
Is Your Agency Making Data a Priority?
50%
28%
77%
govloop
alteryx



Introduction

Data-driven decision-making is a priority for government agencies at all levels. It can give them real-time insights, make predictions to improve resource allocation, help with digital transformation and improve service delivery, just to name a few benefits. It's so important, in fact, that Congress enacted the Foundations for Evidence-Based Policymaking Act in 2018 to require federal agencies to modernize data capabilities so they could enable data-driven decision-making.

But with the amount of data growing exponentially every year — and the federal government likely being one of the biggest data producer — there's a lot that goes into making all that information actionable. For instance, agencies must ensure the data they're using is free of bias and duplication, and that proper analytics are in place.

Today, trained data scientists do the bulk of that work, but to truly support data-driven decision-making, agencies must ensure that data and data tools are accessible and useful to non-data experts, too.

In this report, we look at how employees understand and use data, and the barriers they face in accessing it. To do this, we share results from a recent survey — largely of workers in the federal, state, county/local government space but also industry and defense — and insights from Andy MacIsaac, Director of Solutions Marketing, Public Sector at Alteryx, an analytics automation platform.

Please note: Because of rounding, some charts do not add up to 100%.



The Data Landscape

Government's use of data isn't new; the first U.S. census was in 1790, for example. What's emerging now, however, is the idea of data literacy beyond workers with degrees in data science, MacIsaac said.

This is evident in initiatives such as the Federal Data Strategy. Not only does it call on agencies to "effectively, routinely, transparently, and appropriately use data in policy, planning, and operations to guide decision-making," but the 2021 Action Plan states that "by the end of 2022, agencies should have a solid foundation throughout their workforce, including a minimum level of data literacy among all staff."

Several factors drive today's imperative around data, MacIsaac added: Lower computing power costs mean more power is deployed on devices, which means they can analyze increasingly more data — a good thing, since there is increasingly more data to analyze.

"There's also more demand for things like public scrutiny, more legislative scrutiny," he said. "You're creating transparency for doing what the data is telling us that we should be doing or understanding what's happening. It's good for us as citizens, it's good for government leaders, it's good for society overall."



What our survey found:

How would you describe your data expertise?



79%
I am not a data expert but can use a spreadsheet.

14%
I am a data scientist or specialist.

7%
I know nothing about how to use data.

To what extent do leaders and managers in your organization emphasize the value of using data to make decisions about operations, resources, programs or services?



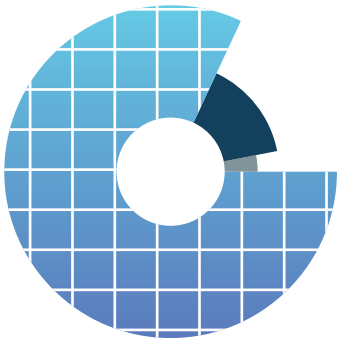
43%
It's frequently discussed.

30%
It's always top of mind.

21%
It's sometimes discussed.

6%
It's hardly discussed at all.

Do you believe that understanding how to use data effectively will help you in your career?



82%
Yes, definitely

15%
Yes, somewhat

3%
No, not really

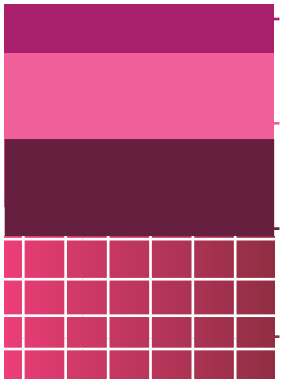
Access Denied — for Now

Despite the progress governments are making, challenges understanding, accessing and using data for evidence-based decision-making persist. That's happening for several reasons, MacIsaac said. One is technology barriers to using data. If "it's only available to people who know how to code or have specialized licenses and resources, that creates its own challenges," he said.

Cultivating a data-centric culture is another. "Make sure that [workers] understand how they can apply data to answer questions that they may have or address the challenges they might have and get them curious to look at what other sources of data can inform their decisions," MacIsaac said.

