



5 CRITICAL COMPONENTS OF SUCCESSFUL DATA GOVERNANCE

TABLE OF CONTENTS

Introduction	3
Component 1: Data architecture.....	5
Component 2: Data quality.....	6
Component 3: Data management	7
Component 4: Data security	8
Component 5: Data compliance	9
Conclusion	10

INTRODUCTION

Organizational leaders worldwide agree that data governance is critical — yet many do not have a data governance program in place, even as the stakes of not having one have risen precipitously. A [2024 IBM report](#) showed that the average cost of a data breach spiked by 10% to \$4.9 million over the course of the year, the highest annual jump since the pandemic. The cost of lost business drove the increase — including operational downtime and lost customers — in addition to the cost of post-breach responses such as customer service and regulatory fines. Nearly half of all breaches involved customer personal identifiable information (PII), such as Social Security numbers and home addresses, and 43% involved intellectual property.

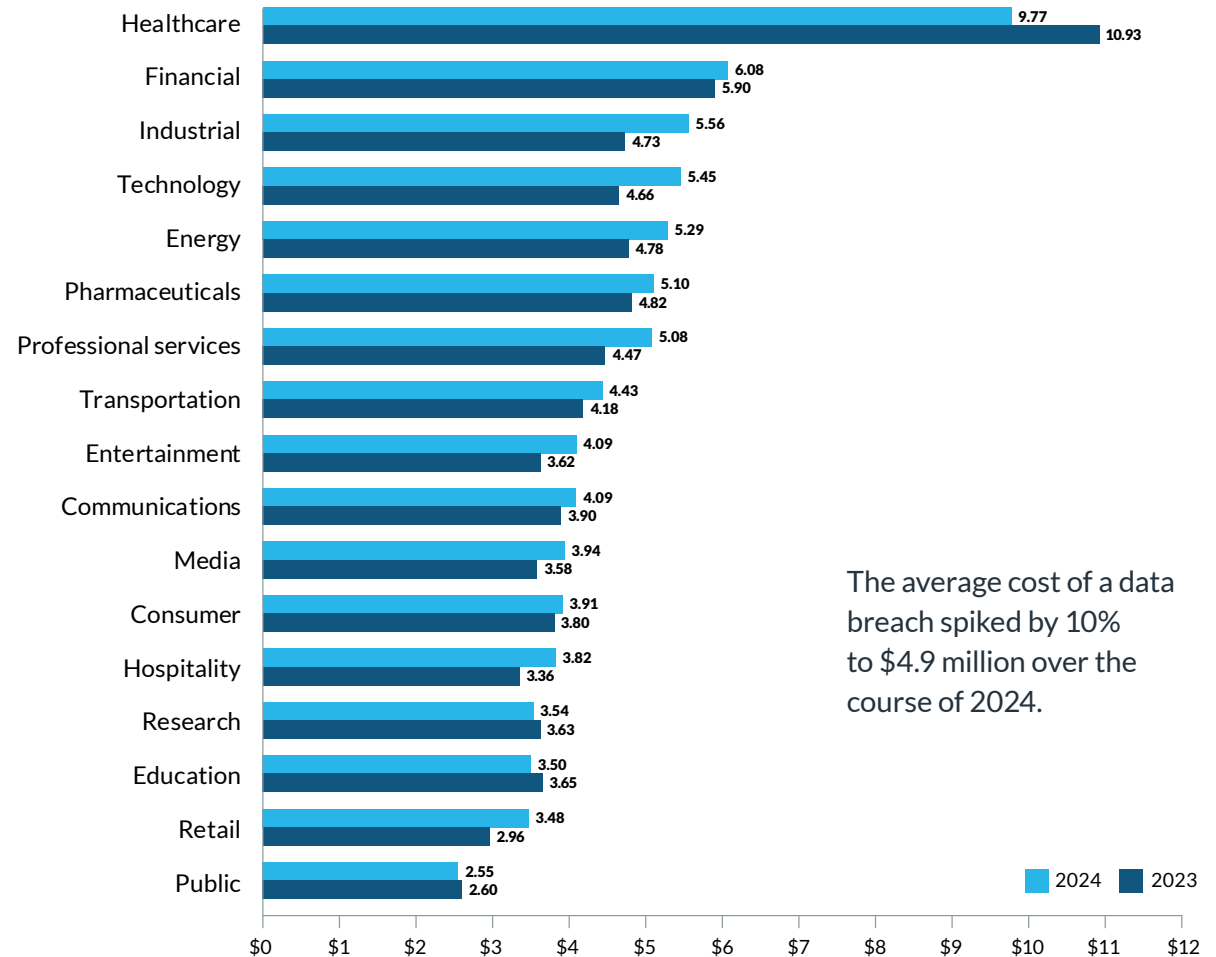
Historically, data governance was driven largely by regulatory compliance, and regulations such as GDPR made data governance a must-have for organizations. Today, demands for timely, accurate analytics and the rise in AI initiatives are changing the requirements for data governance programs: They must not only help companies follow compliance directives but must also empower companies to build data-intensive apps and data-centric AI. Organizations saved an average of \$2.3 million in breach costs when they used AI and automation in security and governance efforts, compared to those with no AI use in prevention workflows, according to IBM.



