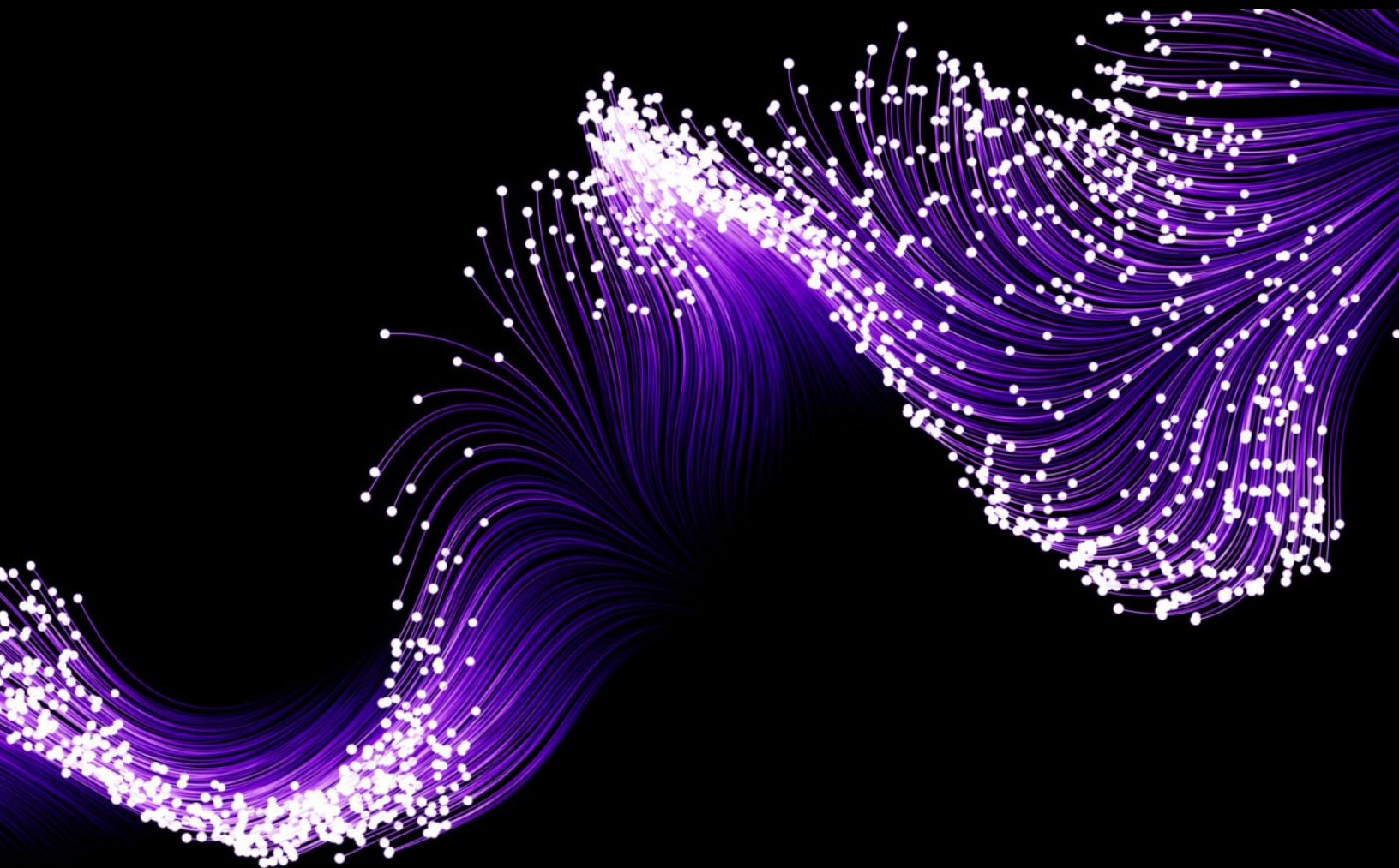




EXECUTIVE SURVEY

Agencies want data that can lead to actionable intelligence



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TABLE OF CONTENTS

The results 2

Industry perspective 9

Methodology 12

Can agencies achieve a state of data nirvana?



Data can be found quite literally everywhere across government – much of it in unstructured sources, like email messages, PDFs of reports and transcripts of video meetings. Plenty of it also exists in digital formats, tucked away in databases, data warehouses and data lakes.

But even if an agency or federal team could tap all the data its staffs crank out, it wouldn't want it all. That's the thing: You need the right data, right when you need it. It's

the only way that you can get to the desired actionable intelligence.

But how can agencies achieve that state of data nirvana? How can they gather, sort, store, access, share, analyze, distill and serve up insights at, as Defense Department leaders like to say, the speed of relevance?

Given prodding by the administration – and by the public – for agencies to make more informed decisions faster and to rely on data to improve federal services, we conducted a survey to better understand where agencies are on their journeys to use data to reimagine services, particularly public-facing functions.

Not surprisingly perhaps, the majority of the 104 respondents to our survey – which we produced for [Maximus](#) – pointed up the government's technology needs, gaps in legacy systems, sometimes questionable data hygiene and dearth of future-forward tools, like artificial intelligence and machine learning.

But what the data and anecdotal responses crystalized throughout the survey is a general consensus that the government lacks both the expertise and the training to, as one respondent noted, create a "culture of good 'analytics consumers.' "

It's also clear that agencies span from having barely begun to make extensive use of data to derive actionable intelligence to having created programs doing just that exceptionally well. The desire to use knowledge derived from data to improve is not something respondents shirked off. When asked to identify why their agencies need to make better use of data, the No. 1 goal cited? To help answer citizens' needs and address problems quicker.

The pages ahead flesh out a government in transition, working to achieve smarter, faster, better government through smarter, faster, better use of data. It's also readily apparent that this work challenges federal teams, particularly those on the front lines of conducting the government's day-to-day business.

