



Vitesco Technologies Streamlines Manufacturing Processes with Self-Service Analytics Powered by Dremio

Goals	Solution	Results
Engineering productivity was hampered by an inability to quickly access data and ETL bottleneck from consultants doing data preparation.	Self-service analytics for process engineers and production managers.	Open architecture and intuitive interface improve engineering productivity and allow data access anytime through tool of choice.
Need to access rapidly growing and dynamic production data that is constantly changing as new sensors and equipment are added to plants each day.	Dremio provides flexible solution that enables immediate access to dynamic production data.	Streamlined, automated processes enable self-service data access and discovery.
Ensure strict access control to meet security and governance requirements for where data is stored and accessed, and who can analyze it.	Role-based views and access control for security and governance.	Using Dremio's semantic layer, engineers can discover and access only the datasets they have permission to, maintaining security and governance.

CUSTOMER

vitesco
TECHNOLOGIES

vitesco-technologies.com

GEO

Germany, EMEA

INDUSTRY

Auto, Manufacturing

OBJECTIVES

Vitesco Technologies wanted to modernize manufacturing processes and improve engineering productivity by providing self-service, role-based access to manufacturing production data to their data analysts, process engineers, and yield improvement teams.

DATA ENVIRONMENT

- **Data Sources:** Amazon Redshift, Oracle PostgreSQL
- **Storage:** Amazon S3
- **Compute:** Dremio
- **Applications:** Power BI, MATLAB, KNIME, Python, R, MicroStrategy, Excel, Minitab

Summary

Vitesco Technologies optimizes its manufacturing processes by providing engineers with self-service analytics, using the Dremio interactive data lake engine on their AWS data lake storage. Dremio democratizes data access across the company—reducing labor time for ETL, increasing engineering productivity, and ensuring security and governance.

The Business

Vitesco Technologies, the former powertrain division of Continental, is a leading global developer and manufacturer of modern powertrain technologies for sustainable mobility. With intelligent and reliable system solutions and components for electric, hybrid and combustion powertrains, Vitesco Technologies makes mobility clean, efficient and affordable. Its portfolio includes 48-volt electrification solutions, electric drives, and power electronics for hybrid and battery-electric vehicles such as electronic controls, sensors, actuators and innovative gas exhaust cleaning solutions. Based in Germany, the company has 40,000 employees in around 50 locations for production and development around the world.

The Challenge

As the automotive industry is moving rapidly towards electrification, Vitesco Technologies is continuously modernizing its manufacturing, IT infrastructure and data processes to keep pace. With the exponential growth of production data, Vitesco Technologies wanted to make sure that data was transparent and available to its analysts and engineers to generate insights to improve manufacturing processes.

During the manufacturing process at their production plants, a huge amount of data is recorded and stored in local data warehouses called manufacturing execution systems (MES). With a portfolio of thousands of products, the amount of data generated is growing exponentially. Vitesco Technologies wanted to streamline the process to provide engineers with data to analyze and improve processes without impacting the MES.

Process engineers and analysts were not able to quickly access the data they needed to monitor potential quality issues during various production processes. Engineers had to rely on IT and outside consultants to extract the data, transform and load it into multiple tools for analysis. This led to delays and lost productivity. The team knew they needed to streamline these processes to keep pace with Vitesco Technologies' overall transformation.

The organization also needed strict access control over each data set in each plant. There are complex governance requirements about where data is stored and accessed and who can analyze it.