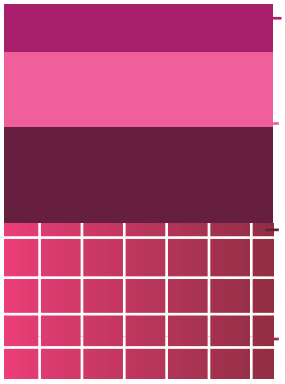
What our survey found:

Does your organization offer non-data experts training in how to use data effectively?



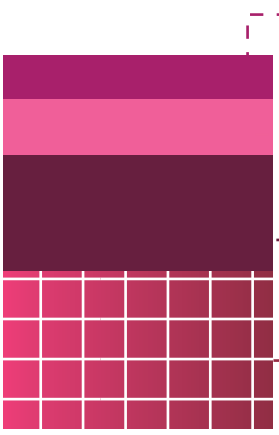
- **13%** Yes, definitely
- **23%** Yes, somewhat
- **26%** It's starting to happen
- **38%** Not at all

To what extent do your coworkers recognize the value of using data to make decisions?



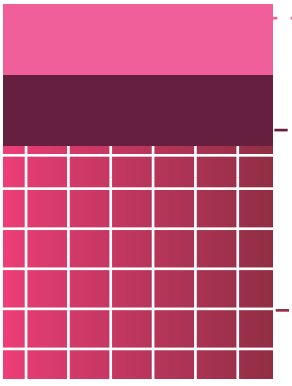
- **13%** Not so much.
- **20%** They are still learning.
- **26%** They totally get it.
- **42%** They see the value in some cases.

Do you and your coworkers have access to the data you need to do your jobs?



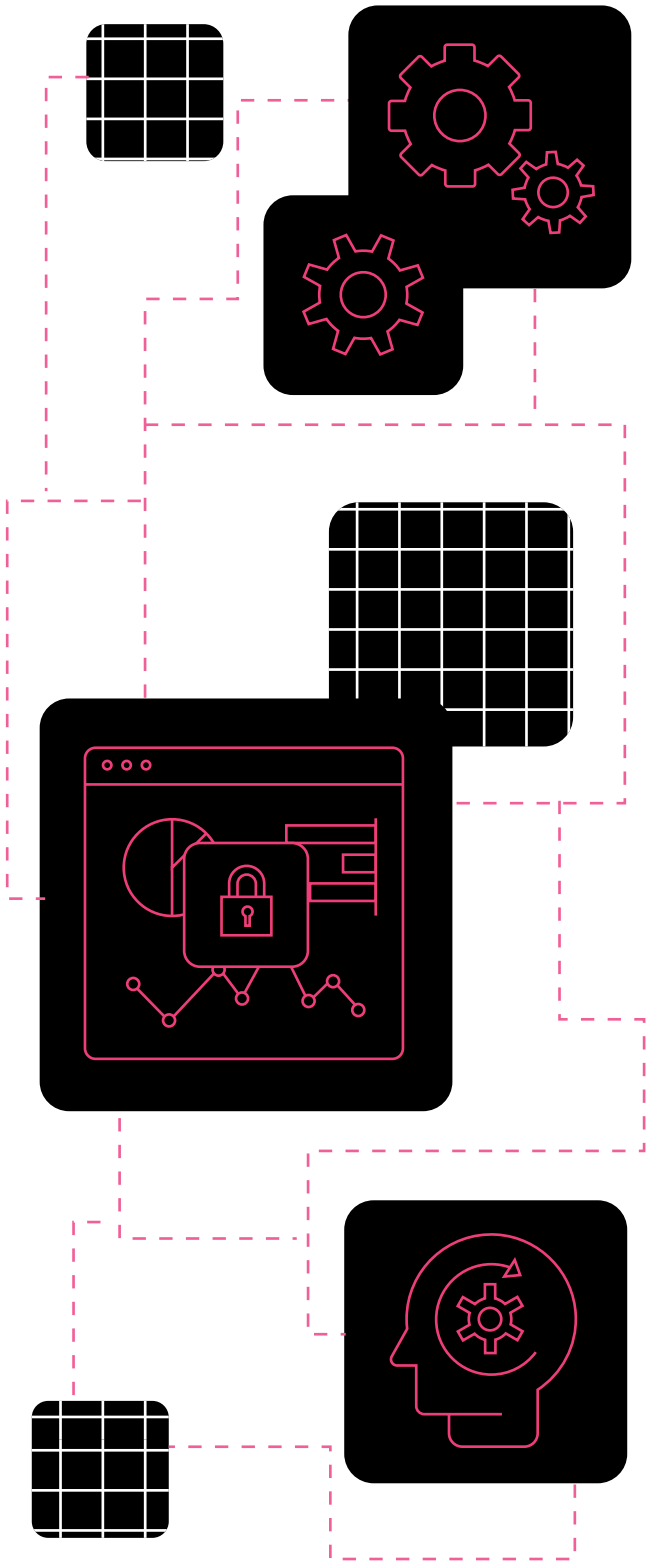
- **12%** No, we have access to a limited amount of data.
- **15%** Yes, the data we need is readily accessible in a central location.
- **31%** Yes, but the data is somewhat scattered.
- **42%** Yes, but some of the data is not easy to get to.

