



THE 5 BIGGEST DATA CHALLENGES FOR LIFE SCIENCES

Speed, innovation and time to market with data-driven approaches enabled by Snowflake's Data Cloud and Tableau's Analytics Platform while meeting regulatory and data security requirements.



TABLE OF CONTENTS

- 2** Introduction
- 3** Challenge #1: Data Quality
- 4** Challenge #2: Data Performance
- 5** Challenge #3: Data Exchange and Collaboration
- 6** Challenge #4: Data Management and Scaling
- 7** Challenge #5: Regulatory Compliance
- 8** Conclusion
- 9** About Snowflake, Tableau, and Salesforce

INTRODUCTION

The life sciences industry is at a turning point. Data innovation is providing pharmaceutical, biotechnology, medical device, and genomics companies with opportunities to gain valuable new insights. Increasingly, companies are leveraging artificial intelligence, machine learning, and automation to accelerate discovery, development, and time to market. And, to quickly develop treatments and a vaccine for COVID-19, organizations are racing to analyze unprecedented volumes of data in the shortest time possible.

To prepare for the future, all types of life sciences organizations from biopharma to MedTech companies will need to find new ways to create value along with new metrics that will help them make sense of today's wealth of data.¹ For life sciences companies using outdated legacy on-premises and cloud database systems, however, the exploding volume and variety of data pose significant management and security challenges. Additionally, these legacy systems hinder life sciences organizations from attaining the level of data diversity they need to improve business processes and make critical decisions.

Snowflake's Data Cloud offers the power and flexibility that life sciences companies need to turn data into mission-critical insights. Developed as a service for the cloud from the ground up, Snowflake provides modern and flexible architecture and data management options. Snowflake's capabilities allow life sciences organizations to consolidate data silos and reach data-driven insights faster and enable them to discover, collaborate, and generate value from data regardless of where it resides, allowing for new partnerships and tighter data connections across business ecosystems.

As healthcare and life sciences companies harness the power of data during the COVID-19 pandemic to save lives, adapt operational models, make confident decisions, innovate new processes, and recapture lost revenue, they are also looking to Tableau. Tableau's industry-leading analytics platform enables organizations to give leaders the information they need to make critical decisions quickly and helps life sciences organizations become more data-driven. The Tableau platform makes visual analytics intuitive and easy to use, empowering leaders, business users, and clinicians to deliver optimal patient experiences and care outcomes.

Read on to learn about five common challenges life sciences companies face in leveraging data for better therapeutic and business outcomes, and how Snowflake and Tableau can help them achieve both.

CHALLENGE #1: DATA QUALITY

To conduct R&D and clinical trials and manage day-to-day business, life sciences companies need to process a vast amount of real-world data that comes in a wide variety of formats. The incoming data is “rife with missing values,” according to The Harvard Business Review. “It is messy data, filled with inconsistencies, potential biases, and noise.”² Life sciences companies futilely spend precious time ingesting, cleaning, and organizing the data, but legacy data warehouses cannot deliver data in a way that enables fast, accurate analysis and insights. In addition, the data often sits in two silos: commercial, for data such as sales and marketing records, and regulated, for data such as clinical trial and laboratory reports.

Snowflake enables access to a diverse set of data. It can integrate structured and semi-structured data from a variety of sources, including OLTP databases, clinical applications, and Internet of Medical Things (IoMT) devices, into a centralized repository.

From there, data scientists can use automated organization tools to analyze the data more quickly and efficiently. They can integrate machine learning by querying data in Snowflake and feeding it into tools written in Python and R. In addition, Snowflake consolidates both commercial and regulated data into a centralized repository that can be available to the entire organization.

Tableau also provides a visual and direct way to combine, shape, and clean data, thanks to Tableau Prep. With a direct connection to Snowflake, prepping data is made easier, enabling users to start analyzing data faster.

The Tableau connector allows companies to access their single source of truth within Snowflake instead of having to port copies of data between silos. This enables real-time insights and faster clinical trial analytics. With Snowflake addressing diverse analytical needs across the organization, data scientists and analytics teams can unlock the insights needed to accelerate innovation at every stage of the product life cycle, from discovery and development to manufacturing and commercialization.



CHALLENGE #2: DATA PERFORMANCE

To reach actionable insights quickly, life sciences companies must be able to process massive amounts of data quickly and easily. For example, efficient integration, validation, and mining of clinical trial data is crucial for drug development. Time-to-insight is also critical in conducting successful sales and marketing campaigns as well as optimizing inventory management and supply chain logistics. However, many companies still rely on slow legacy systems that exacerbate the issues created by data silos, deliver poor and inconsistent user experiences, and produce fragmented insights generated by much manual effort. Such systems do not easily scale to accommodate a larger volume of data or number of users, which could be critical when a pharmaceutical company needs to act quickly during a public health crisis, as just one example.

Snowflake can accelerate data performance in several ways. It can quickly and easily process information from disparate sources and organize it into a single location. With the ability to concurrently run ETL and data workloads, all while servicing data requests from multiple users, Snowflake supports diverse analytical workloads. Teams have ready access to self-service analytics and real-time data to make well-informed decisions. Fewer performance lags translate to accelerated innovation and time to market for life-saving products.

Additionally, Tableau and Snowflake's fast, robust connector provides a seamless, integrated experience in Tableau when creating dashboards and visualizing data in near real time.

