



Informatica®

Data Management Mandates for Federal Agencies

Complying with the Foundations for Evidence-Based Policymaking Act

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Introduction

Developing an Effective Federal Data Strategy

Developing an Effective Federal Data Strategy

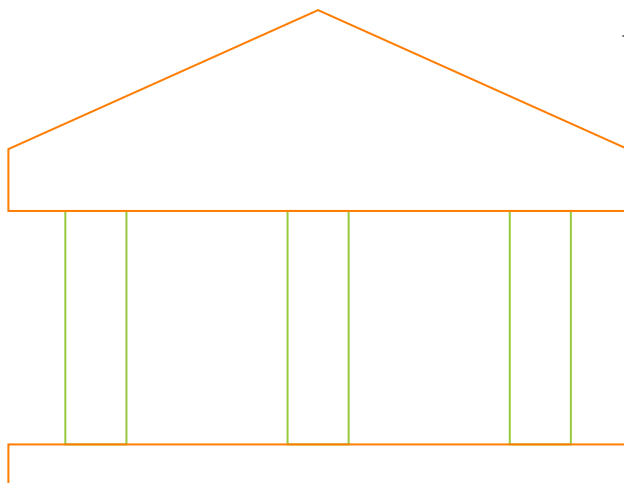
U.S. federal agencies are implementing requirements for the Foundations for Evidence-Based Policymaking Act, which went into effect in 2019. A comprehensive data reform mandate, the Act aims to empower federal agencies, government officials, and constituents with better access to high-quality data – data that can inform government policies, spending, and decisions.

The new mandate promotes data accessibility through the OPEN Data Act, and it enables responsible data use through confidentiality and security provisions. The Act requires agencies to develop and implement a comprehensive data cataloging and governance strategy that accounts for all data assets and related metadata. It also stipulates guidelines for protecting and securing sensitive data while establishing processes for making non-classified information readily available to the public.

Meeting these mandates is a multi-year process that requires a clear, well-developed plan. How should your agency begin in the journey toward compliance?

To help organizations improve their use of data as a strategic asset, the government published a [Federal Data Strategy](#) that offers 10 guiding principles for agencies and 40 steps on leveraging the value of data. More recently, the government released its year-one action plan, 20 steps that agencies must address in the next 12 months. Action plans for subsequent years are expected.

This eBook examines the data management issues that chief data officers (CDOs) and chief information officers should be prepared to address so they can meet the requirements of the year-one action plan and set the conditions for future plan success. It proposes a list of actionable competencies you should invest in and considers potential barriers to success. Finally, it presents several success stories from agencies that have already begun to build their federal data strategy.



Developing an Effective Federal Data Strategy

“Data is the life-blood of our democracy—whether it’s for transparency, for evidence, for management decision-making. But it’s also the growth engine of our economy in the 21st-century. As such, it’s a strategic asset and the U.S. government is the trusted steward of some of the most compelling data assets in the world.”

— **Margaret Weichert**, former U.S. Office of Management and Budget Deputy Director for Management, speaking about the year-one action plan in [Nextgov.com](https://www.nextgov.com)

A Snapshot of Best Practices

Work iteratively: No agency can accomplish all of the federal data strategy goals at once, but many goals are interrelated. Make progress one step at a time, while simultaneously seeking progress across several yearly action-plan tasks.

Be self-aware: Achieve situational data awareness first by discovering where your agency’s data is created, collected, and stored – regardless of source, format, or geographic location. Learn about the flow of the data, who’s using it, and how it’s being used.

Think big, but start small: Pilot projects are effective for testing data strategies. They can help you win support and build the necessary momentum to drive more significant transformations.

Prepare to adopt a master data management (MDM) program: If your agency is mature, the year-one action plan might seem like table stakes. Start thinking about an MDM plan, because that’s likely to be part of a future-year action plan.



Section One

Prioritizing Data Management



Prioritizing Data Management

“Our goal is enabling data-driven insights to inform how we manage the government; how we apply human capital, financial and other resources; but most importantly how we better serve our mission and serve our citizens.”

– **Suzette Kent**, Federal CIO, United States, speaking about the year-one action plan in [Nextgov.com](https://www.nextgov.com)

The Federal Data Strategy established the data management goals for government agencies, and the 2020 action steps give CDOs a map for the year.

The plan clearly lays out 20 actions, with associated deadlines and reporting requirements throughout the year. However, not all actions apply equally to every agency.