Do you and your coworkers have access to technology that makes it easy for non-data specialists to analyze and share data?



- **19%** Yes, our tools are easy to learn and use.
- **19%** No, our tools are geared toward data scientists and other experts.
- **62%** Yes and no. We have good tools but there is a steep learning curve.

Access Denied — for Now



See What's Possible

The data extract that the Internal Revenue Service (IRS) regularly provides South Dakota's Revenue Department has federal tax information that's used in state tax law administration. Much of the data in the extract comes from the IRS-supported Combined Federal/State Filing Program that businesses and taxpayers use to file and pay taxes. The challenge is that the file might have 8 million rows of data across 26 files, but only 80,000 rows are relevant to the state audits. It used to take weeks of parsing for the data team to get what it needed, but with Alteryx, team members can extract, transform and load data at speed. It now takes 20 minutes to run a new extract through the workflow.

Top 3 Data Challenges

1. Access to data: "There's a technology aspect to that," MacIsaac said. "Do you have a platform that unifies your approach to data, whether your data is in a data lake, a cloud source and a legacy-based system in a spreadsheet, in a PDF? Can you pull that data in? Because that data probably includes some necessary and important insights that you need in order to inform your decision."

2. Automation: "It's great that you have access to all this data, but if I still have to manually manipulate and pull all that data together, I'm still creating this burden on my limited resources" – employees, he said.

3. Upskilling: "It's great that you have the data and the technology to automate, but can your resources leverage that?" MacIsaac said. "Is it easy to use? Is the learning curve not too steep? Can I self-pace my learning and build up my skills?"

Analytics for All

There will always be a need for data and ways to use it to inform decisions, MacIsaac said, so the challenges must be addressed to support an "analytics for all" environment.

The key is using automation to leverage the technology that currently is a fence and make it a doorway. To do this, agencies need to unify their analytics process so that both input and output of data is automated. That means rather than data scientists using four to seven datasets to produce a report, frontline workers can pull the data they need from a unified platform and create reports in a wide variety of formats including PDF, spreadsheet or dashboard formats.