We hope this survey report serves as a rallying cry to senior leadership that its workforce is ready to embrace a data-driven future. To do that, they'll need the people, training, tools, know-how, processes and policies. Are you listening?

Vanessa Roberts
Editor, Custom Content
Federal News Network

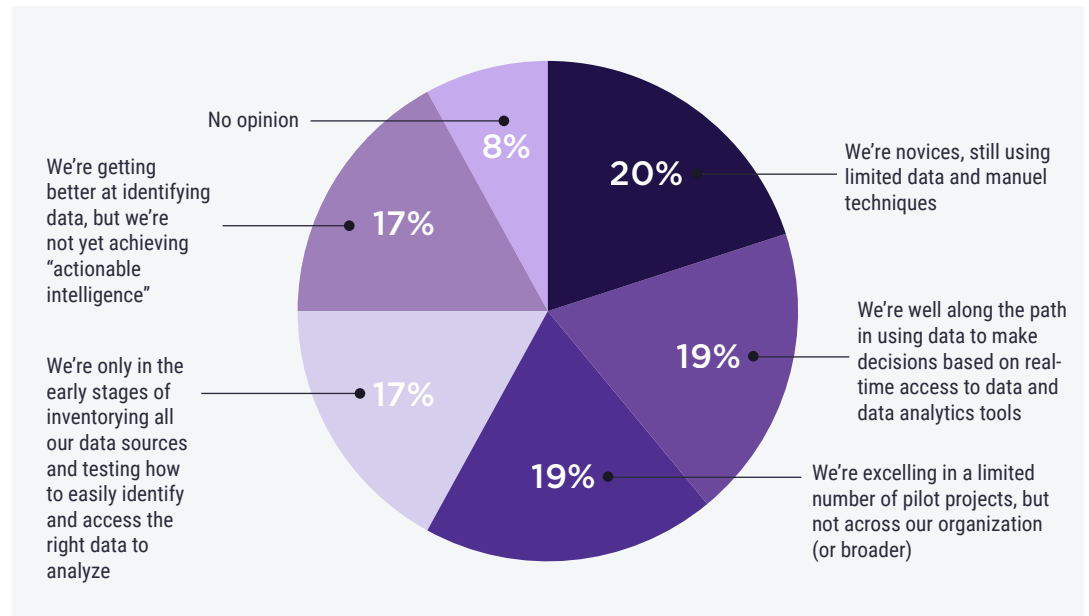


We have strength in core financial management data (accounting, contracts, grants), yet we spend so much time on compliance reporting and manual work that we never get to the more impactful and valuable strategic/operational 'actionable intelligence.'

THE RESULTS

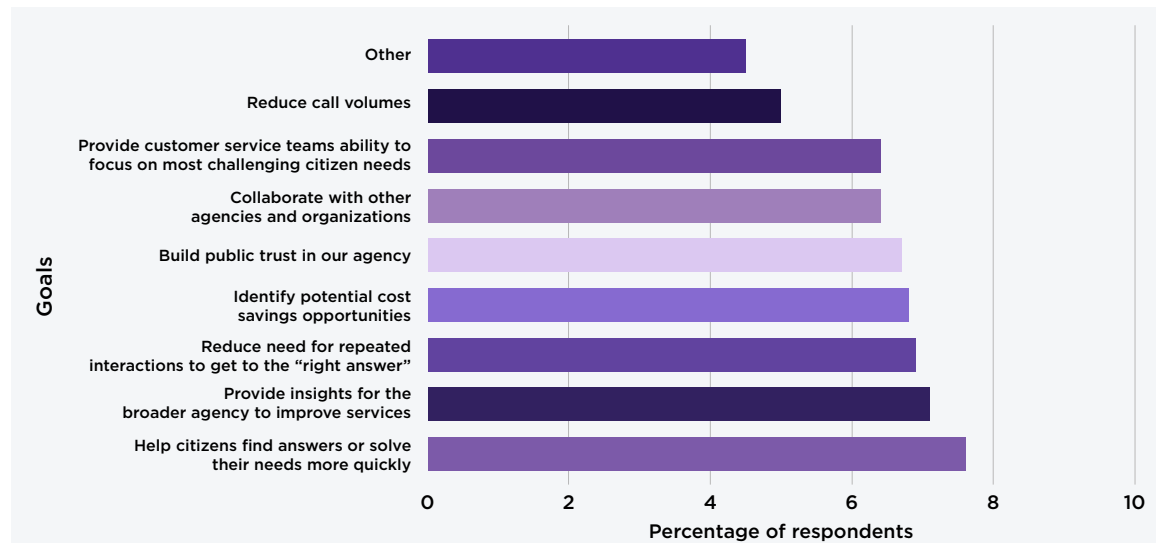
The journey toward data-driven decisions and services varies widely for agencies

"How do you view your agency's progress in leveraging the full value of data for mission, service and public good?"



Helping citizens, public find answers more quickly is the No. 1 data use goal

"What are the top three goals your agency has for using data to improve customer experience and citizen services? (rank top three choices)"*

