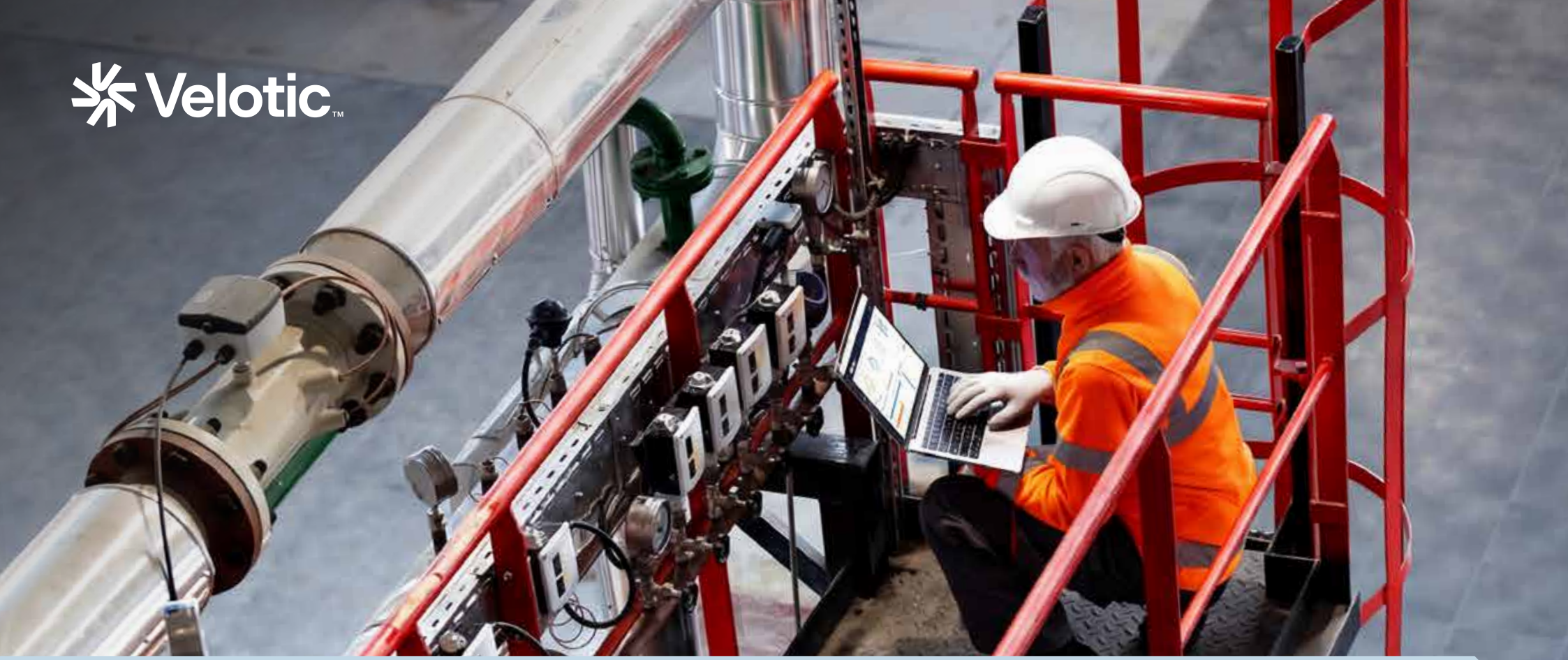


Kepware®

How Manufacturing Leaders are Building the Foundation for AI-Ready Operations

Manufacturers are investing heavily in AI, analytics, and digital transformation—but many are still struggling to turn those investments into meaningful, scalable outcomes.

The challenge isn't a lack of data. In fact, organizations today are swimming in operational data generated across machines, systems, and sites. The issue is that much of this data remains fragmented, siloed, and disconnected, making it difficult to access and contextualize effectively for decision-making.

"Around 80% of a data scientist's energy is still spent on data cleaning... pouring data into a big data lake is not helpful unless the data is contextualized."

—Robert Langbein, Sales Director, Aveva

As a result, manufacturers are often data-rich but insight-poor, with AI initiatives repeatedly stalling due to an inability to reliably connect, standardize, and contextualize OT data at scale.

How Manufacturing Leaders are Rethinking Data from the Ground Up

Leading manufacturers are addressing this gap by rethinking how data is managed—not just at the point of analysis, but right from the source.

Rather than focusing solely on downstream analytics or cloud platforms, these organizations are prioritizing how data is connected, structured, governed, and delivered across their operations. At the core of this transformation is standardized connectivity. By establishing a consistent way to access and deliver data from diverse devices and systems, organizations can:

- Break down silos across legacy and modern environments
- Normalize and secure data across formats and protocols
- Create a single, consistent source of OT data across the enterprise
- Enable scalable, event-driven data flows across systems and sites

Today, leaders are achieving these goals without replacing existing infrastructure. Instead, they are improving how data flows across what already exists—unlocking new value from current systems while building a scalable foundation for AI.

This shift—from disconnected data to standardized, contextualized insights—is what enables AI to move from isolated experimentation to operational impact. Across industries, leading manufacturers are already demonstrating what this looks like in practice—overcoming data fragmentation, standardizing connectivity, and creating the conditions for AI to deliver measurable value at scale.