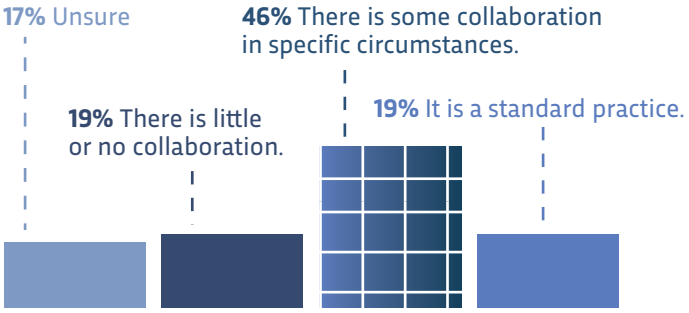
MacIsaac said workers should be able to say, "I may never be a classically trained data scientist with a Ph.D. in statistics that knows how to code, but I'm pretty good at what I do because I know what data I can leverage or need to leverage, I know what questions to ask, I have the domain expertise. Give me the tools to pull all that together, apply my data, my data literacy, my data skills and create an analysis that's really going to propel my agency forward."

See What's Possible

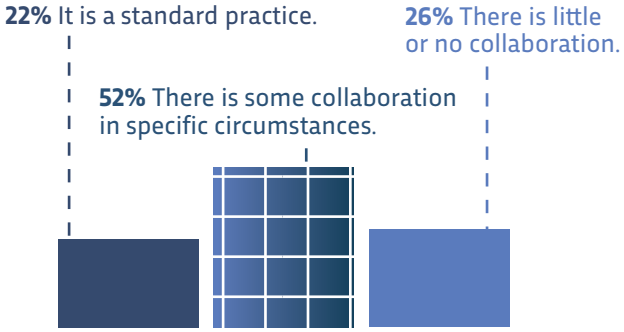
To meet an executive order requiring the transition of road vehicle fleets to zero-emission vehicles (ZEV) by 2035, the Federal Aviation Administration needed insights on vehicle type, age, garage location, and fuel and maintenance costs for a fleet of 4,500-plus vehicles. The fleet operations team had been tracking those manually, often sharing data via email and processing analysis with spreadsheets. For help, the agency turned to the Alteryx Analytics Automation Platform. The first step was integrating multiple datasets into one dashboard and then expanding the dashboard to include vehicle financial data. Analyzed data can now be published automatically to a customizable Tableau dashboard, with options to view it at national, regional or individual line of business levels. This helps the fleet team accurately report data to the administrators on the current and planned status of the ZEV initiative.

What our survey found:

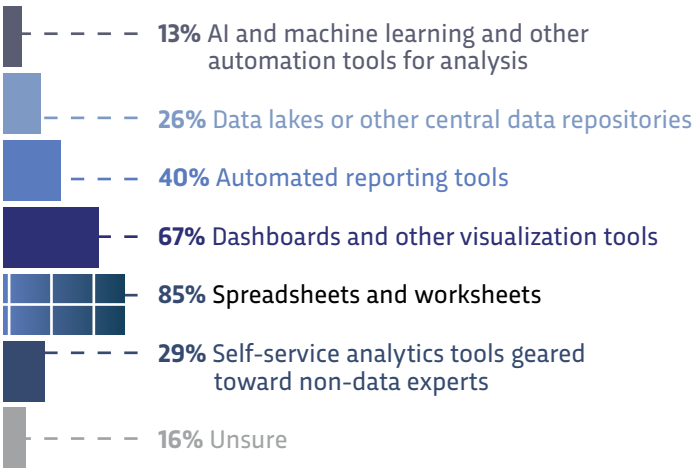
When using data to solve problems, how much collaboration is there between your organization's data scientists and employees with domain expertise?



When using data to solve problems, how much collaboration is there across the org chart, from frontline employees and program managers to leaders and executives?



What type of analytics tools does your organization provide? Check all that apply.



