



# Case Study

KTH outsmarts downtime  
with a network reinvention

Discover how [→](#)

# KTH outsmarts downtime with a network reinvention

By reimagining network connectivity at its Ohio plant, this automotive supplier improved production and now has a foundation to support advanced automation and real-time visibility.

## Case Study



## Customer

KTH Parts Industries is a Tier 1 automotive supplier that manufactures stamped, welded and assembled metal components, such as car frames and panels.

Over its decades-long history, KTH has become a major player in the automotive industry, serving automotive giants like Honda, General Motors and Tesla.

To do this, KTH operates across two plants in Ohio, with additional manufacturing facilities located in Leesburg, AL, and Shelburne, ON.

The company prides itself on operational excellence and continuous improvement, always looking for innovative ways to support increasingly complex manufacturing processes.

## Challenge

Due to surging growth at its main Ohio facility, KTH was adding new production lines at a rapid pace. But this expansion exposed significant network challenges. The core network was designed with a single, flat Layer 2 architecture and was equipped to handle only basic manufacturing operations.

As production escalated, new technology and automation were introduced into the organization's operations — and network performance became a bottleneck. Device counts soared to 2,000, with plans to add more in the coming months and years. The existing digital infrastructure could no longer keep up.

As a result, the plant experienced 14 unexpected instances of extended downtime in the span of a few years and lacked visibility into the connections causing production issues.

“The impact on rising cyber insurance premiums was a significant factor in ROI and justification discussions.”

— **Rick Pennavaria,**  
Belden's Automotive Manufacturing  
Solutions Sales Manager

At the same time, its customers were raising new questions about cybersecurity. “One of the primary drivers behind this OT network investment was the growing pressure from major OEMs to strengthen cyber resilience and reduce supply chain risk,” explains Rick Pennavaria, Belden's automotive manufacturing solutions sales manager. “The impact on rising cyber insurance premiums was a significant factor in ROI and justification discussions.”

“We wanted to have a bird’s-eye view so we could see what was happening on our network, quickly identify and troubleshoot problems as they arise.”

— Jim Schienda KTH Technical Support Group Director

KTH needed a trusted partner that could help them securely connect machines, people and data for smarter plant operations. The plant needed to prepare for future innovations like:

- Predictive and remote maintenance
- Asset and product traceability
- Monitoring for operational performance and quality assurance

“We wanted to have a bird’s-eye view so we could see what was happening on our network and quickly identify and troubleshoot problems as they arise,” explains KTH Technical Support Group Director Jim Schienda.

### Collaboration & discovery

Based on a trusted referral from an electrical and automation solutions provider, KTH reached out to Belden in hopes of improving network stability.

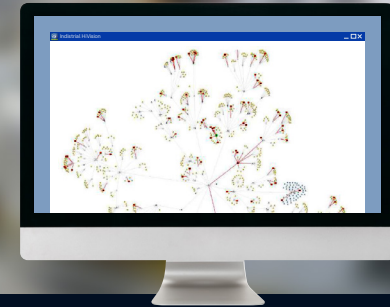
Belden first attempted to deploy firewalls to segment the plant’s network. While this approach should’ve been effective, inherent network latencies introduced unanticipated issues.

That’s when Belden knew it was time to dig deeper to find out what was really going on behind the scenes.

The process began with a gemba walk to uncover network vulnerabilities, operational pain points and bottlenecks, and their root causes. From there, a network assessment was created, outlining areas like:

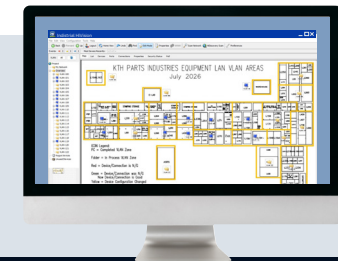
- Uptime of critical assets
- Material flows, processes and bottlenecks by zone
- KPIs by zone (OEE, MTBF, MTTR, etc.) and the business metrics that need to improve
- Equipment maintenance requirements and costs
- Software systems supporting material handling and real-time operations
- The use of analytics to support daily operations

### Network assessment: before & after



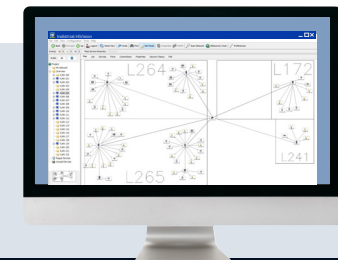
#### 1 Assessment findings

The initial HiVision view revealed thousands of connected devices with minimal segmentation, limiting visibility and making individual asset management difficult



#### 2 Assessment report & recommendations

The network assessment produced a detailed report recommending segmentation into VLAN zones aligned to the plant layout to improve fault isolation.



#### 3 Zoned & redundant network

The final HiVision view reflects clearly defined VLAN zones, increasing redundancy and limiting the impact of faults to specific areas.

“I had to be able to explain how much this project was going to save us long-term, and Belden helped us determine that ROI. It was an impressive number.”

— **Jim Schienda** KTH Technical Support Group Director

## Solution

Based on what the gemba walk and resulting assessment revealed, Belden developed a tailored plan with step-by-step, actionable recommendations to minimize infrastructure investment while maximizing effects.

To show KTH how a new solution would work in its environment, Belden implemented a proof of concept with a test robot/cell so the plant’s team could get to know the technology first-hand. After seeing the results, KTH was ready to move forward.