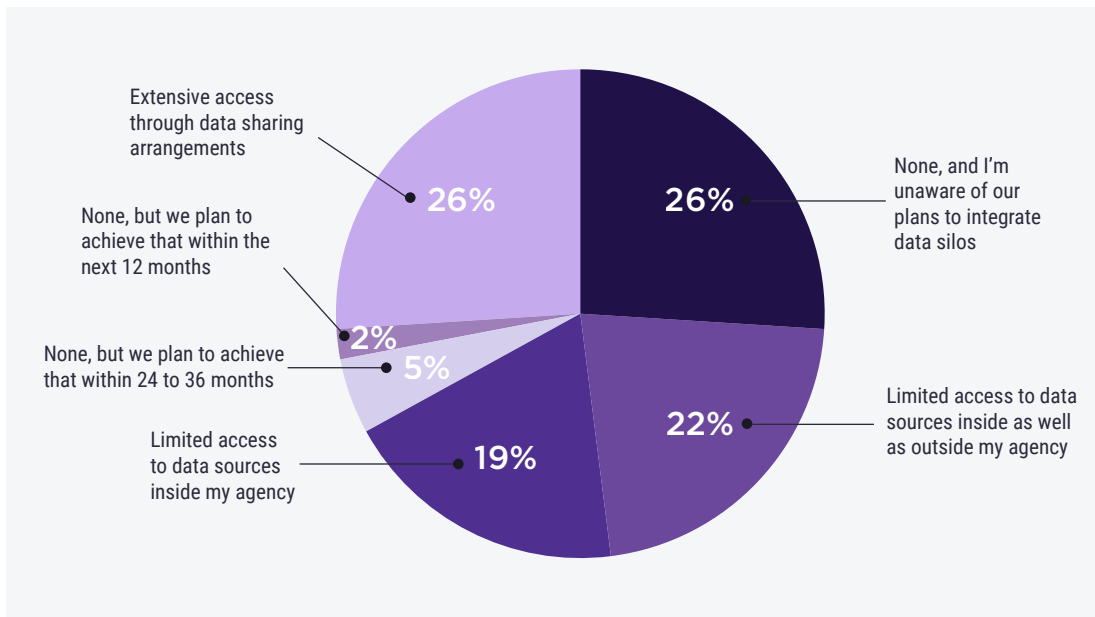




Access is only part of the equation. The data needs to be reliable and repeatable.

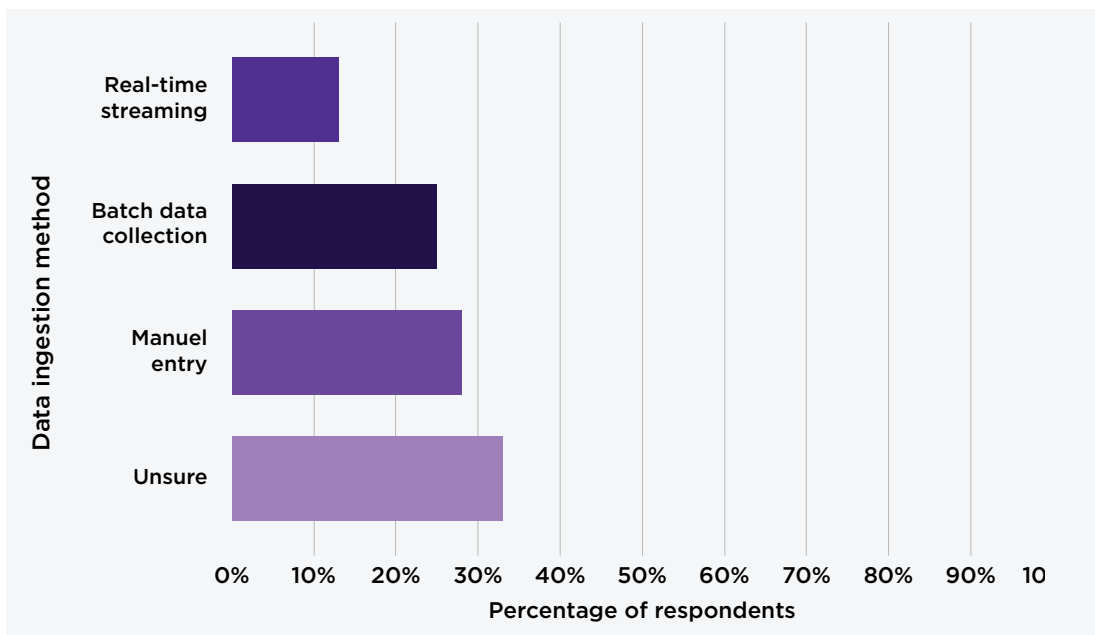
Data sharing capabilities, strategy run the gamut from none to many

“How much access to data across and beyond your agency or department do you have to improve information sharing?”



Manual data entry remains high, at nearly 30%

“How does your agency ingest data now to amass information about customer experience and your services?”

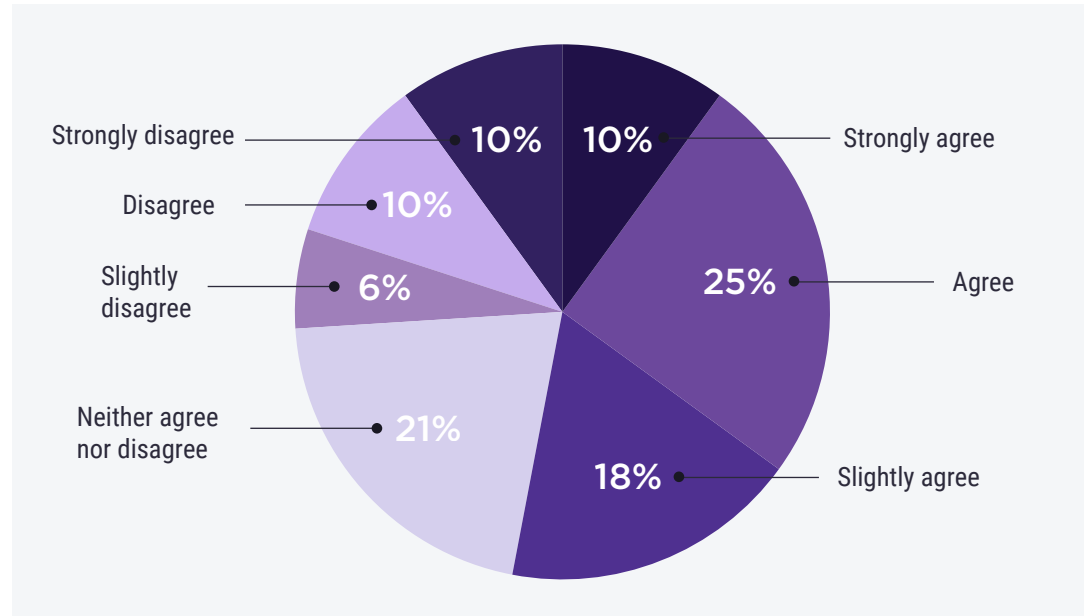




We are starting to think about the need to have a data management framework.