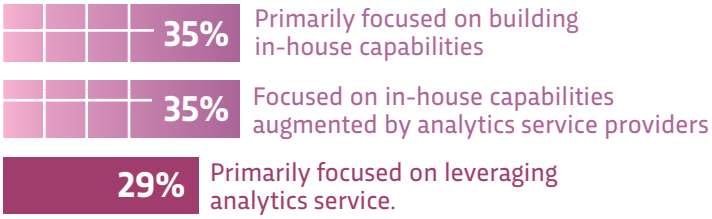
Build a Firm Foundation

Key attributes of data solutions for non-data scientists include a unified analytics platform that can do simple tasks such as automatically clean and prep data that workers select and complex ones like build self-guided predictive models, perform geospatial analysis and do natural language processing. What's more, the platform should be data-agnostic, allowing for the ingestion of all types of data formats and structures. And it should be easy to use for everyone, regardless of their data expertise.

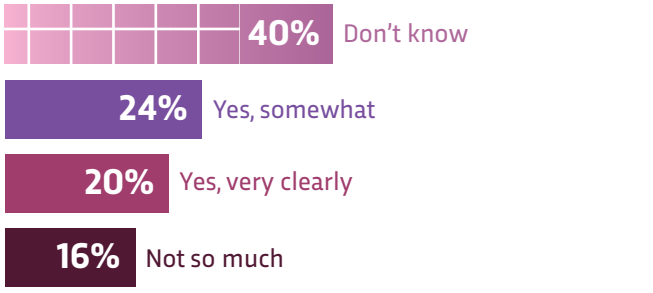
"Analytics should be a team sport," MacIsaac said. "It shouldn't be the sole domain of the classically trained data scientists. Data scientists are absolutely critical. The problem is, we don't have enough ... and you're never going to be able to hire enough data scientists to do all the analytics that your agency needs to do. So how do you how do you bring others into that process?"

What our survey found:

Is your organization building its in-house analytics capabilities or relying more on analytic service providers?



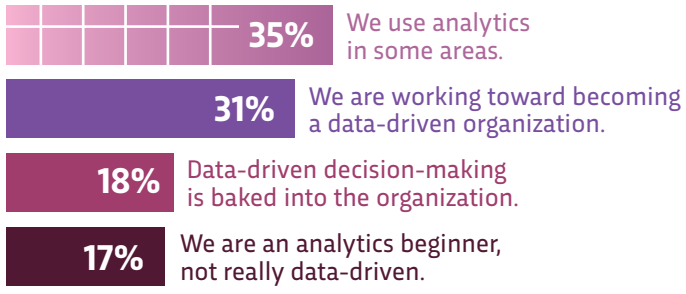
Has your organization seen a return on its investment in analytics tools, training and initiatives?



See What's Possible

Fraud, waste and abuse (FWA) of government funds for unemployment services has been rampant since the pandemic. A Midwestern state's health and human services department turned to automation to help combat the problem. It combined data from multiple business processes, including unemployment benefits enrollment, eligibility and payment processing, so that it could be analyzed for anomalies, duplication and other problems. Organizations that investigate FWA can streamline and automate labor-intensive analytics processes, eliminating thousands of hours of tedious tasks, such as conducting manual audits and analysis.

How would you describe the level of data-driven decision-making in your organization?



Put AI on Your Radar

There will always be a need for people who have data skills. But as more agencies look to use artificial intelligence (AI), things are about to get more complicated. "If you don't have the foundational data elements – good, quality data; access to usable technology [and] transparency within the analysis – AI is not going to be as wonderful as everybody says it's going to be."

