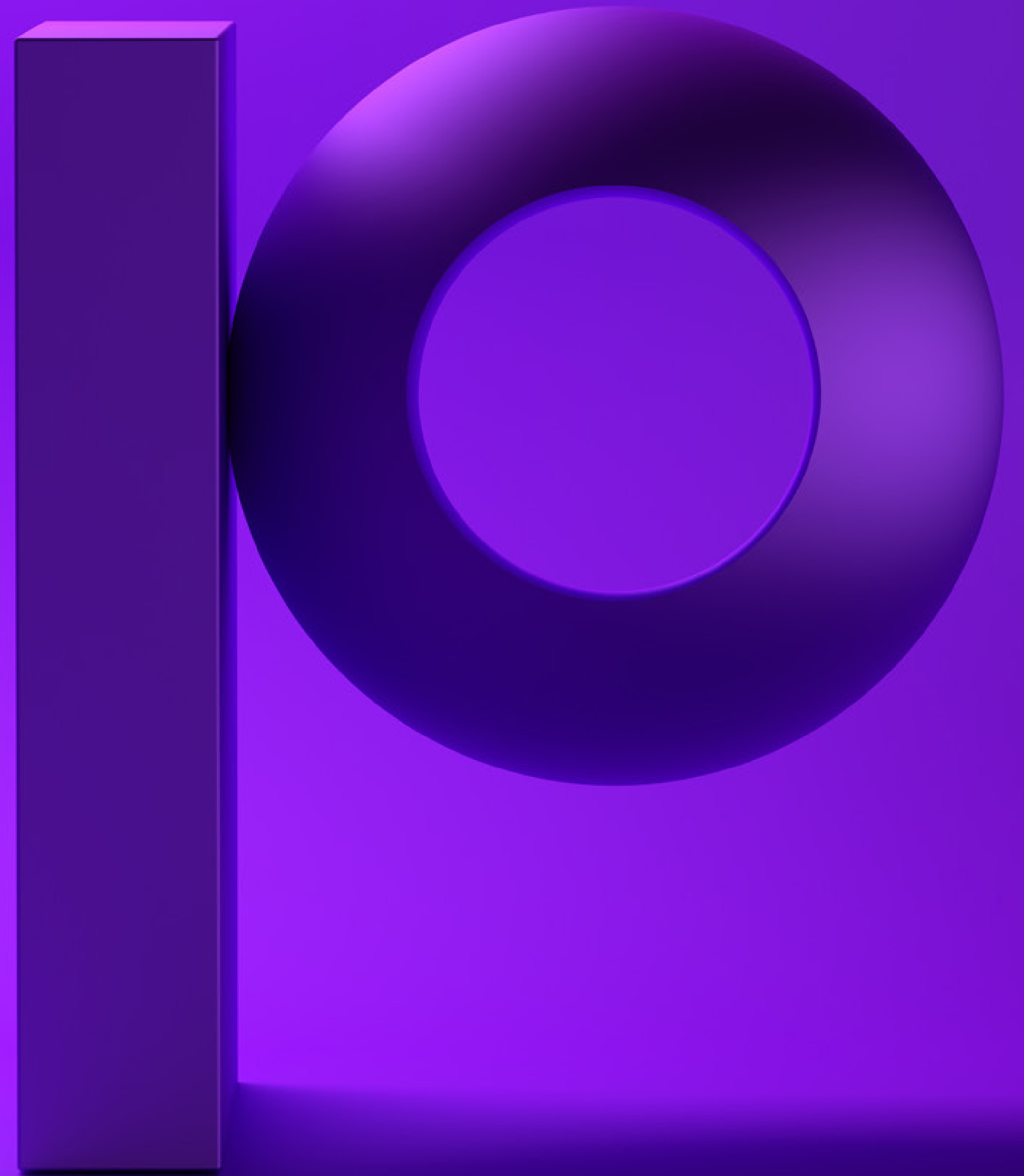


precisely

# Achieving data integrity: A guide for the government sector

Digital transformation and innovation  
depend on trusted data



# Data integrity is essential to digital transformation in the public sector

Data is the heart of digital transformations taking place across government offices, councils, agencies, and departments at all levels, from local to federal. Data provides the context for modernization of all aspects of government operations, from matching constituents with available resources and improving citizen services to streamlining day-to-day functions and increasing efficiency.