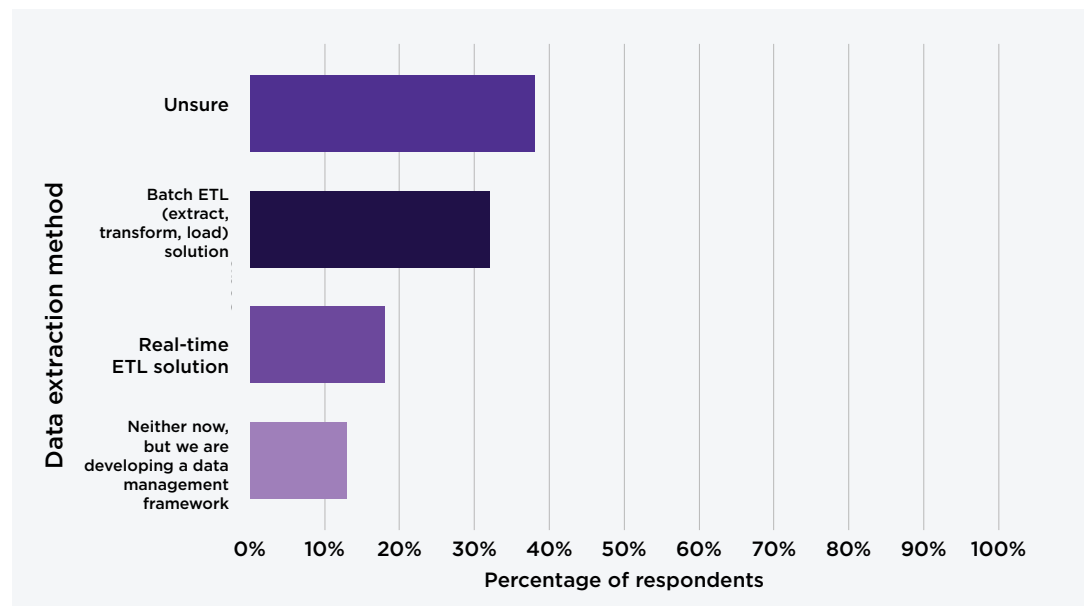
Most believe their agencies have mature data extraction capabilities

“Rate the degree to which you agree or disagree with the following statement: ‘My agency has mature tools available to extract data for preparing it for analytics.’ ”



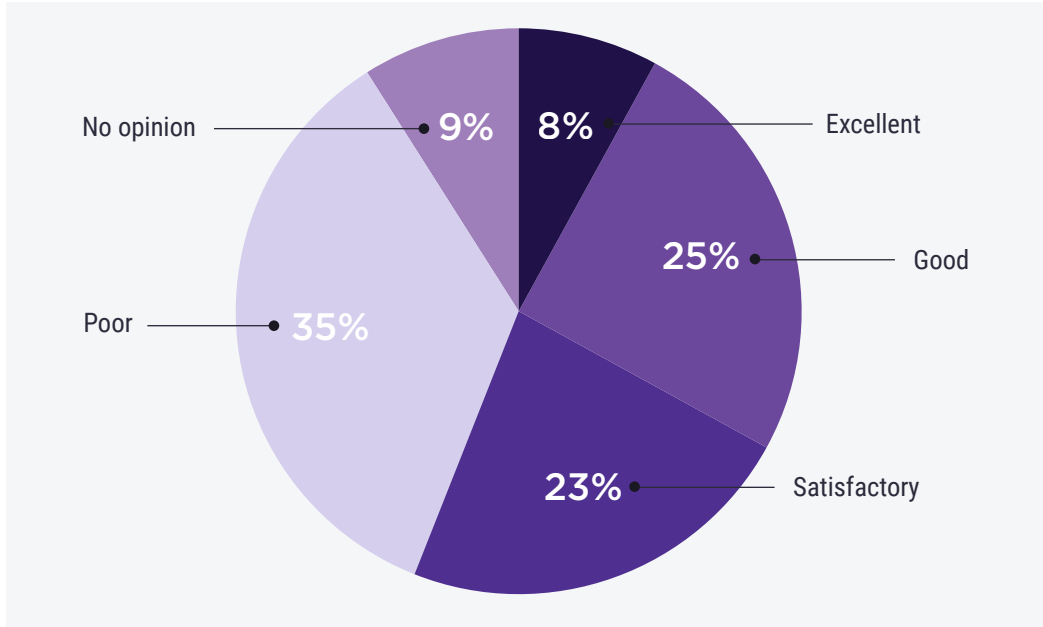
Batch and real-time ETL dominate in data extraction

“How do you extract data?”



Majority suggest that data hygiene is 'satisfactory' or 'poor'

"Based on your work, how would you rate data quality and hygiene within your agency when it comes to using data to develop analytics and gain insights?"