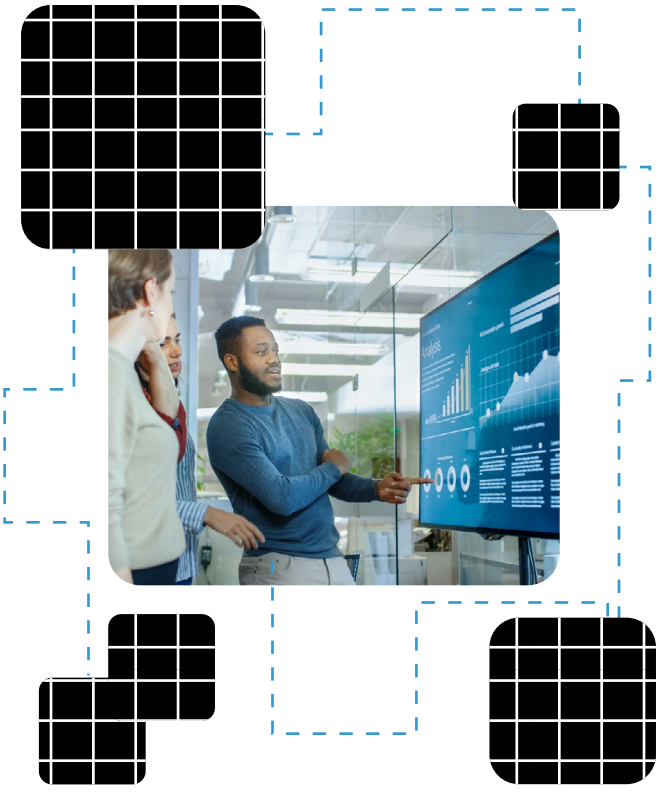
How Alteryx Helps

Alteryx provides a leading Analytics Automation Platform, a unified, self-service platform that can automate the entire analytics lifecycle, from prep and blend to modeling. It uses powerful, low-code/no-code analytics, including predictive modeling, geospatial and machine learning, and delivers end-to-end automation of data engineering, analytics, reporting, machine learning and data science processes to enable enterprises to democratize data analytics and data-driven decision-making.

"Alteryx empowers the non-data expert, the person who's not a classically trained data scientist," MacIsaac said. "We allow them to participate in the analytics process, supporting what we call analytics for all."

What's more, Alteryx's agile, unified platform can handle all analytics needs and is deployable on premises, in the cloud or in a hybrid environment.

And it will keep evolving along with governments' needs, MacIsaac said. "We're making investments in building out data literacy and building up data skills, because we know it's important ... for society overall," he said.



He pointed to Alteryx's SparkED program, which helps universities and other organizations embed data analytics skills training into their curriculums. Educators and students receive Alteryx education software, learning pathways, certification preparation and an online community for support and career networking.

Additionally, agencies can assess their analytics maturity with the Alteryx Maturity Assessment. Within minutes, agencies can see how their data and analytics capabilities compare to those of their peers and get a detailed report on how to improve.

"Data scientists are absolutely critical," MacIsaac said. But "you're never going to be able to hire enough data scientists to do all the analytics that your agency needs to do, so how do you bring others into that process and let a degree of self-service take hold, where an analyst can do whatever analytic projects they need to do?"

Conclusion

Considering that 90% of the world's data was created between 2015 and 2016, there's no chance that data generation will slow any time soon. And although the Bureau of Labor Statistics projects that the number of data scientist jobs will grow by 36% between 2021 and 2031, it's possible there won't be enough people to fill those jobs. As a result, it's imperative for government agencies to ensure that all workers – not just chief data officers (CDOs) or those in the IT department – can use technology for analytics that enable them to make evidence-based decisions.

Former NASA CDO Ron Thompson called data the "rocket fuel" that makes the agency go, and although the analogy doesn't have quite the same oomph for other agencies, the point remains, MacIsaac said: "Across almost every government agency, data is top of mind, data is the rocket fuel, data is the new oil, data is the gold. ... Every government is going to need more data skills."



About GovLoop

GovLoop's mission is to inspire public sector professionals by serving as the knowledge network for government. GovLoop connects more than 300,000 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 the public sector.

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About Alteryx

Alteryx, the Analytics Automation company, is focused on enabling every person to transform data into a breakthrough. Alteryx unifies analytics, data science and business process automation in one, end-to-end platform to accelerate digital transformation and shape the future of analytic process automation (APA™). Organizations of all sizes, all over the world, rely on Alteryx to deliver high-impact business outcomes and the rapid upskilling of their modern workforce.

For more information visit http://www.alteryx.com.