THE CHALLENGE

Unknown Source of the Problem

Unexpected production losses were increasing, but the source of the problem was still unknown. Communication disruptions between factory floor assets would prompt system shutdowns causing time-consuming repairs.

Aging Infrastructure

Equipment and communication networks were failing due to the network's aging infrastructure. Outdated wiring and Ethernet was threatening the plant's overall production efficiency - putting the business at risk!

Restoring Production Performance

Solution: Secure, Sustainable, and Scalable System

A new copper and fiber network was installed in parallel to the existing network allowing for a seamless migration and uninterrupted line production. The updated network provides the desired performance results and delivers a secure, sustainable, and scalable system that eliminates production downtime issues.

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EXECUTIVE SUMMARY

Upgrades to Old Network Restore Production Performance

Client: Global Beverage Manufacturer

Challenge:
Update industrial network to fix communication disruptions between factory floor assets while plant is in full production.

Solution:
Select a partner to evaluate and design a network to improve bandwidth utilization efficiency across all manufacturing with no interruption of production.

Results:
- Reliable and expandable infrastructure was designed, configured, and installed to increase efficiency and support future growth.
- Network sustainability was simplified with updated standard technology, methodology, and network health diagnostics.
- Plant production was not interrupted.

Aging Infrastructure Threatening Production Efficiency

As unplanned production losses piled up, the operations technology manager at a global beverage manufacturer was struggling to identify the source of the problems. Intensive investigation led him to see the communication disruptions between factory floor assets. Systems would go down, necessitating time-intensive trouble-shooting and increasing everyone's stress.

Failing equipment and communication networks, some of which were 20+ years old, proved to be the culprit. Like many plants, the network's aging infrastructure of wiring and Ethernet had not been upgraded to serve the manufacturer's changing needs, and it was causing timing issues. New components were continually being "bolted on" using multiple protocols, and the network was close to collapsing. To further complicate matters, there was no in-house expertise to upgrade the network.

The operations technology leader faced a common problem in today's manufacturing environment: aging infrastructure was threatening his plant's overall production efficiency, putting the business at stake.

Selecting the Right Partner

The operations technology manager reached out to Polytron make the right capital investment for the health of his company. Polytron evaluated and designed a network architecture to improve overall bandwidth utilization efficiency across all manufacturing areas. The enhancement was critical to supporting future growth.

This would require a new high-performance copper and fiber system that would exceed the manufacturer's requirements for enterprise, industrial networking, and security standards.

Polytron's role was to:
- Design, configure and install a reliable, expandable and robust infrastructure focused on increasing efficiency and future growth
- Simplify sustainability of network with updated standard technology, methodologies and network health diagnostics. Maximize the benefits of plant-to-business network convergence
- Allow the plant to continue full production during network installation

Steps to Network Convergence

Polytron followed its proven Roadmap to Network Solutions working through the following steps:

- First, conduct a network audit using diagnostics
- Next, create a design plan using industry standards and best-practices
- Establish an implementation schedule. Since the project would need to be invisible to plant operations with minimal disruptions, the installation and network migration schedules were constantly adjusted to the plant's production schedule.
- Review the design plan with all manufacturer stakeholders for alignment- a crucial step, since the project touched every area of the plant. Support was needed from IT, all department managers, plant engineering, and control support technicians.
- Finally, validate to ensure all assets are communicating as designed

Requirement: Allow Plant to Continue Full Production During Implementation

The operations technology leader couldn't afford line downtime while the network was being replaced, so the team designed an implementation plan to allow uninterrupted production:

Step 1: Install and configure new fiber network of optic cabling. Validate by testing communication with plant assets before moving forward.

Step 2: Migrate all the plant's industrial servers to the new network. This step required the most resources from plant's IT support group. Servers were validated and stabilized.

Step 3: Migration of operational assets were then implemented from low risk to high risk. Each area was validated before moving on to the next operational area.

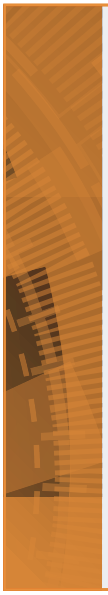
Step 4: With migration complete, the team conducted a Network Health Assessment connecting to the core switch and testing to check for any issues and/or communication disruptions.

Step 5: In order to reduce migration risk because of old, dated medium, the project team installed all new copper and fiber in parallel to the existing network.

This parallel installation allowed the project team to reduce installation risk, continue with day-to-day operations and have a seamless migration transition.

Continuity of Performance

Polytron enabled the operations team by delivering a streamlined training protocol to each operations support group as identified by the Project Roadmap. As one area was validated and running smoothly, hands-on training and hand-off was conducted before moving on the next area.



"To me, the greatest sign of success on network upgrade projects is when the execution is completely transparent to the plant. This project has been transparent – aside from project updates, they [the plant] were oblivious to the fact that we have migrated the servers. Great Job – Polytron Team!"

—Principle Engineer

Network-Related Production Downtime Issues Eliminated

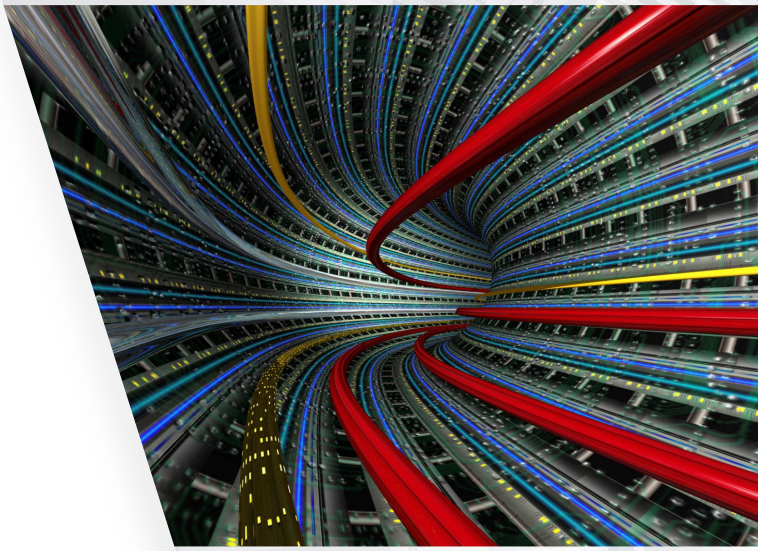
The updated network provides the desired performance results and delivers a system that is secure, sustainable, and scalable. Polytron's experience and expertise has allowed the operations technology manager to eliminate costly and stressful network-related production downtime across the plant line.

The updated network also increased the plant's networking support structure, ease of maintenance, and introduced new technologies that can be used in future plant projects.

About Polytron, Inc.

Since 1983, Polytron has been an industry leading system integration and engineering consulting firm delivering a broad spectrum of innovative manufacturing solutions. Polytron serves manufacturers in the food, beverage, consumer packaged goods, chemical, and life sciences industries across North America.

To learn more about Polytron, visit us online **(www.polytron.com)** or contact us **(www.polytron.com/contact-us)** to talk to a specialist today.



Roadmap to Network Solutions