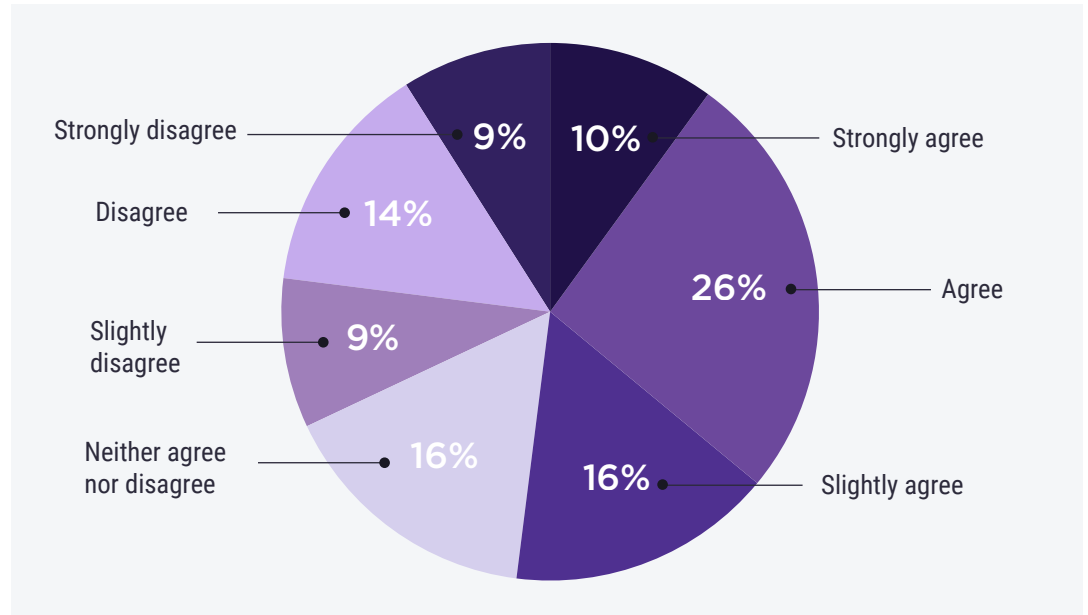
The data collection tool is fine. However, systems failures outside the data collection infrastructure create quite a bit of noise. This limits the usefulness of the data due to low confidence in the reliability.



Where we use data, we gain actionable insights. We just need to expand the practice.

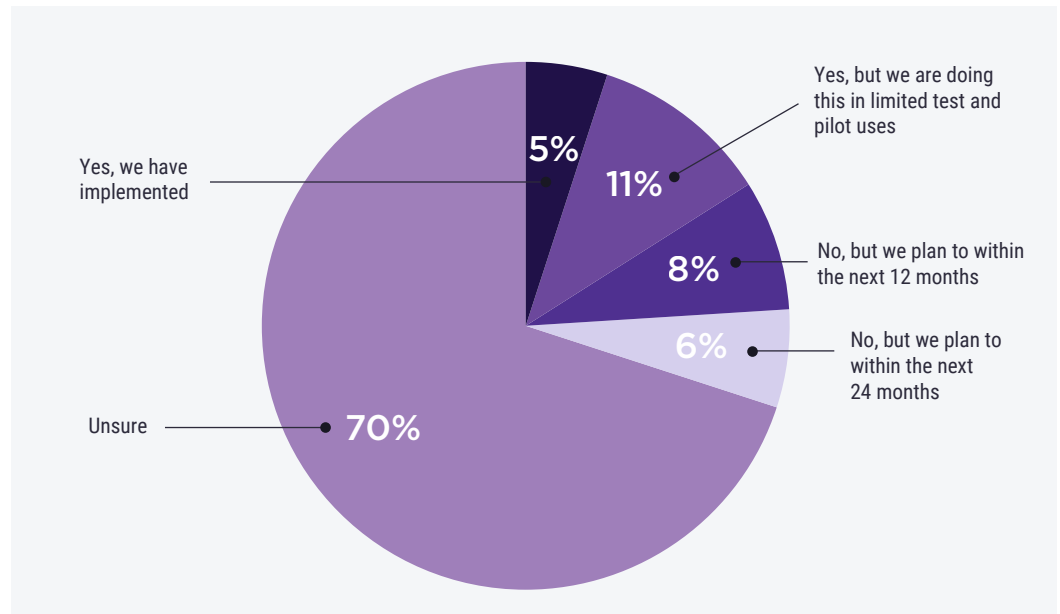
Slightly more agree they have the tools and tactics to analyze data for insights

“Rate the degree to which you agree or disagree with the following statement: ‘The tools and tactics we use to analyze data from citizens provide us actionable insights.’ ”



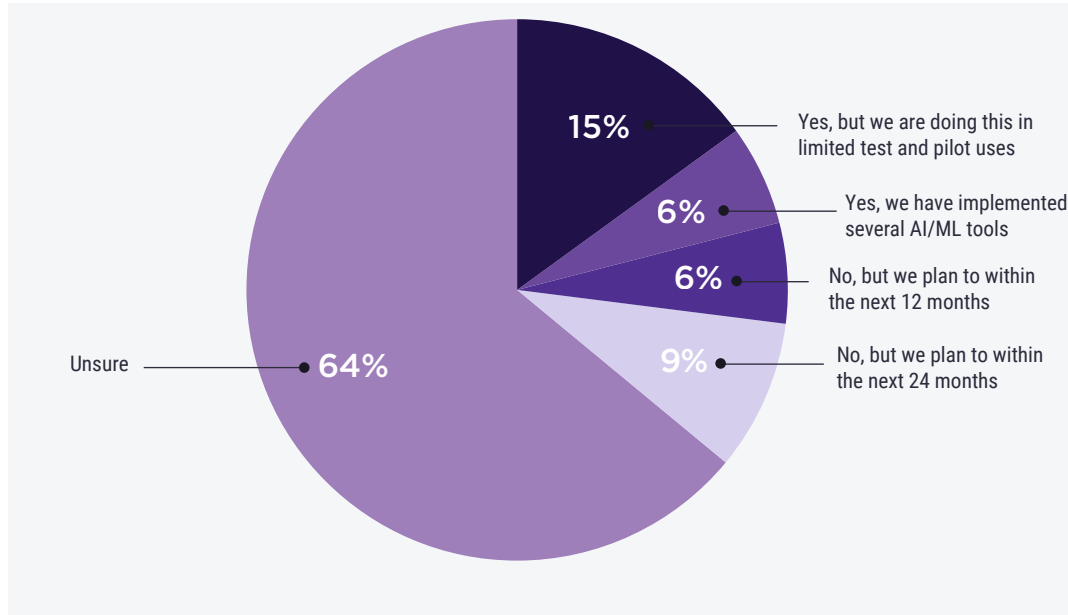
Few know if agencies are using NPL to gain access to unstructured data

“Are you using natural processing language to gather information from unstructured data for analytics?”