Central to realizing value from all these efforts is data integrity.

To deliver services efficiently and transparently, and to meet the expectations of citizens for modern, data-driven government operations, agencies need trusted data that is accurate, consistent, and contextual. At the same time, government data leaders recognize that clear rules are required for collecting, storing, sharing, and using the growing amount of data available.

Building data integrity is a journey. The destination is a better understanding of your constituencies and the assets you manage, improvements to the processes you follow and, ultimately, better citizen services.

The first step can be any unique and specific data-driven transformation initiative, such as:

- Digitizing manual and paper-based processes and information
- Leveraging stimulus funding for technology modernization
- Giving citizens self-service access to data and services
- Establishing cross-agency data sharing for increased efficiency
- Identifying opportunities for automation

Whether you are looking to connect and leverage data in legacy systems, achieve data visibility and consistency across applications and agencies, accelerate modernization, or find new opportunities to improve service delivery, you need data you can trust — data that is accurate, consistent, and contextual.

In this eBook, we will explore some of the key capabilities that will help you begin your data integrity journey.



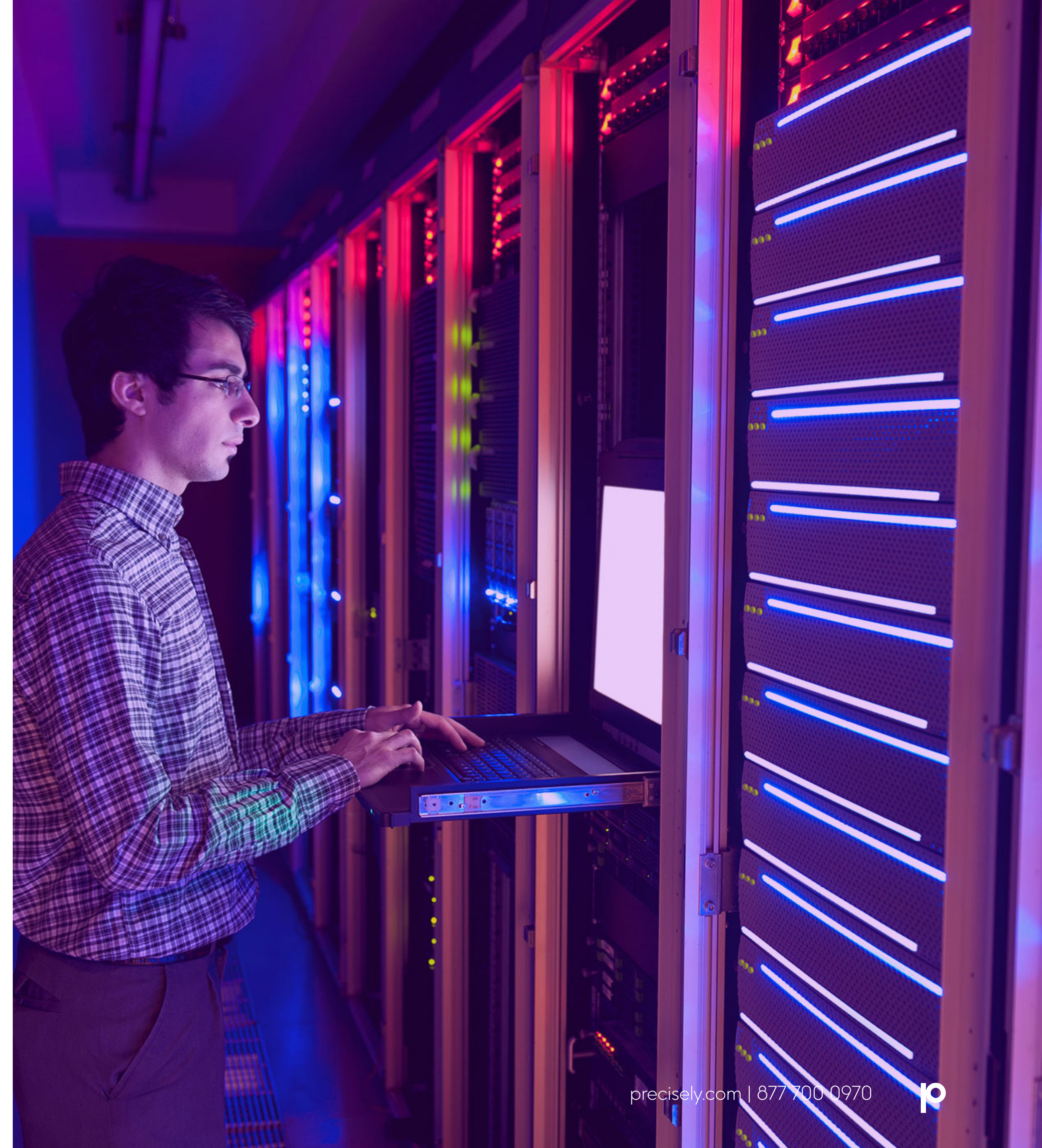
# Integrate data across silos

From [large government agencies](#) to local government departments, data exists within organizational silos and in many different formats. Moreover, much data for government operations still resides in legacy applications running on mainframes. This state of affairs stands squarely in the way of digital transformation.

Connecting data across silos and platforms, from legacy to modern cloud-based data platforms, unlocks significant value for government operations and citizens alike. In creating an integrated data pipeline, you can:

- Gain a [360° view](#) of the citizens you interact with, the resources you protect, the businesses and sectors you regulate, and the initiatives you pursue to improve constituent services
- Extend the value of legacy systems while making operational data available for new data-driven initiatives like citizen self-service
- Unify departments so everyone works together and makes decisions using consistent information
- Leverage modern cloud-based platforms to streamline processes and reduce costs, while running workloads where your data lives — on-premises, public cloud, private cloud, or any hybrid environment

