

Drive Industrial Insight Through Effective Data Management

Big data, streaming, and predictive analytics in connected manufacturing



Unlock the Power of Data

By 2025 Industry 4.0 is expected to generate greater than \$1 trillion in economic value¹ as manufacturing processes, operations and their supply chains become more streamlined, efficient, agile and realize improved productivity, improved uptime and product quality. This extraordinary accomplishment can only be realized by harnessing the data and the digital interconnection of all aspects of the manufacturing value chain; from product development, through connected manufacturing and supply chains to connected products and services. Data provides capabilities, but the challenge manufacturers now face today is managing the volume of data growth, new and diverse data sources, and an increasing reliance on real-time and streaming data.

Cloudera offers an end-to-end data management and analytics platform that enables manufacturers to ingest, process, store, analyze, and model any type of data (structured, unstructured, or semi-structured data), anywhere — at the edge, on premise at the factory floor, or in any public, private, or hybrid cloud. Cloudera offers an integrated suite of proven and open data management tools and analytics engines, to drive insights and action in real-time to enable some of the most compelling manufacturing use cases and drive measurable value for the business.

How Cloudera Enables Manufacturing Organizations

Today, over 200 of the leading manufacturers around the globe, including the top 10 auto manufacturers, rely on Cloudera to enable data-driven use cases across the breadth of the manufacturing value chain—from product development and connected manufacturing to supply chain optimization and marketing. Here is a summary of some of the key data-driven use cases in manufacturing:

Manufacturing Operations	Supply Chain	Marketing, Sales and Service
<ul style="list-style-type: none"> • Process 360 • Quality and yield optimization • Throughput optimization • Process and quality monitoring • Predictive maintenance 	<ul style="list-style-type: none"> • Supplier 360 • Sourcing event optimization • Inventory optimization • Logistics route optimization • Inventory visibility and tracking • Supply chain optimization • Supply chain network design 	<ul style="list-style-type: none"> • Customer 360 • Socially enabled sales • Website optimization • Recommendation engine • Socially enabled service • Quality and warranty analytics

Micron – Semiconductor Fabrication

With Cloudera, the Micron’s foundry created a data lake aggregating data from 50 data sources from 14 semiconductor fab facilities. The fab reduced time to defect detection from seven days to under one hour, thus improving yield via the ability to detect die defects and discontinue die processing from further more refined processes.

Lufthansa Technik

Lufthansa Technik optimizes the entire operation, from predictive maintenance to automated fulfilment solutions and combines profound airline operation expertise, data science, and engineering knowledge into a predictive maintenance solution for its customers.



With Cloudera, we can connect and analyze billions of data points. This includes snapshots of key parameters in real-time from aircraft sensors. We use the Cloudera stack to do machine learning and to predict critical components.”

MARTIN SAKOWSKI
Product Owner, Platform,
Lufthansa Technik

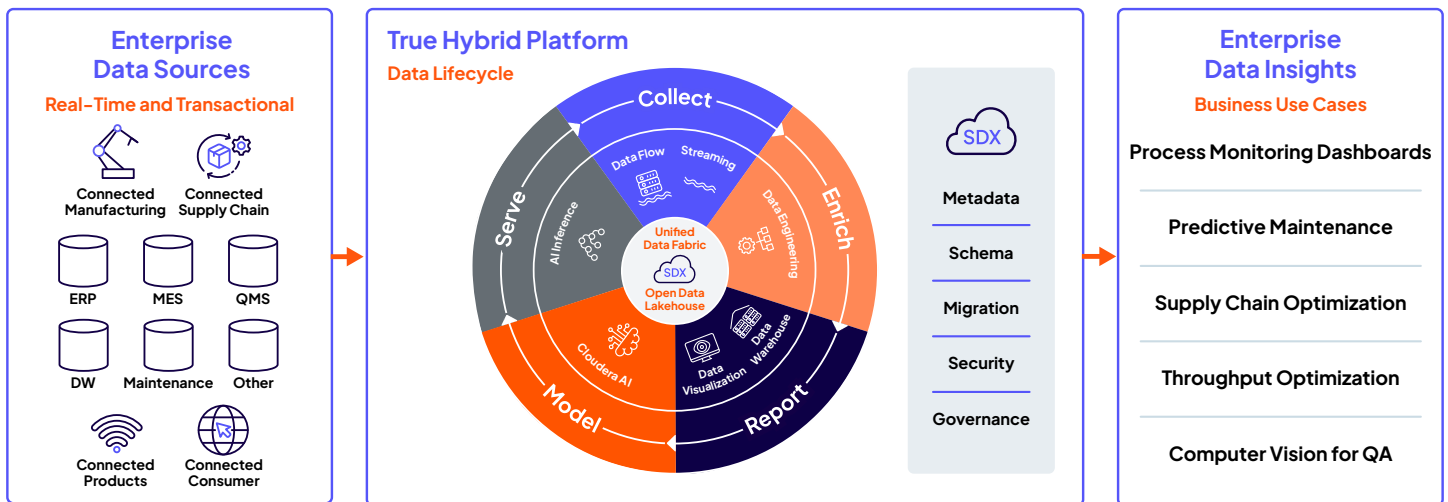
What Cloudera Offers Manufacturing Organizations

