Big Data, Streaming, and Predictive Analytics in Connected Manufacturing

DRIVE INDUSTRIAL INSIGHT THROUGH EFFECTIVE DATA MANAGEMENT

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

Unlock the Power of Data

By 2025 Industry 4.0 is expected to generate greater than $1 trillion in economic value[1] 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 Data Platform 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

- Process 360
- Quality and yield optimization
- Throughput optimization
- Process and quality monitoring
- Predictive maintenance

Supply Chain

- Supplier 360
- Sourcing event optimization
- Inventory optimization
- Logistics route optimization
- Inventory visibility and tracking
- Supply chain optimization
- Supply chain network design

Marketing, Sales and Service

- Customer 360
- Socially enabled sales
- Website optimization
- Recommendation engine
- Socially enabled service
- Quality and warranty analytics

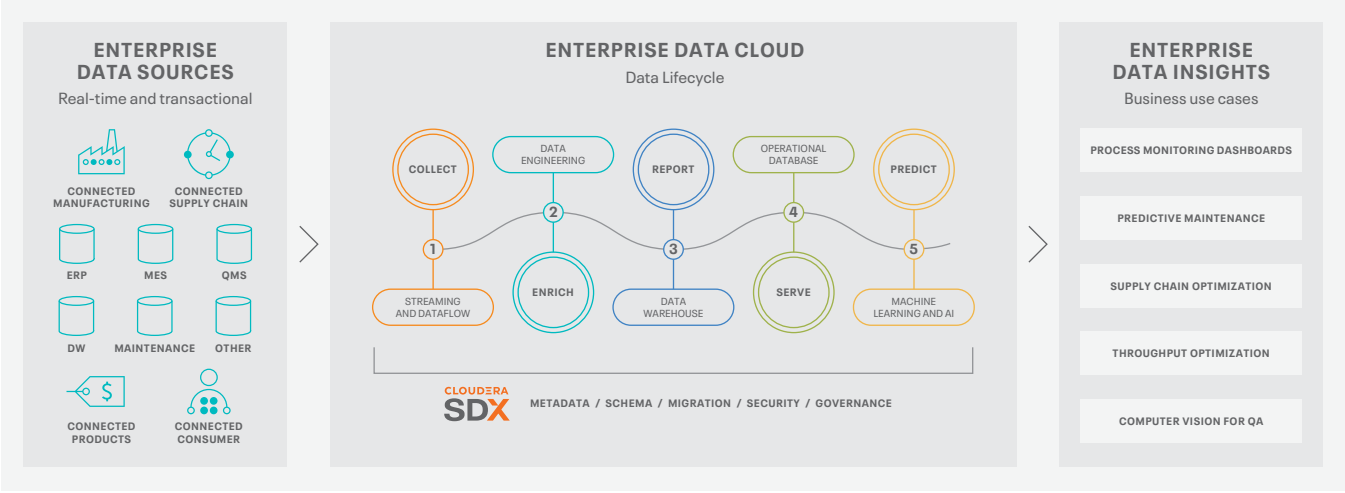
10

10 of the Top 10 automobile manufacturers run on Cloudera

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-premise 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**.

Multi-Function Platform to Drive Outcomes for Manufacturers



200

200 of the world's leading manufacturers run on Cloudera

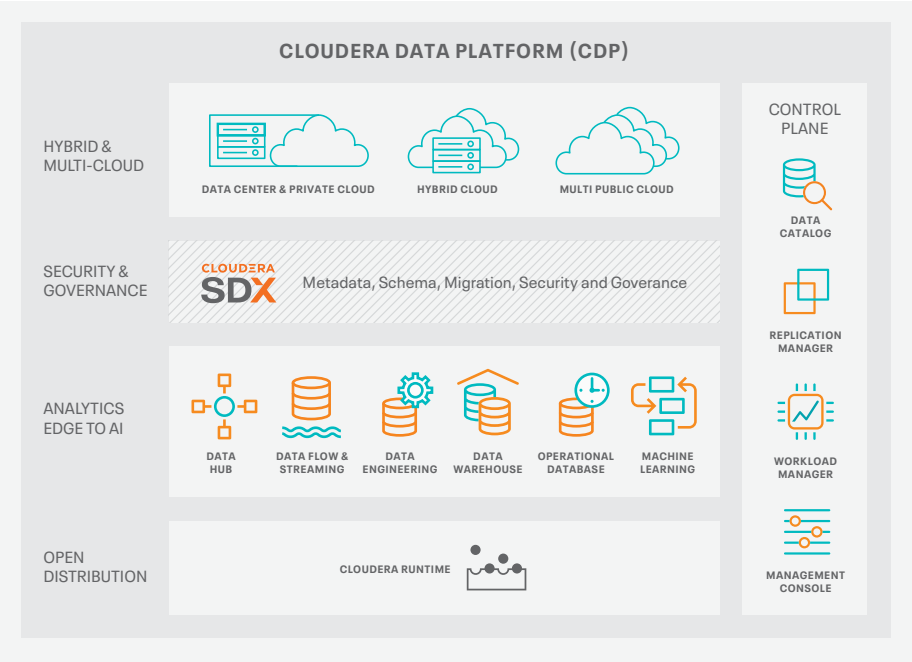
About Cloudera

At Cloudera, we believe that data can make what is impossible today, possible tomorrow. We empower people to transform complex data into clear and actionable insights. Cloudera delivers an enterprise data cloud for any data, anywhere, from the Edge to AI. Powered by the relentless innovation of the open source community, Cloudera advances digital transformation for the world's largest enterprises.

Learn more at cloudera.com

Cloudera Data Platform (CDP)

Cloudera Data Platform is the industry's first enterprise data cloud, offering a full range of analytic capabilities from the Edge to AI. CDP delivers powerful self-service analytics across hybrid and multi-cloud environments, CDP 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 SDX 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.

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, Inc. 395 Page Mill Road Palo Alto, CA 94306 USA cloudera.com