Table. Quick View of Year-One Action Plan Requirements

Actions	Applicability	Outcomes
1-6	All agencies	Data assessments, plans, governance, inventory
7-10	Communities of practice	Integration and coordination of ongoing efforts to improve and better coordinate data-related initiatives across agencies
11-20	Specific individual agencies	Shared solutions, such as pilots and toolkits

“Plans are worthless, but planning is everything... But if you haven’t been planning, you can’t start to work—intelligently at least.”

– From the Desk of President Dwight Eisenhower

Prioritizing Data Management

“Government has room for much improvement in managing and using data more effectively, and the Federal Data Strategy is a productive start. In particular, the Data Coalition is pleased to see that a number of suggestions from industry and stakeholders outside government were thoughtfully incorporated into the final action plan.”

— Nick Hart
CEO of [Data Coalition](#)

Measure Your Agency's Data Management Maturity

The maturity of data management practices varies significantly from agency to agency. But the best way to become a more mature organization is to identify your current status, benchmark against peers, and plot a path to full maturity. Measure and benchmark your agency's data management maturity using the assessment tool at [GovernYourData.com](#).

Each step in the [2020 Action Plan](#) is directly connected to the Foundations for Evidence-Based Policymaking Act and includes completion deadlines and reporting requirements throughout the year. Some tasks are more pressing than others and serve as prerequisites for later tasks.

Let's review the key steps in this year's plan and some of the questions agencies should be prepared to answer.



1.37 of 5

The current maturity level of government agencies completing the Data Management Maturity Assessment tool

Prioritizing Data Management

Steps 1–6: Agency Actions

These steps are foundational, helping agencies establish plans, processes, and priorities for more effectively managing data assets. They will also help you consider how to leverage data assets to best meet your agency’s mission. Your starting point will depend on your agency’s data management maturity (see sidebar on [previous page](#)). Following are the critical steps in this group that can be optimized using data management technologies.

Actions	Step	Responsibility	Key Question(s)	Additional Details	Associated Technology
1	Identify data needs to answer priority questions	All agencies	How will your agency continuously identify the data needed to answer priority questions?	Choose priority questions and consider which data is needed to answer them.	Metadata management, data cataloging, and data maturity assessment
2	Institutionalize agency data governance	All agencies	How is your agency automating data governance processes? If you are considering a master data management program, how will you implement it?	Establish data governance processes, choose the right tools, and include data preparation for artificial intelligence.	Data governance automated implementation and data maturity assessment
5	Identify priority data assets for agency open data plans	All agencies	What are your agency’s challenges in meeting open data deadlines?	Develop the processes and obtain technology to ensure that open data is timely, complete, consistent, accurate, and available.	Metadata management, data cataloging, data governance, data quality, and data maturity assessment
6	Publish and update data inventories	All agencies	How is your agency preparing to improve data completeness and support standard metadata for the long term?	Ensure that comprehensive data inventories are updated with standard metadata, facilitating data ingestion by data.gov and search engine optimization.	Metadata management and data cataloging, data governance, data quality, data marketplace, data integration hub



Prioritizing Data Management

Steps 7–10: Community of Practice Actions

Individual agencies or groups of agencies will take these actions, usually through an established interagency council. The steps in this section offer key opportunities for agencies to build upon ongoing efforts and coordinate across agencies. Following are the critical steps in this group that can be optimized using data management technologies.

Actions	Step	Responsibility	Key Question(s)	Additional Details	Associated Technology
8	Improve data and model resources for AI research and development	Office of Management and Budget, agency CDOs	What projects in my agency support AI efforts? Are agency data management efforts aligned with these AI projects?	Enhance existing pilots for accessing data that will be useful for AI initiatives. Address any barriers to delivering high quality data or enabling effective data models.	Data engineering prep, data integration at scale, data streaming, and cloud migration tools
9	Improve financial management data standards	Getting Payments Right Executive Steering Committee, CAP Goal 8 Executive Steering Committee, Financial Data Transformation Executive Steering Committee	Which agencies have federal social programs that aren't meeting standards for proper payment and fraud detection?	Improve the management and use of key financial management data assets by making payments correctly, establishing results-oriented accountability for grants, and demonstrating value while promoting public trust in the stewardship of taxpayer dollars.	Data integration, data cataloging, data governance, data quality, and master data management

Prioritizing Data Management

Steps 11–20: Shared Solution Actions

The government-wide data services in this group will be discrete pilot projects or efforts led by a single agency or existing council. These steps will result in government-wide direction, tools, and services for implementing strategy that will benefit all agencies. Following are the critical steps in this group that can be optimized using data management technologies.