With data integration, you are ready to innovate. You can power the next generation of digital services with mobile apps that reflect real-time mainframe data. Provide virtual access to government services, making life easier for your digital-savvy constituents. Make policies based on data you can trust.



# Govern data for better decisions and stronger data protection

Government agencies today are placing increasing importance on data governance. Why? Because they have volumes of data that they can use to make better decisions and improve the delivery of public services. But in order to do this, agencies must also keep a close eye on data privacy and protection. Gaps in data governance can lead to exposure of sensitive data and personally identifiable information (PII).

[Smart data governance strategies](#) help you discover and understand your data's meaning, lineage, and relationships for more advanced analytical insights and better decision-making, with processes in place to ensure data privacy. What's more, through shared data catalogs, data governance can also provide the bridge between government agencies to enable municipal-, state-, or federal-level sharing of data assets. Industry-leading data governance strategies help to:

- **Effectively unlock the potential of data.** Agencies and divisions trying to gain operational value from data across data warehouses, data lakes, or legacy applications typically first need to improve data governance. If data is not properly cataloged, metadata will quickly become unorganized and difficult to locate and understand. A strong data governance framework will enable metadata to be dynamically captured and curated, keeping that information easily searchable and up to date.

- **Ensure data is easily understood and trusted.** Users typically spend too much time searching for the right information and questioning whether data can be trusted. Data governance provides operational and technical asset definitions, ownership, and data lineage to give context to the assets that are being used. Additionally, a data governance solution that provides visibility into data quality rules and scores of data assets will increase the confidence and trust of the data.
- **Ensure accessibility with privacy.** Discovering and understanding the right assets is critical, but you must enforce accessibility rules to ensure that sensitive data and citizen privacy are protected and access and use conform to internal regulations. Best-in-class governance tools must also include an auditable workflow process that documents requests for access and edits through approved owners and processes.