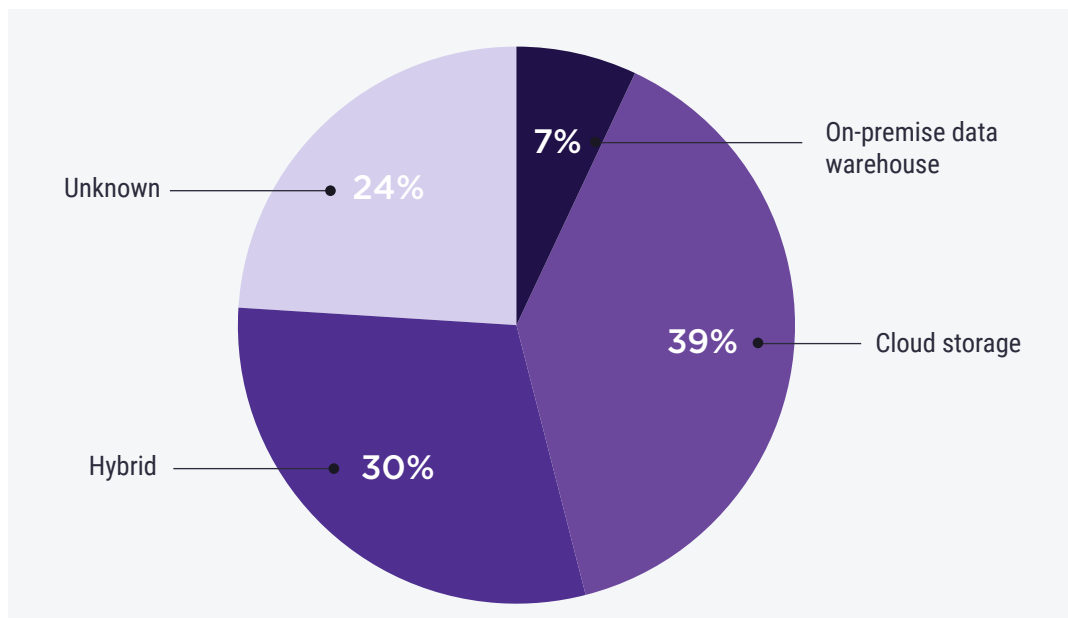
While AI/ML efforts are underway for some, most know little about whether its use is informing decisions, performance

“Are you using artificial intelligence and machine learning to help inform decisions and program performance?”



No surprise: Most organizations are storing data in the cloud

“What types of primary data storage technology is your organization or agency using?”



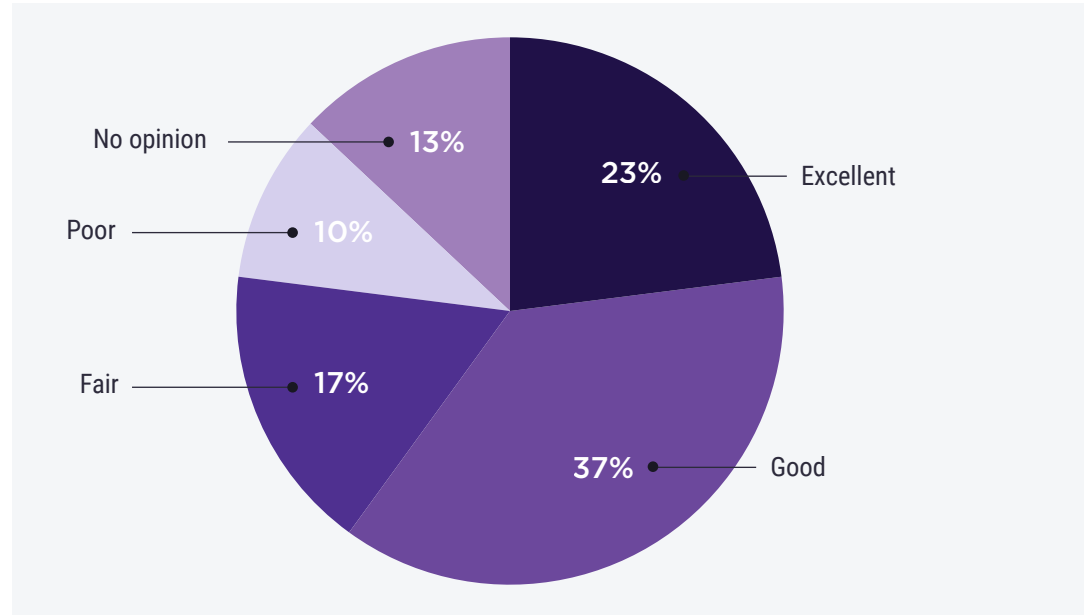
We do to some extent but are waiting for contract approvals to obtain access to an artificial intelligence program.



Some paper records are collected; a totally digital system would be more secure.