- An **end-to-end data management and analytics platform** that can help manufacturers drive insights and action from any data, anywhere, in real-time.
- The ability to **ingest, process and analyze** high volumes of **real-time data** from any source — connected equipment, production sensors, computer vision, historians, ERP & MES systems, historical archives, master data management databases, fleet vehicles, or worker wearables.
- The ability to ingest, train and deploy machine learning models for autonomous vehicles from one common platform.
- Offer massively distributed storage and processing engines for large data sets to execute a wide range of data processing workloads.
- Enable **predictive analytics** or apply **machine learning** algorithms to petabytes of data, while maintaining strict enterprise data security, governance, and compliance, audit trails across on premises and cloud hybrid environments.
- **Glean insights from unstructured data sources** originating from process sensors, computer vision, robotics, or acoustic sensors.
- The ability to build, test, iterate, and deploy machine learning models to enable use cases such as predictive maintenance and autonomous driving.
- Provide multiple analytical options to drive **insights, intelligence**, and action from data at the edge, on premise, or in any public, private, or **hybrid cloud**.

10

10 of the Top 10 automobile manufacturers run on Cloudera

Multi-Function Platform to Drive Outcomes for Manufacturers



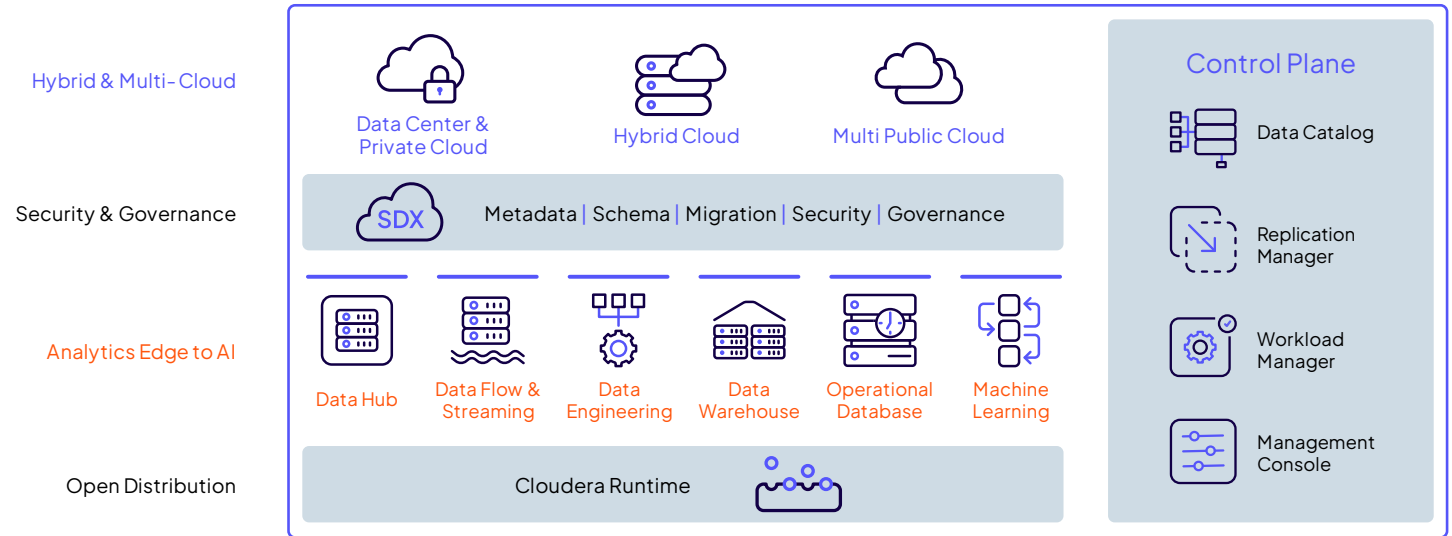
Cloudera

Cloudera is the industry's first true hybrid platform, offering a full range of analytic capabilities from the Edge to AI. Cloudera delivers powerful self-service analytics across hybrid and multi-cloud environments, Cloudera delivers a powerful platform that can collect, process, manage, analyze and model any data, anywhere to drive actionable insights and predictive analytics. And it's built 100% on open source.

Cloudera Shared Data Experience provides enterprise-grade security and governance on all data including metadata, with dedicated, integrated interfaces to manage it. Data security, governance, and control policies can be set once and consistently enforced everywhere, reducing operational costs and business risks while also enabling complete infrastructure choice and flexibility.

200

200 of the world's leading manufacturers run on Cloudera



100% Open

- Open source prevents vendor lock-in
- Open compute enables efficient server, storage, and infrastructure designs for scalable computing
- Open architecture mitigates interoperability concerns
- Open APIs with visualization-agnostic tools
- Open cloud enables a cloud-agnostic approach

Sources

¹ Tom Kelly, Automation Alley, "2019 Technology in Industry Report, Industry 4.0 from Vision to Implementation".

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Cloudera is the only true hybrid platform for data, analytics, and AI. With 100x more data under management than other cloud-only vendors, Cloudera empowers global enterprises to transform data of all types, on any public or private cloud, into valuable, trusted insights. Our open data lakehouse delivers scalable and secure data management with portable cloud-native analytics, enabling customers to bring GenAI models to their data while maintaining privacy and ensuring responsible, reliable AI deployments. The world's largest brands in financial services, insurance, media, manufacturing, and government rely on Cloudera to be able to use their data to solve the impossible—today and in the future.

To learn more, visit [Cloudera.com](https://cloudera.com) and follow us on [LinkedIn](#) and [X](#).