SOLUTION BRIEF

StreamSets

StreamSets for Manufacturing

Overview

The manufacturing industry is in the midst of a data-driven revolution. Whether you want to call it the digital factory, Industry 4.0, or next-generation manufacturing, today's product manufacturers are increasingly instrumenting their businesses, deploying sensor-enabled industrial Internet of Things (IIoT) and other technologies to add intelligence to their operations

The influx of real-time streaming data from this growing array of sources has the potential to make the manufacturing process more efficient, profitable, and sustainable—but only if companies can modernize their data systems fast enough to capitalize on the advances. The resulting data insights can be put to work to help manufacturers make better products, provide new and improved services to their customers, and increase margins through both operational efficiencies and top-line revenue growth.

Challenges

Traditional manufacturing operations are based on physical rather than digital processes. As a result, many manufacturers in today's hyperdigitized, hyperconnected world struggle to keep pace with fast-changing customer expectations, to accurately forecast inventory and demand, and to predict when or why particular parts might break. To optimize functions ranging from supply-chain efficiency to predictive maintenance, manufacturers are increasingly instrumenting their operations and gathering real-time customer data. But they quickly find it hard to manage the variety of data being generated.

IT teams, the ones responsible for handling the data deluge, too often find themselves working with systems unable to process streaming and sensor data. As a result, the data is not analyzed in time for company executives to make the decisions that can help their businesses become more responsive to the needs of fast-shifting markets.

Without the right data ingestion strategy and systems in place, manufacturing companies find it difficult to:

- Optimize their supply chains.
- Implement IIoT solutions.
- Deploy predictive maintenance solutions.

Some of the reasons that they struggle to achieve these goals include:

- Many manufacturers lack access to the talent needed to implement data engineering, advanced analytics, or IoT initiatives.
- Most open-source solutions are not mature enough to meet enterprise requirements for instrumentation as part of predictive maintenance processes.
- IoT communications must be bi-directional, which is different than traditional manufacturer-to-customer communication paradigms.
- Some IoT processing must happen at the edge, and edge processing is still in its formative stages of development.
- Navigating the landscape of available data ingestion and processing tools can be daunting, especially for manufacturers not yet comfortable with all the latest technologies.

Manufacturers of all kinds are finding that they need to fundamentally change the way they do business, and they need to change quickly. At the heart of this transformation must be a new strategy for handling streaming data.

INDUSTRY EXAMPLES

Industrial IoT

In IIoT environments, communications must be bi-directional, and at least some IoT data processing must happen at the edge. Organizations deploying IIoT solutions need to be able to instrument their edge and batch processing jobs without hand coding. They also must manage complex data topologies as well as data-related service-level agreements (SLAs), mixing IoT data with traditional data sources.

Predictive Maintenance

Predictive maintenance is one of the most promising IoT benefits. That's because companies spend millions of dollars each year on unexpected repairs and breakdowns, operating purely on guesswork to understand when and why particular parts fail. Data, including streaming data, from connected devices can deliver the information needed to achieve predictive maintenance.

Supply Chain Analytics

To optimize their supply chains, organizations need a new approach—one that goes beyond core transactional and ERP systems, encompassing unstructured data that can be ingested and acted on in real time. By harnessing real-time data, companies can be proactive in their approach to optimizations and supply-chain forecasting.

Data-Driven Products

When all data is readily accessible for analysis, business and engineering end users can extract for themselves the insights they need to improve current products and design the next product generation.

Operations Optimization

Manufacturers need a comprehensive view of what is going on at every point in the production process, so they can make real-time adjustments to maintain an uninterrupted flow of finished goods and avoid defects. The ability to view how the end-to-end process is running enables them to address bottlenecks in real time. It also reduces the possibility of human error.

StreamSets

INDUSTRY EXAMPLES

Proactive Quality Assurance

Changes often cost more to correct during maintenance than in pre-production. Companies want to reduce development timelines, respond to performance concerns in real time, and eliminate defects prior to manufacture.

Risk Management

By having visibility into supplier quality levels and other performance metrics, manufacturers can develop a clear strategy toward their supplier portfolio—armed with insightful data to help them succeed in supplier contract negotiations.

Logistics

Logistics departments manage a massive flow of goods, which creates vast data sets. For millions of shipments every day, origin and destination, size, weight, content, and location are all tracked across global delivery networks.

ABOUT STREAMSETS

StreamSets transforms how enterprises flow big and fast data from myriad sources into data centers and cloud analytics platforms. Its DataOps platform helps companies build and operate continuous dataflow topologies, combining award-winning open source data movement software with a cloud-native Control Hub. Enterprises use StreamSets to enable cloud analytics, data lakes, Apache Kafka, IoT, and cybersecurity.

Founded by Girish Pancha, former chief product officer of Informatica, and Arvind Prabhakar, a former engineering leader at Cloudera, StreamSets is backed by top-tier Silicon Valley venture capital firms, including Battery Ventures, New Enterprise Associates (NEA), and Accel Partners.

For more information, visit streamsets.com

Solution

StreamSets helps manufacturing companies build, deploy, and operate their critical real-time data pipelines, so they can use the data generated by increased instrumentation to optimize key manufacturing processes.

Optimize supply chains. The StreamSets platform provides an easy-to-use interface that enables a wide array of common tooling for building and deploying data pipelines. These data pipelines can feed data teams to bolster fast adoption of data analytics—which optimizes the acquisition, distribution, and building of products. StreamSets Data Collector Edge lets manufacturers build and operate continuous ingestion pipelines for IoT endpoints, and StreamSets Control Hub enables management of pipelines across the business.

Implement IIoT solutions. StreamSets connects manufacturing systems with IT operations, enabling the data pipelines necessary for IIoT solutions to yield better products and new and improved services. StreamSets Control Hub lets manufacturers manage complex data topologies and define data service-level agreements (SLAs).

Deploy predictive maintenance solutions. StreamSets allows manufacturers to build data pipelines that flow from edge collectors to the data repositories where widespread data analytics can happen. Parsing out noisy data created by edge processing systems, StreamSets helps deliver clean and reliable data, including data in motion, to analytics tools. StreamSets Data Collector Edge, which has wide protocol support, deploys in less than 5MB to build and operate continuous ingestion pipelines for IoT endpoints.

StreamSets Benefits

StreamSets enables manufacturing companies to:

- Comprehensively manage data pipelines across the business, including edge, cloud, and core systems.
- Deploy new analysis initiatives, because StreamSets opens up data engineering to employees with varying skill sets.
- Identify performance bottlenecks.
- Easily develop IoT and edge processing solutions with a simple software development kit (SDK).
- Understand and predict outliers based on real-time inputs.
- Instrument edge and stream processing jobs without hand coding.
- Use two-way communications to trigger edge analytics within data flow pipelines.

Closing

StreamSets helps companies that manufacture products to embrace the modern tools they need to remain competitive. Manufacturers using StreamSets can harness streaming data to achieve important optimizations, whether building and managing IIoT systems, making supply chains more efficient, or deploying data-driven services that encourage customer satisfaction while saving operational costs.

Find out more about how StreamSets can help manufacturing companies leverage streaming, real-time data to stay competitive in a fast-changing world. Contact a StreamSets representative today.