Global Logistics, Transportation, and Delivery Services Company

To keep pace with growing demand and avoid costly infrastructure expansion, this global logistics leader needed to unlock more value from its existing operations. However, fragmented systems and limited visibility into operational data made it difficult to optimize performance at scale or proactively address disruptions.

Challenge

The organization struggled to maximize output from existing distribution hubs without additional investment, while unplanned downtime continued to disrupt operations. Disparate, heterogeneous devices and systems made it difficult to access and leverage operational data, limiting both visibility and the ability to act proactively.

Approach

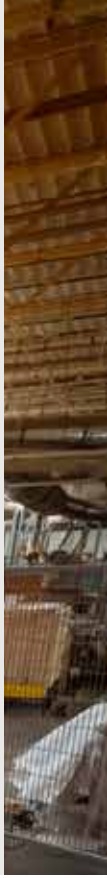
The company enabled access to operational data across diverse systems and devices, standardizing how data was ingested, accessed, and shared across environments. By implementing a scalable, real-time and event-driven architecture and applying AI and machine learning capabilities, it improved its ability to predict issues and support more informed operational decision-making.

Outcomes

As a result, the organization realized **tens of millions of dollars in annual value,** increased throughput across existing architecture, and reduced downtime through predictive, data-driven insights.

Electrolux

With a global footprint spanning dozens of brands, factory sites, and markets, Electrolux is continuously driving improvement through data-driven operations. However, the scale and complexity of its production ecosystem made it difficult to consistently access and leverage machine data across sites.



"Connected manufacturing isn't a typical challenge for IT professionals. For our team, connecting to OT systems literally meant speaking a different language."

—Kwabena Hobbs, IT Automation Connectivity Lead NA, Electrolux

Challenge

Electrolux faced significant challenges connecting to factory machine data across a highly complex global production ecosystem. Each site included hundreds of machines with varying ages, manufacturers, and communication protocols, making connectivity a point-to-point effort. As a result, collecting data was manual, time-consuming, and prone to human error, ultimately limiting the organization's ability to access and use data to improve performance metrics.

Approach

To overcome these challenges, Electrolux pursued a standardized, scalable connectivity layer to connect machines across factories and bridge OT and IT systems. This approach enabled the organization to draw data into a central repository and deliver it to the systems and users that needed it, supporting automated communication and monitoring.

Outcomes

With standardized connectivity in place, Electrolux was able to reduce scrap, automate overall equipment effectiveness (OEE) to drive efficiency improvements, and speed up response to downed equipment. These improvements helped reduce production overhead, eliminate defects, and strengthen the supply chain.

Global Fastener Manufacturer

To keep pace with growing demand while managing a shrinking labor pool, this global manufacturer needed to improve production performance and gain better visibility into operations. However, limited access to machine data made it difficult to consistently measure and optimize key performance metrics.

Challenge

The organization needed to maximize throughput amid growing product demand and a shrinking labor pool, while also calculating OEE and other performance metrics such as cycle count and machine status. At the same time, it needed to achieve this without relying on vendor-locked, packaged MES systems with proprietary sensors.

Approach

To approach these challenges, the company bridged OT and IT systems across all devices, including both legacy and modern equipment. It enabled data ingestion and front-end application management while leveraging cloud infrastructure for storage, real-time monitoring, and historical trend analysis. It also established centralized configuration and visibility across its connectivity environment.

Outcomes

This approach resulted in a **5% efficiency gain,** improving overall operational performance and enabling greater throughput across production. By providing better visibility into machine data and performance metrics, the organization was able to more consistently monitor and optimize operations.

What These Leaders Are Doing Differently

Each of these organizations faced a different operational challenge—maximizing throughput across distribution hubs, bridging OT and IT across a global production ecosystem, and calculating performance metrics without vendor-locked systems. But the path forward looked remarkably similar: standardize how data is connected, accessed, and delivered across the enterprise. And in each case, Kepware was the connectivity foundation that made it possible.

By building a robust connectivity architecture, these manufacturers were able to:

- **Connect disparate systems and devices into a single, consistent source for OT data**—eliminating the fragmented, point-to-point integrations that limited visibility and scalability.
- **Normalize and secure data across environments at scale**—bridging legacy and modern equipment, diverse protocols, and multiple sites without ripping and replacing.
- **Create a scalable, governed foundation for Industrial Data Ops** that is simpler to maintain, easier to deploy, and built to support what comes next.

These organizations aren't outliers. They reflect a broader shift among manufacturers who are pulling ahead—not by waiting for a perfect future-state architecture, but by taking pragmatic steps today to improve how data flows across their operations. With Kepware fueling a robust connectivity backbone, they're turning fragmented data into consistent, trusted inputs and unlocking new value from the systems already in place.

Meanwhile, organizations that delay these foundational changes risk staying stuck in the same cycle—limited visibility, fragile integrations, and AI initiatives that stall at the pilot. The manufacturers setting the pace aren't waiting for better intelligence. They're building the architecture to use it from the ground up.

Build the Architecture for What's Next

Explore more on how modern architectures turn raw OT data into actionable intelligence in Velotic's latest white paper.