Even companies that consider themselves ahead of the curve in AI preparations need help with governance. According to the “Data Strategies for IT Leaders” report by MIT Technology Review, the 22% of companies that said they were “very ready” for AI may have fewer challenges with data access and integration but also face more data-quality issues, possibly because better data access also showed previously unknown governance shortcomings.

The Snowflake AI Data Cloud provides an exceptional foundation to support strong data governance programs. Snowflake helps companies break down data silos and enables companies to achieve compliance as well as data-driven decision-making using secured, governed data. This includes availability on the three major cloud providers; elastic storage and compute; data encryption, access controls and tracking capabilities; and integration with external data management tools. Here are five critical components to keep in mind when building a successful data governance program, and how Snowflake can set you up for success.

COST OF A DATA BREACH BY INDUSTRY



The average cost of a data breach spiked by 10% to \$4.9 million over the course of 2024.

Source: IBM Cost of a Data Breach Report 2024, ibm.com/reports/data-breach

COMPONENT 1:

DATA ARCHITECTURE

Overcoming silo mentality in business areas is one of the most challenging aspects of data and analytics governance. Rigid legacy data architectures promote data isolation by hindering the sharing and dissemination of information throughout the entire organization.

Legacy architectures also make it difficult for companies to organize information coherently. Siloed, disorganized information makes it impossible to apply data governance, whether that be tracing data lineage, cataloging data or applying a granular security model. Snowflake provides an effective platform for successful data governance in three ways: silo reduction, secure data sharing and flexibility.

Snowflake's centralized metadata repository provides a single source of truth for all your data in Snowflake, making it easier to find, view, trace and protect data, and to organize it both manually and with automation and AI. **Snowflake Horizon Catalog** provides data discovery, data sharing and data lineage capabilities to help improve transparency. Snowflake Secure Data Sharing capabilities help companies immediately and securely share data while retaining control of it and keeping it centrally located and easily traceable.

MERKLE IMPROVES CUSTOMER EXPERIENCES WHILE PROVIDING DATA GOVERNANCE AND SECURITY

Managing massive amounts of first- and third-party data for global brands requires scalable technology and rigorous data governance. Merkle prioritizes innovation, collaboration and compliance, and combined with Snowflake's AI Data Cloud, helps ensure clients get more value from their data.

- **Built-in data governance for more peace of mind:** Merkle uses Snowflake to facilitate data collaboration between internal and external stakeholders without moving or copying any data — all powered by Snowflake's robust governance and security controls.
- **Unlocking the power of data without sacrificing privacy:** With Merkury Clean Rooms, powered by Snowflake Data Clean Rooms, Merkle's clients and partners combine data from multiple sources without gaining unauthorized access to sensitive data.
- **Less complexity, more productivity for employees:** Data consolidation in Snowflake means Merkle's technical staff spend less time managing third-party tools, freeing up resources for higher impact projects.

[Read the full story here.](#)

COMPONENT 2:

