to making this goal a reality.

Here's the good news: success leads to more success. When people see the benefits of data-driven decision-making, they are more likely to embrace it. For example, program managers often struggle to gather data from additional stakeholders elsewhere in their own agency, in other agencies, or from private sector organizations. But history shows that when they see what can be done with their data, they are more likely to share data in the future.

This is why collaborative, data-driven decision-making is the future—not because it is a mandate, but because it works. When people can see, understand and collaborate around data, they are able to gain deeper insights and make more effective decisions. This is the future for modern government, and it begins now.

About Tableau

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