To modernize and segment the plant’s industrial network infrastructure, Belden orchestrated a strategic overhaul of KTH’s network.

Instead of a fragile, flat Layer 2 topology, the plant now has a robust, segmented architecture built on VLANs and modernized switch hardware. Managed industrial Ethernet switches and redundant network paths replaced unmanaged equipment to improve visibility, reliability and uptime.

By separating the plant’s network into 22 zones, each can be independently managed to reduce the risk of plant-wide downtime and enable targeted troubleshooting and upgrades. Because production zones and critical assets are isolated, network congestion and fault propagation are limited. This mitigates the problems often found in unsegmented OT environments.

Each network segment follows a repeatable “template” so future lines and sister plants can easily re-deploy the design without re-engineering, making standardization straightforward and cost-efficient.

Deployment was carried out in carefully planned phases that coincided with scheduled shutdowns.

To overcome budget hurdles, Belden worked closely with channel partners and KTH to allocate costs to its operating budget so the project didn’t have to be covered by funds set aside for capital expenses.

“I had to be able to explain how much this project was going to save us long-term, and Belden helped us determine that ROI,” explains Schienda. “It was an impressive number.”



➤ To modernize and segment the plant’s industrial network infrastructure, Belden orchestrated a strategic overhaul of KTH’s network.

## Impact & results

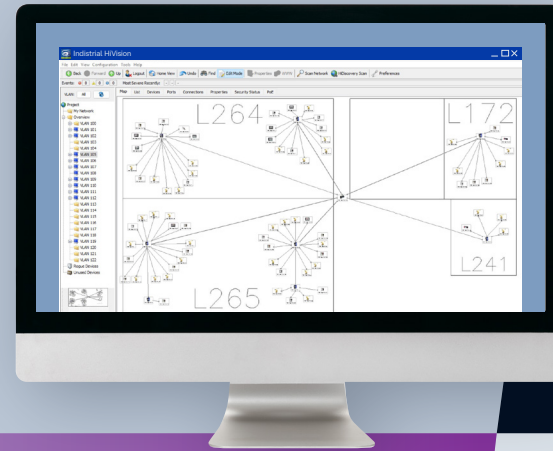
Belden’s complete connection solutions transformed KTH’s legacy, flat network into a secure, segmented, managed and scalable industrial Ethernet infrastructure that supports its ongoing digital transformation.

Because operational incidents are confined to isolated zones, KTH’s instances of unplanned downtime have been reduced.

“Rebooting everything was the only option to get us back up and running.

Now, with the segmented network, if an issue comes up in one area, it only affects that zone, not the whole plant.”

— Jim Schienda KTH Technical Support Group Director



“If I accidentally created a loopback in the network, it would take down the entire plant before,” explains Schienda. “When that happened, we’d have to go around and power-cycle all the robots because the CPU locked up from the overwhelming number of packets per second. It overloaded the system until it shut down. Rebooting everything was the only option to get us back up and running. Now, with the segmented network, if an issue comes up in one area, it only affects that zone, not the whole plant.”

With network visibility making it possible to proactively monitor for network disruptions and hidden failures, the technical team can see what’s connected to the network (and where) for fast troubleshooting and resolution. Production output has also improved as a result of better reliability.

In addition, the plant is prepared for the connectivity demands of Industry 4.0, with a solid foundation to integrate high-bandwidth technology, such as robots and vision systems. Integration of new devices and expansions to include additional lines can be done smoothly without interrupting operations.

By taking a phased, budget-conscious approach, KTH has been able to continue modernizing without costly, large-scale disruptions.

New lines are now being upgraded with the same solution, and other KTH plants (are exploring the possibility of adopting the same approach.

Today, the plant stands as a model for network modernization in manufacturing, with Belden’s partnership as a driving force behind its commitment to operational excellence and future growth.

And KTH’s customers can be confident that their own operations and supply chains are protected, since KTH’s team and plant are now equipped to isolate problems, minimize risk and respond to rising cybersecurity demands.

# About Belden

Belden Inc. delivers complete connection solutions that unlock untold possibilities for our customers, their customers and the world. We advance ideas and technologies that enable a safer, smarter and more prosperous future. Throughout our 120+ year history we have evolved as a company, but our purpose remains – making connections. By connecting people, information and ideas, we make it possible. We are headquartered in St. Louis and have manufacturing capabilities in North America, Europe, Asia and Africa.

## What’s hiding in your network?

KTH uncovered 2,000+ devices, limited segmentation and hidden risk.

**See what a Belden network assessment reveals inside your plant.**

Request Your Network Assessment →

Scan the QR code



or visit:

[solutions.belden.com/advanced-manufacturing](https://solutions.belden.com/advanced-manufacturing)

follow us on



© 2026 | Belden and its affiliated companies claim and reserves all rights to its graphic images and text, trade names and trademarks, logos, service names, and similar proprietary marks, and any other intellectual property rights associated with this publication. BELDEN® and other distinctive identifiers of Belden and its affiliated companies as used herein are or may be pending or registered or unregistered trademarks of Belden, or its affiliates, in the United States and/or other jurisdictions throughout the world. Belden’s trade names, trademarks, logos, service names, and similar proprietary marks shall not be reprinted or displayed without Belden’s or its affiliated companies’ permission and/or in any form inconsistent with Belden’s business interests. Belden reserves the right to demand the discontinuation of any improper use at any time.