Actions	Step	Responsibility	Key Question(s)	Additional Details	Associated Technology
15	Develop a data protection toolkit	Federal Committee on Statistical Methodology, Department of Education	How will the government address the need to maintain confidentiality and data privacy when providing access to federal assets?	Develop strategies for providing, maintaining, and using data, including a repository of best practices based on existing and emerging standards – in partnership with agencies, academia, and industry.	Data protection and privacy tools, data masking, and data user behavior analytics
16	Pilot a one-stop standard research application	Federal Statistical Research Data Center Program Management Office of the US Census Bureau	How can the government reduce the burden on researchers who request access to restricted Census Bureau data assets?	Eliminate confusion, reduce complexity, improve the user experience, and decrease the wait time to access data by standardizing the application process.	Data marketplace and data integration hub
18	Pilot enhanced data management tool for federal agencies	General Services Administration	How can the government help agencies manage their own data inventories, metadata, and application programming interface (API) capabilities?	Develop and pilot a government-wide platform pilot with a shared code base, hosted on the cloud, that is customizable to support agency needs and supports open data and federal data catalog requirements.	Cloud data integration, cloud application integration, cloud API management, and cloud integration hub



Section Two

Developing Key Competencies

Developing Key Competencies

Agencies need to achieve comprehensive visibility, situational awareness, and understanding of the data they currently possess—and all of the data still to come. To successfully meet the goals of the year-one action plan (and those of subsequent-year plans), you'll need the right people, processes, and technology.

High-quality data inventories and data catalogs are essential. These activities must be done continuously—rather than once-and-forget. Also, manual processes cannot efficiently and effectively automate the inventory and catalog activities at scale while also ensuring data quality and protection. Instead, you need to deploy automation in your data management strategies.

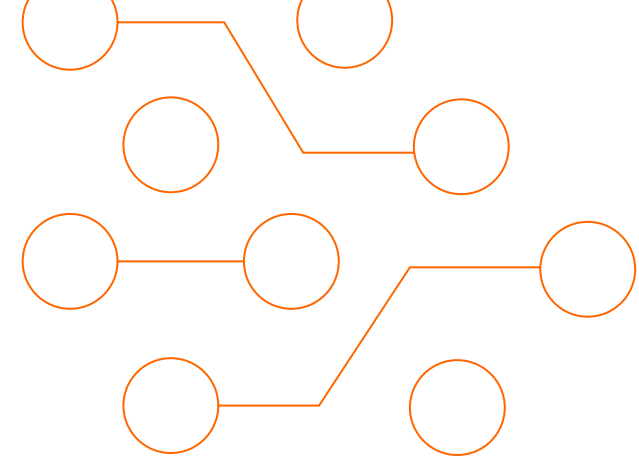
The mechanisms and capabilities needed to automate data management are market tested and readily available, and the return on investment is worthwhile—especially for agencies that want to respond not only to the first action plan but also those to follow. CDOs and other agency leaders should look for solutions that help achieve the following goals.

Build a complete picture of your data environment – Be able to identify the data created or collected from authoritative sources, whether it resides on-premises, in the cloud, or in multi-cloud or hybrid environments. Key to this step is the ability to identify “dark data,” data that is collected or created, stored, and forgotten. Because this data still exists in your systems, it can be exploited by adversaries or overlooked for analytics purposes. Therefore, you need to acquire repeatable data discovery capabilities, inventory all data, and establish a strong data governance program.

Automatically discover and understand data assets – Create a holistic view of all data, including its lineage and relationship views. You should be able to profile the data, assess it, and produce reliable data quality metrics.

Automate data cataloging and classification activities – Apply these processes to all data types across the enterprise. An embedded, AI-powered catalog within a data platform correlates data automatically, providing insight into all types of data—known, unknown, unknown-unknowns, and known-unknowns.