Building a solid framework for data governance is only valuable if you can track and monitor permissions, changes, and requests. Collaboration is key, and a [no-code workflow](#) makes it easy and streamlined.



# Data quality and your digital success

Data quality takes on heightened importance as government agencies **strive to become citizen-centric** across internal operations as well as the delivery of services. Inaccurate, incomplete, and unavailable data diminishes the quality of your constituents' experiences, leads to poor decision-making, hinders operational efficiency, and risks regulatory compliance issues.

Moreover, data quality becomes even more important — and challenging — when you're working on open data initiatives across increasing volumes of information.

The volume of data that a government organization at any level must manage continues to grow, often exponentially. It comes from multiple sources, both public and private. You need a data quality solution that's flexible and scalable enough to keep up in real time with data quality checks, validation with existing datasets, and complex reconciliations to ensure that no data is lost or transformed incorrectly.

Managing data quality across all levels of government operations leads to increased accuracy in the delivery of citizen services and reporting on data findings — helping build citizen trust in government.

## Data Quality Case Study

# Improving data quality helps agency reduce financial risk

The Belgian National Social Security Office (NSSO) is charged with monitoring the financial health of national and global companies that have active employees in Belgium and thus are required to make contributions to the social security system.

Data quality issues interfered with the agency's ability to accurately identify companies falling short of standards and indications of fraudulent activity. They included lack of standardized registration numbers for EU companies, missing documentation, overloaded and missing data fields, inconsistencies across multiple data sources, and an inability to enforce business rules.

Smals, the NSSO's government-controlled IT service provider, engaged a local Precisely partner to implement the Precisely data quality solution within NSSO's application databases and data warehouse. In a series of re-engineering and migration projects, the Precisely solution was used to profile, cleanse, and match data sets. The improved entity resolution and fuzzy matching yielded more accurate risk models and fraud predictions as well as a 10X improvement in data migration productivity.

[Download the case study](#)

# Add critical context with location insights and data enrichment

Location intelligence and data enrichment are key components of data integrity. Together, they add context to your data, increasing its completeness, boosting its value — and providing a significant advantage for government agencies looking to increase utilization of big data.

Accurate, consistent, and contextualized data enables faster, more confident decisions that produce stronger outcomes and fundamentally improve the lives of constituents. Plus, enriching constituent data opens the way to a range of opportunities based on new insights, from personalizing interactions to reducing fraud and abuse.

## **Location intelligence starts with geo addressing**

It's in the very nature of many local, state, and federal agencies to work with addresses. They belong to constituents, customers, taxpayers, businesses, patients, and clients as well as the properties in your jurisdiction or service area.

Geo addressing ensures the accuracy and consistency required to use addresses as a foundation for establishing a 360o view of constituents. Addresses are also a key data element for uncovering fraud and abuse in government services, and in improving disaster preparedness and emergency response.

These addresses exist in your core applications and systems of record. Ensuring that they are correct and consistent across your multiple datasets and those of your peer agencies is a critical component of data integrity — but it's one of those things that are harder to do than it may appear.

While there is a wide range of products on the market that can verify addresses, they are not all created equal. That's why having the most complete and accurate address reference dataset along with best-in-class parsing and matching algorithms makes a big difference.

Geo addressing also attaches latitude and longitude coordinates to each address, using a process called geocoding. It works in reverse as well. Hyper-accurate geocoding is vital to the government. You need to know exactly where a property is located to place it within service boundaries or, for example, to identify its flood zone based on distance from water.



# Unlock hidden insights with spatial analytics

Location is prevalent in our everyday lives. Whether it is our mobile phone's mapping application or our fitness trackers, we use location today without even thinking about it. The need to accurately understand "where" is fundamental to the delivery of many government services.