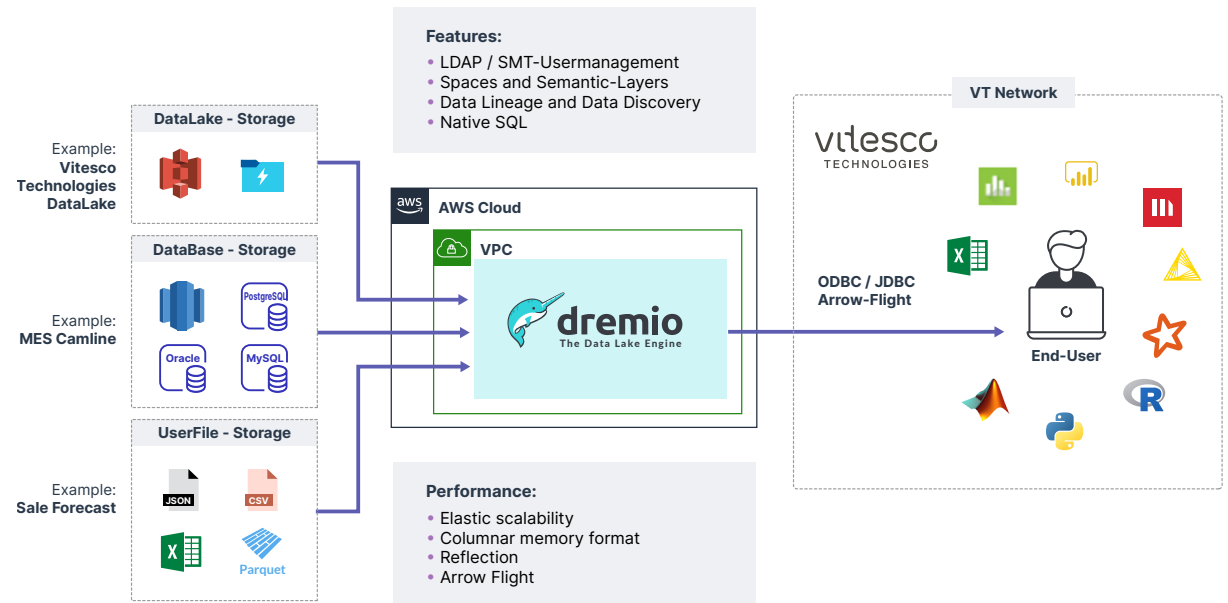
The Solution

Vitesco Technologies was looking for a self-service analytics solution that would give engineers and analysts the flexibility to access and analyze data at any time, using the tools of their choice. They needed a flexible solution because their data model is dynamic, continually adding new machines or measurements. They wanted one common access point to the data in the cloud with different views for different user roles without needing to copy the data. And they also wanted to be able to automate the administration process.

Vitesco Technologies did benchmarking on several products and ultimately chose Dremio because of the high level of automation, the flexible data model, and fine-grained user access controls. Dremio is the bridge between their own data sources and the analytics layer and is the foundation for many custom use cases.

Their Dremio solution includes:

- Data discovery, data lineage, and data access with the Dremio semantic layer
- Self-service analytics for process engineers and production managers
- Role-based views and access control for security and governance





The Results

Eliminated need for external consultants

External consultants were hired to support the local plants for ETL and data analytics. This led to a patchwork of different local solutions that the Vitesco Technologies analysts and engineers could not use without the support of the external companies. With Dremio enabling self-service data access, they no longer need to hire external consultants and can retain the production process knowledge internally.

Speeds up time to insight

Vitesco Technologies wanted to accelerate time to insights about manufacturing processes by providing flexible and rapid access to data whenever employees needed it. They are now able to analyze when they want to, without having to wait for external support to access data. They can quickly automate processes and increase the speed of merging millions of data sets from multiple sources.

Open architecture lets analysts use tools of choice

Analysts and engineers each want to work with their preferred data analytics tools which can range from Excel, KNIME, MATLAB, MicroStrategy, Minitab, Power-BI, Python, R, to Tableau. The open architecture and intuitive Dremio user interface allow analysts to increase productivity by easily accessing data through their tool of choice.

Automates processes to manage dynamic production data

Vitesco Technologies' production data is constantly changing as new machines and sensors are brought online every day. It was impossible to do all these updates manually, and a solution was needed to automate processes that would manage the dynamic production data.

Improves security and governance with semantic layer

With around 30 production plants around the world, there are strict regulations about data security and governance. Using Dremio's semantic layer, engineers can discover and access only the datasets they have permission to, maintaining security and governance. The transportation layer and data are encrypted. It is very important to provide different data views and roles and be able to limit access to certain data.



Scalable centralized data access in the cloud

Vitesco Technologies runs many of the same manufacturing processes across their plants in America, Asia and Europe. In the past, engineers and analysts were only able to access data in their local data warehouses. With Dremio, the company now has all data centrally accessible in the cloud. When query loads increase, they can use Dremio's Elastic Engines to scale up capacity when needed.

Increased efficiency frees resources to focus on innovation

By streamlining and increasing the efficiency of their manufacturing processes, Vitesco Technologies frees up more resources to focus on innovation and accelerate the path to clean mobility.

Looking forward

Vitesco Technologies is running a PoC with Dremio as an integral part of their data lake concept. Engineers and analysts can set up their own Dremio projects and Dremio will work as middleware between an engineer's custom datasets and analytic tools. This will make "dusty" data like logs from test benches or drive cycles much more valuable and provide engineers with data analyses they couldn't do before.

ABOUT DREMIO

Dremio reimagines the cloud data lake to deliver faster time to analytics by eliminating the need for expensive proprietary systems and providing data warehouse functionality on data lake storage. Customers can run mission-critical BI workloads directly on the data lake, without needing to copy and move data into proprietary data warehouses or create cubes/aggregation tables/BI extracts. In addition, Dremio's semantic layer provides easy, self-service access for data consumers, and flexibility and control for data architects. Dremio delivers the world's first no-copy architecture, drastically simplifying the data architecture and enabling data democratization.

Deploy Dremio

[Learn more at dremio.com](https://dremio.com)

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