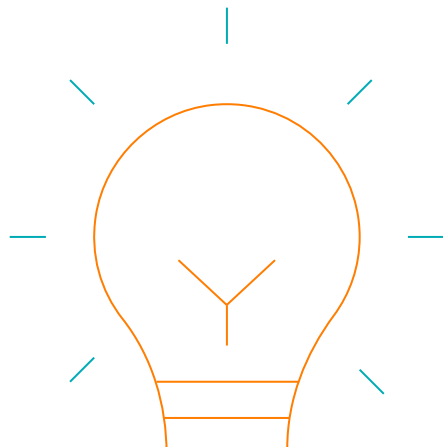
Find data assets, quickly and easily – Choose solutions that support powerful, Google-like semantic search functionality so any key stakeholder in your agency can use self-service capabilities to locate requested data without long waits for IT support or manual-intensive searches.



Developing Key Competencies

Focus on open APIs – Integrate open APIs into your agency’s data environment so you can expose intelligent metadata anywhere and ensure interoperability across systems and processes.

Deploy intelligent data governance at scale – Deliver consistent, trusted, secured data that supports data-driven decision-making by using the power of AI and machine learning to automate today’s most challenging data governance tasks. Cost-effectively scale data curation and delivery so you can democratize data and empower the entire organization with trusted, self-service data and insights.



“There is an enormous amount of flexibility in the Open Data Act. I don’t think anyone is seeking us to do something that is merely a compliance act, that isn’t going to be helpful to us. I think there are ways in which we can each apply the Act differently.”

– **Anne Levine**
Deputy CDO, Office of Economics and Analytics, U.S. Federal Communications Commission, interviewed in “[Government Matters: Impact of the OPEN Data Act](#)”

“Now that we consider data an asset, we have to take care of it, nurture it, and promote its usage. We have to sift through the noise of the data, find the valuable data, and really use it effectively for day-to-day execution.”

– **Vishal Kapur**
Principal, Strategy and Analytics, Deloitte, interviewed in “[Government Matters: Impact of the OPEN Data Act](#)”



Section Three

Identifying Barriers to Success



Identifying Barriers to Success

How can you ensure that you maintain momentum in meeting your data management goals? By proactively identifying and addressing common barriers, you can avoid the challenges that most commonly derail progress.

Support from Senior Leadership

Work to gain and retain support from the very highest levels of your organization. By tying data management efforts to your agency's mission strategy and the priorities of your leaders, you can jumpstart the organization's data culture and put yourself in the driver's seat to get things done. This is not just a compliance effort—it's a compelling opportunity to get your data assets in order so they can support a wide variety of data-centric mission objectives.

Doing nothing or waiting to receive appropriate resources is not a viable option. Seek out executive or leadership support and then get started. As President Theodore Roosevelt once said, "Do what you can with what you've got, where you are."

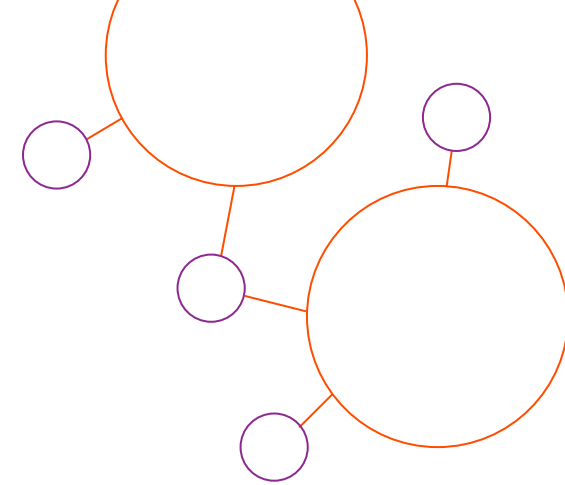
Chief Data Officer Budgets

Federal laws, strategies, and the year-one action plan provide no additional funding for you, your staff, or your projects to demonstrate value. While efforts are underway to change this, agencies must begin the planning now, creating gap analyses to develop budget requirements for the next available cycle or taking advantage of other sources such as related program and operational funds. In the meantime, you must do what you can with discretionary funds to begin leveraging data for greater internal effectiveness and efficiency.

Another option is to consider using the Congressionally funded Technology Modernization Fund (TMF) as a source of interim resources. Authorized in 2017 by the Modernizing Government Technology Act, the TMF provides agencies with ways to deliver services more quickly and efficiently than the annual budgeting process.