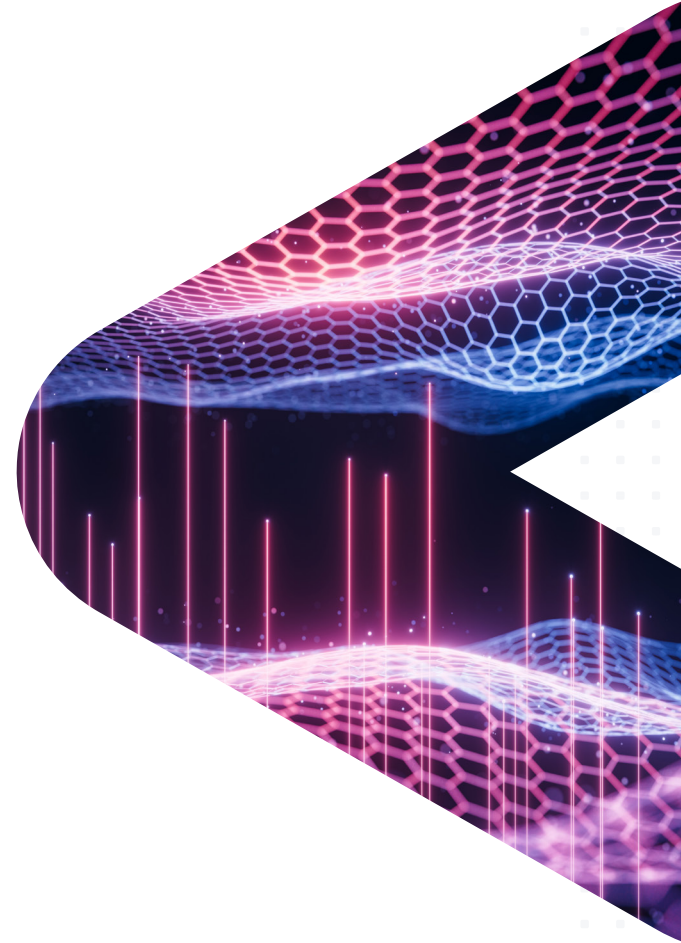
DATA QUALITY

Data governance involves oversight of the quality of the data coming into a company as well as its usage throughout the organization. Data owners need to be able to identify when data is corrupt, inaccurate or outdated, or when it's being accessed and shared. They need to be able to set rules and processes easily.

The ability to trust data is a cornerstone for every data-driven organization that makes decisions based on information from multiple sources — and it's especially important for those that are implementing data-centric AI strategies. According to the [MIT Technology Review](#), data quality is one of three specific data capabilities necessary to support the effective deployment of generative AI, along with the integration of

multiple data sources and timely democratization of data to relevant business users. As the old adage states, “Garbage in, garbage out” — so making sure that AI is ingesting high-quality data is critical to getting outputs and analytics that inspire confident decision-making.

Snowflake's built-in data quality monitoring capabilities help companies increase trust in the validity and reliability of their data. This serverless service continuously monitors the quality of data in specified tables and views using either predefined quality metrics or customer-defined metrics. It eliminates the need for customers to rely on ad hoc quality checks, third-party applications and homegrown tools to monitor the quality of data in Snowflake. A central dashboard also makes data cataloging, compliance reporting and threat detection alerting easier.



COMPONENT 3:

DATA MANAGEMENT

Data governance requires companies to answer an important set of questions: What data do I have, and where does it reside? Who has access, and how is it used? Data management is key to performing this sort of data inventory; a strategy and methods are needed for accessing, integrating, storing, transferring and preparing data for analytics. According to the [MIT Technology Review](#), “The rise of AI exacerbates longstanding challenges in data management — data governance, security, and privacy (cited by 59%), data quality and timeliness (53%), and data integration (48%) — and may supply the urgency needed to finally address them.”

Snowflake helps companies to automatically classify columns containing sensitive personal data and to tag objects for reporting and access control. Customers can further track the lineage of and access to their data. Snowflake offers [Data and ML Lineage](#) to easily visualize the flow of data from its source to its final destination in Snowflake. The lineage graph fully supports all ML objects created in Snowflake — features, data sets and models — enabling full traceability of the data flow in ML pipelines. Access History is an account usage view that provides an audit record of all tables and columns accessed by the users, and it also houses records of all data movement between tables. Additionally, Object Dependencies is an account usage view that provides records of all objects related by metadata, such as the tables backing a view.

Snowflake’s ecosystem partners are embracing these new capabilities to provide end-to-end lineage, access audit and data popularity insights to their end users. Synthetic data can help bridge the gap between data accessibility and protection of sensitive data by allowing developers to work with data that looks and feels like real data but doesn’t actually contain sensitive information.

AI SHINES SPOTLIGHT ON DATA GOVERNANCE CHALLENGES

Which of the following challenges does your organization face when it comes to deploying AI at scale?

Data governance, security or privacy

59%

Data quality or timeliness

53%

Costs or resource investment

49%

Data silos or data integration challenges

48%

Source: “[Data Strategies for AI Leaders](#),”
MIT Technology Review Insights, 2024

COMPONENT 4:

DATA SECURITY

Along with the proliferation of data sources both inside and outside enterprises, data security incidents are on the rise. Data governance is vital to improving data security. Similar to successful data management, data security hinges on traceability: knowing where your data comes from, where it currently is, who has access to it, how it's used and how to delete it.

Data governance sets rules and procedures, helping to prevent leaks of sensitive business information or customer data so data doesn't get into the wrong hands. However, legacy platforms create siloed information that is difficult to access and trace. Those silos are often exported, sometimes to spreadsheets, and duplicated to combine data with other siloed data, making it even harder to track that data.