However, while using location may be expected, working with geospatial data is tricky. It requires a unique set of spatial analytic capabilities that may be hard to come by. While it can be hard to access, interpret, and deliver spatial information, that doesn't mean you should miss out on key insights to inform planning and policy making. Moreover, there's just no replacement for spatial analytics when you want to:

- Understand where service delivery points such as offices or clinics are in relation to where your constituents live
- Plan public transportation improvements in relation to changes in ridership and population
- Visualize the boundaries of a catchment area in relation to the neighborhoods covered by specific services

# Use mapping and context to provide fair and equitable broadband access

In the digital era, internet access is no longer a "nice to have." It's critical for gaining access to citizen services as well as online schooling, telemedicine, and work from home opportunities. While the number of citizens with access to computers and the internet continues to grow, so does the digital divide.

State and local governments are actively pursuing **federal funding programs** to extend internet access to unserved and underserved communities. Broadband mapping is crucial to this effort, but it's often fueled by poor quality data.

To really provide fair and equitable broadband access, you need data with integrity and context, enabling you to build a comprehensive view of populace and properties. This starts with accurate geo addressing for high-precision locations of each building and data enrichment for accurate identification of serviceable locations.

The goal is to extend broadband to all serviceable locations, even when they are located within multi-dwelling or multi-tenant units, so you can make internet access available to every constituent.

# Add context to analytics, planning and decision-making with data enrichment

Accurate addressing and rooftop-level geocoding resolution are the first steps toward enriching data with an array of location-based variables. That, in turn, drives better planning and decisions based on a substantially richer understanding of your constituency.

For local governments, an enriched view of your constituents affords you the opportunity to improve engagement by targeting citizens with messages personally relevant to them. Information about local school issues will be most relevant to families with children, for example, while news about senior center activities is only of interest to your elderly population and their caregivers.

For state and local governments, data enrichment combines the internal information you already have about your citizens with curated data from trusted external sources. The same holds true for properties.

This opens the door to a world of new insights because it sheds light on details about:

- The demographic makeup of your communities
- The geographic dispersion of citizens
- Land use patterns and changes over time
- Traffic patterns and congestion bottlenecks
- The movement of populations over time

Data enrichment also provides the scale and depth of data you need for advanced analytics, including predictive analytics based on detecting patterns in big data. Feeding this information into analytics can help you predict citizen needs, plan for service delivery, and improve asset management with predictive maintenance programs. Big data and analytics can also help reduce crime, increase policing and emergency response effectiveness, accelerate emergency planning, and put a stop to program fraud, waste, and abuse.





# Ensure that data is fit for purpose

There are many options in the marketplace for enrichment data, from open data sources to third-party data providers. However, ensuring that this data is “fit for purpose” is difficult. It requires clear metrics for measuring and tracking whether the data is meeting your needs. Here are [five criteria](#) you can use as a framework, whether you are evaluating your own data or data from a third-party provider:

- **Coverage.** Examine the geographic areas for which the data is available. Are the areas granular enough to answer the questions your organization is asking? Is the data consistent and comprehensive for low-density as well as high-density neighborhoods? For small towns as well as major cities?
- **Completeness.** Each dataset contains many fields. Consider the fill rate of the entire dataset. The more fields left blank or containing null values, the less valuable the data.
- **Accuracy.** How accurate is the data, and how will you know? Statistical sampling of large datasets, yours or a third party’s, enables you to cross-check sampled data with authoritative information. This can help you determine the error rates of each dataset.
- **Currency.** Determine how frequently a dataset is updated and whether that schedule meets your needs. For third-party data, ask how long it takes for datasets to reflect real-world changes. For example, you might want to ask how long after a major storm are aerial photos of affected areas available? Or if a developer builds 20 townhomes on previously empty land, how long does it take for this updated information to reach your dataset?
- **Consistency.** Making your data input, extraction, and analytics processes as consistent as possible is key to ensuring that your data itself also remains consistent. Consistent procedures are based on clearly documented steps that everyone follows. Creating and enforcing procedural rules for handling data will do much to help avoid common data quality problems.