Keep in mind that investments in data management capabilities are cumulative and provide compound returns. For example, it's highly likely that an already funded analytics or cloud modernization initiative will also require advanced data catalog, integration, data quality, master data, or data security capabilities. With only nominal adjustments to your requirements, you can deliver these capabilities to both support your funded initiatives and also ensure compliance with the action plan mandates.

Identifying Barriers to Success



“The time is now for agencies to adopt strategies that empower their workforces to embrace a data-driven culture, gain more insights, make better decisions and achieve better outcomes. Anything less will be a lost opportunity.”

– **Steven J. Spano**,
[How to Make the Federal Data Strategy Succeed](#), June 21, 2019

Chief Data Officer Roles, Responsibilities, and Authorities

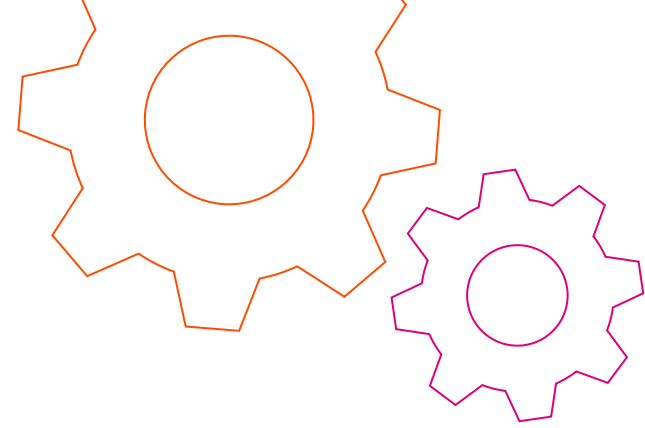
Although the Federal Data Strategy formally established the CDO position and its role in government agencies, not all CDOs are equally well-positioned to comply with today’s data mandates. Lack of clarity in the CDO role and poor understanding of the strategic value of data and data management can compromise CDO achievement.

CDOs who are buried in bureaucracy or lack direct reporting access to top leadership will struggle to enact data policies and execute plans to initiate change. Only when CDOs are empowered with the requisite authority and responsibility to bridge the gap between IT and mission or business leaders can they serve as an organizational change manager, successfully create data-based agencies, and develop modern data cultures.

A critical step for any CDO is to directly tie or correlate their performance metrics with mission outcomes and objectives. In that way, CDOs can most effectively communicate the value delivered by their teams beyond the deployment of technical capabilities.

Data Privacy and Protection Sensitivity

One additional requirement not addressed by the Act is the need for agencies to address data privacy and protection mandates while striving to make data available to the public. There are multiple federal laws and regulations that require government organizations to take steps to protect personal and personally identifiable information (PII) and personal health information (PHI). While developing new strategies to enhance data transparency, CDOs must also protect against releasing any data that contains PII or PHI.



Identifying Barriers to Success

“How do you change the way an organization operates? That is a little bit about the technology and the data, but it is also really about the organizational structures that you have in place.”

— **Dr. Monique Siddiqui**
former CDO of the US Office of the CTO
for the [U.S. Department of Health and Human Services](#)

Questions for Proactive Chief Data Officers

Do you have the right information and personnel skills for your initial data projects? Here are some areas you should be thinking about as you prepare for next steps.

Data access gaps: How accessible is your mission-critical data? Is this data ready to use? How can you improve the availability and fitness of your data, for this project and future projects? Is there data outside your agency that might help drive better decisions?

Data quality, data governance, and data privacy gaps: How trustworthy and protected is your data? How is it governed? Who are the data stewards and data owners? How do they administer data stores? How can you improve data quality for all users and applications? Where does your sensitive information reside?

Skills gaps: Do you have analytical skills and capabilities in the right places? How will you generate and use insights? Are data stewards current on best practices for data management and governance? Are people who generate data aware of data policies and processes?

Data platforms: Do you have a data platform that can be used for various use cases? Will the platform help you support and grow a data culture? Does it offer built-in support for data governance, quality, and cataloging? Can it support a hybrid environment spanning multi-cloud and on-premises systems and applications?

Master Data Management (MDM) program skills: Is your agency ready to move forward with an MDM program? If you have already performed or achieved the basic goals listed in the year-one action plan, do you have the people, processes, and technology that will help you prepare for the coming MDM requirements?



Section Four

The Build-Versus-Buy Dilemma



The Build-Versus-Buy Dilemma

To reduce costs and take advantage of innovations enabled by the open-source community, many government agencies have considered building their own software or deploying open-source offerings. How do you know when you should build your own applications? When is the wiser choice to buy mature technology offerings?