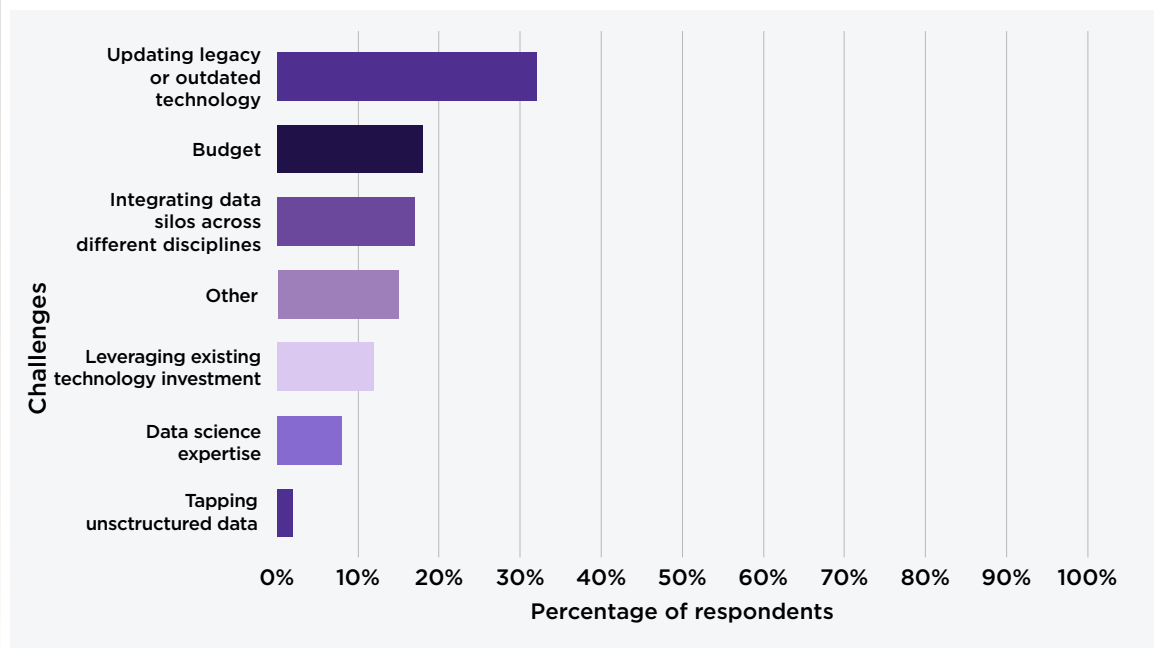
Vast majority express confidence in security of data collected by customer service centers

“How do you rate the security tools and practices that your agency uses to protect the data your customer service centers collect?”



Addressing legacy systems, technology gaps seen as chief challenge

“What are the most pressing challenges your organization faces in evolving its use of data to improve mission and service?”



INDUSTRY PERSPECTIVE

How agencies can embrace digital transformation to mature their use of data for better mission outcomes

Two of the biggest governmentwide priorities – building trust through improved customer experience and the adoption of zero trust – have something in common: They rely on agencies' ability to gather data and extract insights from it.

But a survey of 104 federal executives conducted by Federal News Network and sponsored by Maximus showed that existing infrastructures and processes for data ingestion, management and analysis requires addressing data inconsistencies. This means that agencies must ensure data completeness to achieve the high-quality data readiness necessary for reaching better outcomes.

Leveraging a secure cloud infrastructure offers the best route for agencies seeking to move toward data-driven decision-making, said Sunil Pentapati, vice president of technology strategy at [Maximus](#).

"But it's also critical to have a good roadmap for your journey," he said. That way, an agency can take advantage of a hybrid multicloud environment securely and cost-effectively, Pentapati pointed out.

But there are three key questions, he said, that agencies need to consider when developing a hybrid multicloud architecture:

- How do we manage data in the cloud?
- How do we manage the overall security?
- How do we share data with other agencies and departments?

"You need to have a that fully developed roadmap for all of this," Pentapati said.

Based on the survey data, Pentapati offered insights on ways to harness higher-quality data to inform agency decision-making and missions.

Focus 1: Enabling quicker access to data

One of the benefits of a hybrid multicloud environment is that it creates new avenues for data ingestion outside of manual entry and batch-level ingestion, Pentapati said.



Due to the cost-prohibitive nature of some of the tools and the licensing mechanisms, the teams who really need to make faster and more informed decisions don't always have access to the proper data.

– Sunil Pentapati, Vice President of Technology Strategy, Maximus

Leveraging data streaming and data pipelines has numerous benefits, including reducing manual processes, enabling real-time insights and facilitating faster decision-making.

Ingesting data from across multiple systems through the use of data streaming capabilities will build a single source of truth for analytical systems. In addition, agencies can avoid data branching and silos, which can lead to data availability, quality and hygiene issues.

But only 13% of the respondents to the survey said they currently have access to real-time streaming data. The vast majority of respondents continue to have manual entry, batch-level collection or some combination of these two older processes. And a plurality of respondents, 32%, said that legacy technology was the biggest challenge to evolving the use of data within their organizations. Budget, or lack thereof, was the next most common answer, with 17% of respondents saying it was the biggest challenge.

“Due to the cost-prohibitive nature of some of the tools and the licensing mechanisms, the teams who really need to make faster and more informed decisions don’t always have access to the proper data,” Pentapati said.

“While some agencies are leveraging modern data lakes and data warehouses for ingesting their structured and unstructured data, many times decision-makers don’t have access to this data,” he continued. “So even though agencies have the data, it’s a lack of data accessibility as well as data silos that are preventing agencies from making better decisions to achieve more effective outcomes.” One way to overcome this challenge is to ensure that the data ingestion mechanism has as many connectors as possible to all sources of data that an agency identifies, from multiple databases to legacy systems, including custom software, he advised.



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– Maximus’ Sunil Pentapati

Depending on an agency’s mission, it might need to take more specific considerations into account, like health care data sets and protocols. There may be differences in data types, like structured versus unstructured data. The data ingestion framework has to be flexible and scalable to accommodate all of an agency’s requirements, Pentapati pointed out.