# Why Precisely?

Precisely is a global leader in data integrity, ensuring accuracy and consistency in data for local, state, and national government agencies in countries around the world. These government bodies rely on Precisely to deliver data that is accurate and consistent for use across departments, divisions, and operations, with context needed to power better decisions for better constituent outcomes.

## Build trust in data with the Precisely Data Integrity Suite

The [Precisely Data Integrity Suite](#) is a set of seven interoperable modules that enable your organization to build trust in your data. Data with integrity has maximum accuracy, consistency, and context — empowering you to craft informed policies and deliver the right services to the right people and businesses, while empowering citizens and workers to get timely, accurate answers when they need them.

**precisely**  
**Data Integrity Suite** 





- **Data Integration.** Build resilient, high-performance data pipelines that connect your critical systems and data to modern data platforms — your key to continued innovation and operational advancements. Easily create streaming data pipelines that integrate complex data from legacy systems, like mainframe, IBM i, or relational databases, with modern cloud-based data platforms like Kafka, Snowflake, and Databricks.



- **Data Observability.** Proactively monitor and manage the health of your data. Machine learning intelligence continuously monitors the patterns in your data and immediately alerts you of anomalies, so you can avoid costly downstream issues and unexpected disruptions. By proactively monitoring and analyzing your data for adverse events — and alerting those who need to resolve issues — you can be assured of healthier data pipelines, more productive teams, and happier constituents.



- **Data Governance.** A strong data governance framework ensures that you can easily find, understand, trust, and leverage critical data across your organization and produce more accurate, informed decisions and reporting. With the Data Governance module, achieve the confidence you need in the meaning, quality, value, and trustworthiness of your data. Global metadata management capabilities enable you to automate governance and stewardship tasks and answer essential questions about your data usage, impact, and lineage.



- **Data Quality.** Delivering data that's accurate, consistent, and fit for purpose across your applications and databases is simplified and streamlined with the Data Quality module. With the ability to execute natively in cloud environments, this solution provides organization-wide scalability, a visual user environment, and intelligent guidance.



- **Geo Addressing.** Precisely geo addressing combines address matching with geocoding to provide a clean, accurate address along with building- or unit-level latitudinal and longitudinal coordinates for every property in our global reference database. Geo addressing also assigns a PreciselyID to each location. The PreciselyID helps make data enrichment easier by providing a unique and persistent identifier attached to a property's address.



- **Spatial Analytics.** Spatial analytics can be integrated into any workflow and customized to drive more efficient and enlightened decisions. Leveraging open data standards, interoperability, and scalability, Precisely solutions make it easy to activate geospatial data for your unique needs and reveal actionable insights, driving superior outcomes.



- **Data Enrichment.** The PreciselyID enables fast and easy data enrichment from Precisely's catalog of more than 9000 attributes in over 400 datasets, providing deeper insights for more informed decisions. These data sets include postal code boundaries, census information, world boundaries, world points of interest, building attributes, geodemographics, weather data, and boundaries for flood, fire, and other risks.

# Not sure where to begin your data integrity journey?

[Precisely Strategic Services](#) can provide a broad range of consultative services tailored to helping you identify data challenges, prioritize your needs, and implement initiatives. This allows you to multiply the value of your data assets. We can help you:

- Define an operational or aspirational initiative related to data integrity
- Design a data program that aligns with your performance and service delivery goals
- Provide strategic guidance and operational support to drive your project over the finish line

As public sector organizations build and refine data management programs, they can derive significant benefit from expert evaluation and advice. Our data principals have deep experience at all levels of government as well as domain expertise to help you derive the maximum value from data.

## Learn more

Data integrity can help your organization keep pace with the fast-changing world. Start improving your data today.

[Learn more about Precisely government solutions](#)



Precisely is the global leader in data integrity, providing accuracy and consistency in data for 12,000 customers in more than 100 countries, including 99 of the Fortune 100. Precisely's data integration, data quality, data governance, location intelligence, and data enrichment products power better business decisions to create better outcomes. Learn more at [www.precisely.com](http://www.precisely.com).

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