When sourcing solutions for unique needs—such as those in defense or security agencies or cyber capabilities—choosing custom-built applications can be faster, more secure, and less costly.

Open-source solutions can also make sense for simple applications, microservices, or widgets that are not exposed to external-facing users or applications. Free solutions are attractive, especially when advanced commercial technologies may come with a higher long-term total cost of ownership or return on investment. But keep in mind the total cost of ownership. With even mild complexity, “free” solutions can quickly become extremely expensive when considering maintainability, administration, upgrades, new business requirements, and troubleshooting issues.

Proprietary solutions and more complex open-source software can also create lock-in issues with applications. As applications become more integrated with one another, problems with a single open-source solution can replicate themselves throughout the enterprise network—again requiring costly services to remedy.



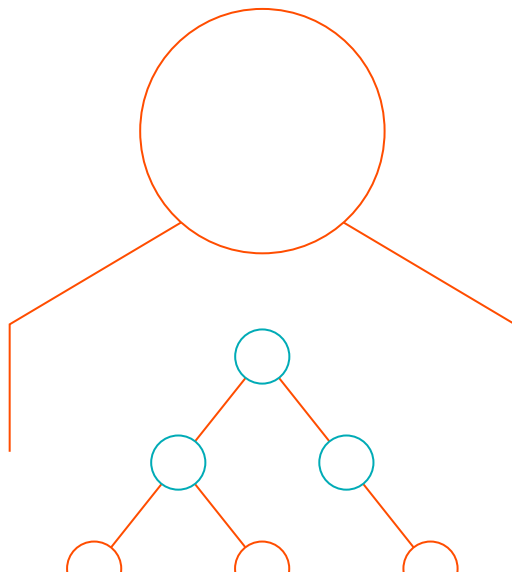
The Build-Versus-Buy Dilemma

Agencies may also find it difficult to locate trained or appropriately skilled workers and administrators to use and manage proprietary or open-source solutions. Limited skillsets could compromise the agency's ability to meet its mission objectives. Far too many agencies have found themselves struggling to support proprietary applications—or keeping them running at all—once the developer who created the technology moves onto another job.

Finally, proprietary software can raise the likelihood of national security breaches. Foreign entities can use the same open-source software, introducing a host of potential intellectual property violation and security issues. Because these open solutions are not built with the same security expertise, certifications, and diligence as commercial software, any cost savings can be minor compared to the potential for damage.

“Getting in front of data quality means creating the most important data correctly the first time. People must step up to their responsibilities as data creators and data customers. When both make reasonable efforts to find and eliminate root causes of error, data quality improves rapidly.”

— **Thomas C. Redman Ph.D.**
Getting in Front on Data: Who Does What, 2016, Technics Publications



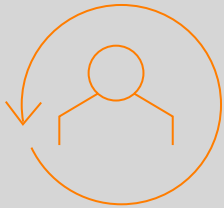


Section Five

Case Studies

Numerous government agencies are already beginning to take steps to meet the federal data management mandates. Here are a few examples.

Case Studies



Federal Health Agency Attains 360-Degree View on Global Supply Chain

Mission:

A national agency is responsible for protecting the public health by ensuring the safety, efficacy, and security of products used by humans and animals. To manage the development and supply of products within an increasingly complex regulatory environment, the organization needed clearer visibility into the lifecycle of every product under its purview, from supply chain to manufacturing and distribution.

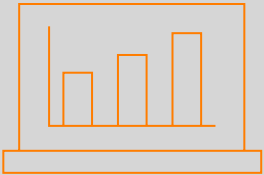
Challenge:

The agency faced a significant data management challenge and required a holistic view of a global product supply chain. The agency had 155,000 regulatory submissions, 88,000 firm registrations and product listings, and 1.8 million adverse event reports to keep track of. Any delays could impact the provision of important products to the market.

Solution:

As a result, the agency looked into a data strategy through master data management software that would provide a single, consolidated and reliable view of mission-critical data. Such data could include individuals, organizations, and events, as well as other key domains. With this strategy, the organization was able to gain a 360-degree view of the global supply chain with a singular, trusted view. This empowered the agency with the ability to trace any potential harm in products, respond to changes in supply and demand more quickly, and ultimately save lives.