Focus 2: Improving data hygiene

Another major consideration is data hygiene. Only 33% of respondents rated their agency’s data hygiene as “excellent” or “good.” He said improving data quality requires having a good data validation framework. Agencies should be mapping their data’s source systems and determining the types of data they expect to yield from these systems, he added.

But that’s getting more challenging as agencies collect more data, and databases continue to scale.

By building frameworks, agencies can review the quality of large data sets, Pentapati said. Ultimately, an agency wants to gain an understanding of the data and how it will validate its integrity, he explained.

“To tackle hygiene issues, an agency can ingest raw data into a data lake first,” he said. “Then, it can use established methodologies and technology tools to validate quality during conversion —before using analytics algorithms to draw insights.”

Focus 3: Securing data everywhere

Survey respondents felt far more optimistic about their agencies’ data security practices: about 60% rated their security tools and practices as “excellent” or “good.”

Even so, data security must remain a priority across the federal government, Pentapati said, adding that agencies must determine how to secure data both at rest and in motion. Moving to a hybrid multicloud environment can lead to a stronger security posture because there are data encryption capabilities inherent in enterprise cloud environments, he said.

For example, key management services for controlling encryption keys can be particularly useful for protecting data at rest. Plus, from a zero trust perspective, key management

can help agencies monitor who is accessing data and if users have the appropriate access privileges.

As agencies move more services and data to a hybrid multicloud, they will want to plot out a data modernization path that addresses all three focus areas, Pentapati said. “Each agency will need to set its own route. No two will be exactly the same.”

As with other technology initiatives, agencies should use a maturity model that will allow their teams to harness the full potential of agency data, he said.

“A maturity model highlights security gaps that must be addressed at every level of the model. A corresponding roadmap can help an agency resolve those gaps and improve cyber practices. Implementing a cyber framework is as critical as establishing data hygiene practices if agencies intend to continually evolve the use of data for improving federal services and affecting decision-making.”



Discover how agencies across the government are tackling digital transformation in the Federal News Network series, [Forward-Thinking Government](#), sponsored by Maximus.

THE METHODOLOGY

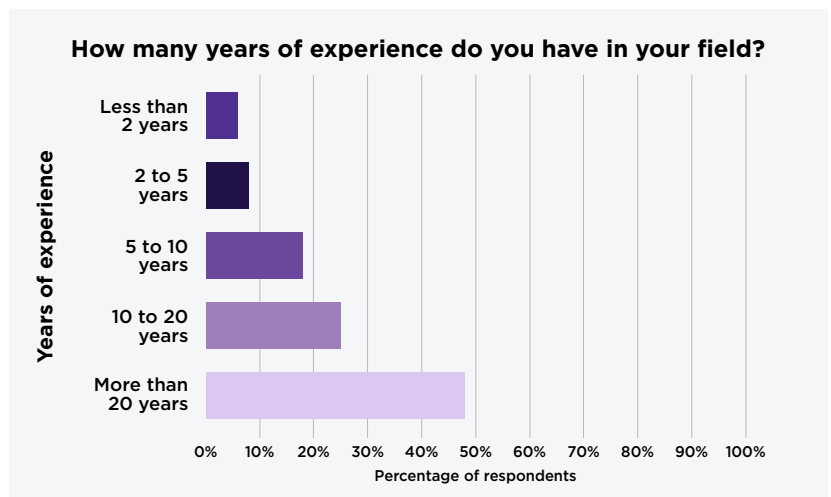
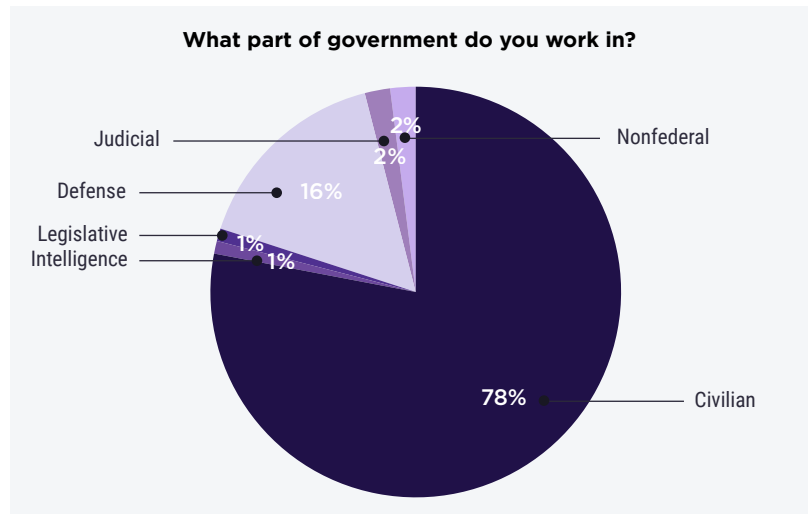
Survey details and demographics

Federal News Network produced this survey about agency data use in partnership with Maximus.

We received responses from 102 federal employees with a wide range of program management titles. The survey was open for a three-month window, from mid-November 2022 through mid-February 2023.

The goal of the survey was to better understand how agencies and organizations across the government are using – or want to use – data to gain “actionable intelligence” to help make decision-making as informed, efficient and valuable as possible.

The majority of our survey respondents, 78%, reported working in civilian agencies. Sixteen percent reported working in defense agencies. A few other people were scattered across intelligence, judicial or legislative organizations. Two self-identified as working outside the government.



Although the bulk of the respondents, nearly 75%, identified their titles as branch, division or program chiefs or directors, as well as program and project managers, there were also a sprinkling of C suite roles and a host of other titles noted by respondents.

Finally, this is a seasoned group. Fully 72% have more than 10 years of experience in their career disciplines. And while the majority, 40%, reported working across the national capital region – in Washington, D.C., Maryland or Virginia – the remainder were spread across the country, with five reporting that they work for the federal government abroad.