SNOWFLAKE ENABLED SIEMENS HEALTHINEERS IT TO OPTIMIZE BUSINESS OPERATIONS AROUND THE GLOBE

MEDICAL TECHNOLOGY

SIEMENS Healthineers

COMPANY Siemens Healthineers

LOCATION Erlangen, Germany

SNOWFLAKE WORKLOADS USED

| DATA ENGINEERING | DATA LAKE | DATA WAREHOUSE | DATA SCIENCE | DATA APPLICATIONS | DATA SHARING |

Siemens Healthineers AG pioneers breakthroughs in healthcare. For everyone. Everywhere. As a leading medical technology company headquartered in Erlangen, Germany, Siemens Healthineers and its regional companies is continuously developing its product and service portfolio, with AI-supported applications and digital offerings that play an increasingly important role in the next generation of medical technology. These new applications will enhance the company's foundation in in-vitro diagnostics, image-guided therapy, in-vivo diagnostics, and innovative cancer care. Siemens Healthineers also provides a range of services and solutions to enhance healthcare providers' ability to provide high-quality, efficient care. In fiscal 2021, which ended on September 30, 2021, Siemens Healthineers, which has approximately 66,000 employees worldwide, generated revenue of €18.0 billion and adjusted EBIT of €3.1 billion. Further information is available at www.siemens-healthineers.com.

> "We are investing deeply in Snowflake for our global organization, and what we have done wasn't an out-of-the-box feature from Snowflake. But with the help of the Snowflake Professional Services team, it has become an even more successful partnership."
>
> **—SUSANNE BERG,** Head of IT Data Lake, Siemens Healthineers

CHALLENGE:

Building a new data infrastructure to ensure business continuity
Siemens Healthineers sought to give users comprehensive insight into current supply chain data and accelerate data-driven decision-making. For example, improving forecasting inventory accuracy would lead to improved responsiveness and reduction in inventory waste. To achieve this, the supply chain management (SCM) control tower was created in the form of comprehensible dashboards by pulling in various data sources from sales orders, inventory, shipping, delivery, and more.

However, the SCM control tower was just one use case, and Siemens Healthineers IT's prior data platform couldn't scale its centrally managed IT data lake to meet its global needs. During routine monitoring, the IT Data Lake team noticed significant increases in multi-regional use cases, data consumption, complexity, and resource utilization.

Due to steadily increasing global demands and complexity to extract and transform large amounts of data to achieve digitalization targets, the company's business consumers were affected by usage constraints in a shared environment; proper management and governance across regions was also difficult.

Siemens Healthineers IT needed a new data architecture to solve three main issues: enable users across departments and entities to securely access master data and operational process data, break down legacy silos and consolidate the technology stack while increasing performance, and drive digitalization and automation.

SOLUTION:

Migration from a data lake to a data meshed architecture with Snowflake
Snowflake on Azure enabled Siemens Healthineers IT to design its data architecture with cross-regional access and easy, centralized management. The company leveraged Snowflake technology to establish a data mesh of globally distributed data lakes that upgraded performance and enhanced functionality for worldwide data sharing and distribution.
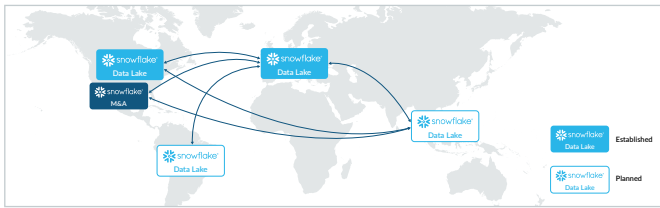
Figure 1. Data meshed network across the globe

By leveraging cloud infrastructure, regional authorities can effortlessly share and replicate data between departments or with Siemens' companies, as well as more easily integrate companies following a merger or acquisition. This data mesh led to better performance, thanks to regional cloud storage, and it offered near-unlimited capacity and power to access data through the flexible scaling and sizing of isolated use case compute resources.

Reduced maintenance and cost for data processing jobs
With Snowflake, Siemens Healthineers can ingest data from various departments as well as from external sources.
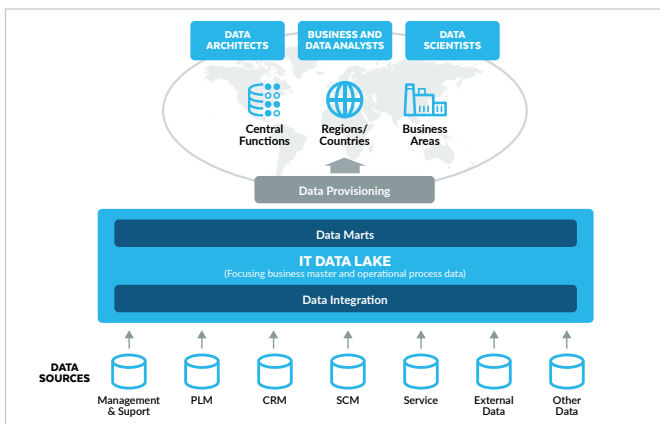

Figure 2. Data architecture

Data processing jobs filter and merge the data within Snowflake, which provides reusable, raw data marts or domain-specific data sets. Business and data analysts can then use this data to gain deeper insights, optimize processes, or even automate processes.

Snowflake enabled Siemens Healthineers IT to reduce maintenance requirements, saving time and money, and also to achieve better performance by removing various bottlenecks, including bandwidth limitations. For the ETL process, a table with more than 260 columns and over 3 million records is unloaded in only six minutes.

RESULTS:

Improved supply chain management for laboratory diagnostics
With this setup, global customer-related sales and logistics data is collected and stored in Snowflake. Then, the data is made accessible or extracted to the SCM control tower—a business UI platform for supply chain data analytics. With dashboards, automated triggers for workflows, and data analytics, the control tower provides a methodology for predictive and preventive activities, as well as at-a-glance information about divergences in the supply chain. It is used to calculate and report global SLA KPIs on customer service levels, order cycle times, and product dating. By scanning analytics across the diagnostics business, the control tower forms the basis for business process optimization and reducing operational costs.

According to Berg, "With Snowflake, we reduced run times of complex data queries and large extractions for the SCM control tower from hours to minutes. It has transformed how we contribute value-adding to supply chain management."

CRM data integration on day one after M&A
Siemens Healthineers acquired and merged with Varian Medical Systems, a medical device company known for treating cancer. On the first day, the CRM data was made available globally. Traditionally, this process took a significant amount of time. Depending on the size of the acquisition target and the amount of siloed data that needed to be extracted, the process could take weeks to months, but in this case, the integration process took only around 20 minutes for the data from a Snowflake Azure instance in the U.S. to be replicated and available in Snowflake Azure in Europe, thanks to Snowflake Secure Data Sharing. This enabled the sales team to analyze the data right away to derive new insights and drive global decision-making, as well as use the data for commercial activities such as cross-selling.

FUTURE:

Data as a key part of the digitalization strategy
Snowflake enables Siemens Healthineers to optimize data-driven business processes on a global scale. In the future, Siemens Healthineers IT plans to enhance this optimization further based on a connector provided by Snowflake to integrate ERP data. It also wants to ingest mass data such as unstructured data, human-generated content, and even IoT data from its factories. Additionally, Siemens Healthineers IT will explore using Snowflake Secure Data Sharing to share data with external partners and across companies in the Siemens Group to leverage the power of data.