Case Studies



Defense Agency Supports Powerful Analysis

Mission:

A national defense organization strives to protect the nation and its citizens by providing global vigilance, reach, and power. To support its mission, the agency collects huge volumes of data to enable precise analysis and rapid decision-making.

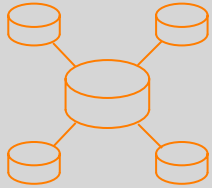
Challenge:

The organization was not always able to provide essential mission- and business-context to its analytics and data science efforts. The agency needed to enable governance and stewardship of its metadata, as well as the ability to document the technical specifications of physical data.

Solution:

The organization deployed an integrated data platform to provide cyber-secure, cloud-based tools that help its users connect, find, share, and learn from agency data. Building on its new data platform—including data governance and enterprise data catalog solutions—the agency is creating a modern enterprise information model that supports ready access to trusted, protected, well-governed and actionable data.

Case Studies



USGS Builds Largest Water Quality Dataset

Mission:

The United States Geological Survey (USGS) runs the National Water Quality Assessment Program, which collects and interprets data about the quality of a nation's major groundwater and surface water systems.

Challenge:

The agency wanted to build the largest water quality data set, which meant they would have to streamline the process of compiling data for analysis and improve performance of their overloaded data infrastructure.

Solution:

By harnessing a data integration solution as part of their data strategy, USGS was able to save \$70 million in data collected from 50 locations over 10 years. Additionally, USGS improved system performance by 30 percent and saved at least 30 days of development time and resources annually.



Section Six

Learn More



Learn More

Meeting the requirements of the Federal Data Strategy and preparing to address the challenges of the year-one action plan require a new, proactive approach from CDOs and their agencies.

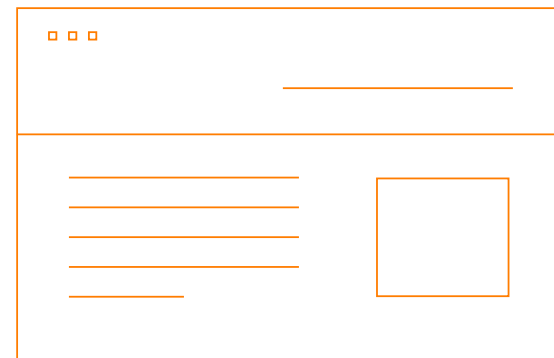
As the world's leader in enterprise cloud data management, Informatica is prepared to help you intelligently lead your agency—first into compliance with the new mandates and then into the ability to leverage data as a strategic asset for the benefit of the American people, academia, research and development, and business. With 100% focus on everything data, we offer the versatility, expertise, and solutions to help you succeed.

The Informatica Intelligent Data Platform is the industry's most complete and modular enterprise data solution, built on a microservices architecture. The solution helps organizations manage cloud data warehouses and data lakes as they modernize their analytics practices. It also offers a holistic, real-time view of organizations, people, places, assets, and facilities with the delivery of trusted, protected data through intelligent data governance.

Our AI-driven platform spans on-premises, multi-cloud and big data environments anywhere – ensuring data is trusted, protected, governed, accessible, timely, relevant and actionable. This enables agencies to deliver faster and better data-driven digital transformation outcomes.

Informatica's risk-centric approach to protecting data automatically classifies sensitive data and proactively detects threats associated with unauthorized data access or proliferation. Based on assessments, data can be non-intrusively protected for secure access to contextual information. Agencies can better maintain and improve their cyber posture and cybersecurity efforts.

We invite you to explore all that Informatica has to offer—and unleash the power of data to drive the modernization of your agency



About Informatica

Digital transformation changes expectations: better service, faster delivery, with less cost. Businesses must transform to stay relevant and data holds the answers.

As the world's leader in enterprise cloud data management, we're prepared to help you intelligently lead—in any sector, category or niche. Informatica provides you with the foresight to become more agile, realize new growth opportunities or create new inventions. With 100% focus on everything data, we offer the versatility needed to succeed.

We invite you to explore all that Informatica has to offer—and unleash the power of data to drive your next intelligent disruption.

Worldwide Headquarters

2100 Seaport Blvd, Redwood City, CA 94063, USA

Phone: 650.385.5000

Fax: 650.385.5500

Toll-free in the US: 1.800.653.3871

[informatica.com](https://www.informatica.com)

[linkedin.com/company/informatica](https://www.linkedin.com/company/informatica)

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