Snowflake's platform has several features that enable traceability and accountability. With role-based access control, Snowflake provides granular control over access to objects to identify who can access what, which operations can be performed and who can create or alter access control policies. Row access policies dynamically control access based on user authorization. **Dynamic Data Masking** allows security administrators to create policies to limit the visibility of data at a column level; data can be unredacted, partially redacted or fully redacted. This capability also includes integration with external tokenization services for added layers of security.

Moreover, Snowflake offers end-to-end encryption (E2EE) so that only authenticated users and the runtime components can read the data. Snowflake also offers monitoring solutions to evaluate and manage risk posture for data and Snowflake accounts (**Trust Center** and **Data Governance**).

NYC HEALTH ELEVATES CARE FOR NEW YORKERS EXPERIENCING HOMELESSNESS

Data integrity, literacy and governance are key components of NYC Health + Hospitals' analytics strategy, which aims to provide data solutions for stakeholders.

- **Simpler data sharing with built-in security:** Snowflake Secure Data Sharing can simplify collaboration with multiple partners and city agencies, while Snowflake Horizon Catalog's unified security and governance features ensure peace of mind in the highly regulated healthcare industry.
- **Access to membership data in minutes — not days:** With the ability to ingest health plan membership data more efficiently, teams across NYC Health + Hospitals can make better, faster decisions to help patients.
- **Better care for New Yorkers with a holistic view of data:** Building NYC Health + Hospitals' data platform on Snowflake provides near-infinite scaling of storage and compute to integrate billions of rows of healthcare data, which can help care providers better understand and serve New Yorkers in need.

[Read the full story here.](#)

COMPONENT 5:

DATA COMPLIANCE

Businesses often begin thinking about data governance when they need to comply with regulatory policies such as GDPR, HIPAA, PCI DSS and the U.S. Sarbanes-Oxley (SOX) law. These regulations require organizations to be able to trace their data from source to retirement, identify who has access to it and understand how and where it is used.

Data governance applies rules and procedures around ownership and accessibility of data. Without it, sensitive information can get into the wrong hands or be improperly expunged, leading to governmental or regulatory financial penalties, lawsuits, and even jail time.

Snowflake offers features that can help companies set controls on data ownership and access, enabling the implementation of rules and procedures for data governance. These include Dynamic Data Masking and secure views. Data providers retain ownership of their shared data through Snowflake's collaboration capabilities, with the ability to revoke access at any time. By retaining control of the data, it is easier for companies to properly and securely dispose of data.

Because compliance and security are so important, Snowflake's portfolio of security and compliance reports is continuously expanding. The current list includes certifications for ISO 27001:2022, ISO 27017:2015, ISO 27018:2019, ISO 9001:2015, TISAX AL3, GxP, Cyber Essentials Plus (CE+), C5, K-FSI, SOC 1 Type 2 and SOC 2 Type 2, IRAP Protected, IRS 1075, CJIS, TX-RAMP Level 2, StateRAMP High, FedRAMP High, DoD Impact Level 4, ITAR, CSA Star Level 1, PCI DSS, HITRUST, Microsoft SSPA, UAE DESC, NIST 800-171, FIPS 140-2 and CMS ARS 5.1.



CONCLUSION

Data and AI governance is a continuous organizational commitment that needs to grow and adjust to new compliance, business and security challenges. Focusing on data infrastructure, data quality, data management, data security and data compliance helps ensure that data governance programs can scale and adapt to meet these challenges. Whether a company is seeking to comply with regulations, become more data-driven or both, Snowflake provides a strong foundation for successful data and AI governance.

For more about data governance and Snowflake governance capabilities, check out these resources:

- See how [Merkle adopted Snowflake to improve its collaboration](#) by taking advantage of robust governance, security controls and Data Clean Rooms
- [Read the blog](#) and get the details about [Snowflake Horizon Catalog](#)
- Watch the [Horizon Catalog Demo for Data Governors and Stewards](#)





ABOUT SNOWFLAKE

Snowflake makes enterprise AI easy, efficient and trusted. Thousands of companies around the globe, including hundreds of the world's largest, use Snowflake's AI Data Cloud to share data, build applications, and power their business with AI. The era of enterprise AI is here.

Learn more at [snowflake.com](https://www.snowflake.com) (NYSE: SNOW)



© 2025 Snowflake Inc. All rights reserved. Snowflake, the Snowflake logo, and all other Snowflake product, feature and service names mentioned herein are registered trademarks or trademarks of Snowflake Inc. in the United States and other countries. All other brand names or logos mentioned or used herein are for identification purposes only and may be the trademarks of their respective holder(s). Snowflake may not be associated with, or be sponsored or endorsed by, any such holder(s).