CHALLENGE #3: DATA EXCHANGE AND COLLABORATION

Access to a diverse and varied source of data enhances informed decision-making. To achieve data diversity, life sciences companies must exchange vast volumes of sensitive data with other entities, often requiring back-and-forth collaboration. During a clinical trial, for example, data about the therapies, patients, and lab results must be exchanged between a pharmaceutical company and a variety of partners throughout the process. But disparate, legacy systems hinder the fast, easy, and secure transfer of data, causing companies to rely on manual, insecure processes such as FTP.

Snowflake facilitates the secure, seamless, and governed exchange of sensitive data at scale to facilitate collaboration and data exchange among biopharma companies, biotech companies, research laboratories, and academic institutions. With Snowflake's data exchange capabilities, built on top of Snowflake Secure Data Sharing technology, organizations can give internal and external users access to live, ready-to-query data sets, such as research outputs, without having to move, copy, or transfer that data. They can also use Snowflake Data Marketplace to combine public data sets with their own data to gain the data diversity that enables deeper insights and better data-driven decisions. During the COVID-19 crisis, these capabilities enabled a coalition of leading healthcare companies to connect their data and create a healthcare data repository that revealed insights to combat the pandemic.

Data-informed decision-making has become critical in a world transformed by the coronavirus pandemic. Thanks to Snowflake Data Marketplace and Tableau's COVID-19 Data Hub, essential data resources and actionable information, from daily dashboards to real-world solutions, are available for public use.³



CHALLENGE #4: DATA MANAGEMENT AND SCALING

According to Deloitte, “In a future with interoperable and real-time data, the greatest returns will likely accrue to organizations that successfully mine data to deliver personalized solutions and meet consumer demands.”⁴

A data platform that is easy and cost-effective to manage and scale is a key part of that success. Legacy platforms, whether on-premises or in the cloud, can be complex and costly to maintain and grow. Instead of making data-driven decisions, data scientists and analysts waste time managing the platform and worrying about its cost.

But Snowflake's Data Cloud is automated and self-service, enabling life sciences companies to focus on their core business instead of IT management. With near-zero maintenance, Snowflake provides a simple-to-use and cost-efficient solution that increases productivity. In addition, Snowflake's multi-cluster, shared data architecture separates storage and compute, making it possible to scale instantly and infinitely, without downtime or disruption. The system can support virtually any amount of data, workloads, and concurrent users and applications without requiring data movement or copies.

To help monitor Snowflake account usage and more, Tableau and Snowflake collaborated on pre-built monitoring dashboards⁵ so that user adoption, optimized performance, and cost management data is easy to see and understand.



CHALLENGE #5: REGULATORY COMPLIANCE

In the life sciences industry, companies must comply with stringent regulations and quality guidelines, including GxP requirements, which regulate practices in manufacturing, laboratories, and clinical settings to ensure medical products are safe for consumers. Snowflake is GxP compatible, providing documentation to life sciences customers to ensure their GxP compliance.

In addition, life sciences companies must comply with strict regulations on the use, storage, and disposal of sensitive data. Snowflake provides an extensive portfolio of security certifications and granular controls that enable secure and governed access to all data. Organizations can also use Snowflake's role-based access control to have strict oversight on data access, ensuring compliance with data privacy regulations. With announced authentication improvements around OAuth and more, Tableau and Snowflake continue to lead in connectivity and offer customers the best combination of functionality and security in authentication options. Together, Tableau and Snowflake provide flexibility and strict regulatory compliance to align with the data strategies of life science companies.

CONCLUSION

To stay ahead of the seismic shifts in the industry, today's life sciences organizations need to harness the power of the cloud and its ability to deliver performance, speed, and flexibility. With Snowflake and Tableau, companies can leverage data from any source to deliver better therapeutic and business outcomes for patients, customers, partners, and care providers. They can manage, scale, share, and exchange data in a secure and governed manner, leading to faster actionable insights in clinical trials and reducing time to market. In addition, they can work with a technology platform that ensures GxP compatibility, security, and data privacy requirements.

Snowflake and Tableau enable life sciences organizations to focus on developing and delivering life-saving treatments and devices faster with a truly data-driven approach.





ABOUT SNOWFLAKE

Snowflake delivers the Data Cloud — a global network where thousands of organizations mobilize data with near-unlimited scale, concurrency and performance. Inside the Data Cloud, organizations unite their siloed data, easily discover and securely share governed data, and execute diverse analytic workloads. Wherever data or users live, Snowflake delivers a single and seamless experience across multiple public clouds. Join Snowflake customers, partners and data providers already taking their businesses to new frontiers in the Data Cloud. Find out more at [snowflake.com](https://www.snowflake.com)

ABOUT TABLEAU

Tableau helps people see and understand data. Tableau's self-service analytics platform empowers people of any skill level to work with data. From individuals and non-profits to government agencies and the Fortune 500, tens of thousands of customers around the world rely on Tableau's advanced analytics capabilities to make impactful, data-driven decisions. For more information, please visit [tableau.com](https://www.tableau.com)

ABOUT SALESFORCE

Salesforce is the global leader in Customer Relationship Management (CRM), bringing companies closer to their customers in the digital age. Founded in 1999, Salesforce enables companies of every size and industry to take advantage of powerful technologies—cloud, mobile, social, internet of things, artificial intelligence, voice and blockchain—to create a 360-degree view of their customers. For more information about Salesforce (NYSE: CRM), visit: [salesforce.com](https://www.salesforce.com)



© 2021 Snowflake, Inc. All rights reserved. #MobilizeYourData

CITATIONS

¹ <https://bit.ly/30dIYU7>

² <https://bit.ly/2EAmXb5>

³ <https://tabsoft.co/3fp4Y7C>

⁴ <https://bit.ly/3oZbMf9>

⁵ <https://tabsoft.co/3wA3A7Q>