Case Study

Large U.S. Beverage Bottler Implements Advanced Wired and Wireless Networks to Support Supply Chain Automation and Enhances Security

The client

The client is a large, family-owned provider of low-cost, high-quality purified bottled water, sparkling water, vitamin-enhanced water, and sports drinks within the U.S. Headquartered on the West Coast, it has operations in the U.S. and Mexico with 2,000 employees and annual revenue of more than $2 billion.

The challenge: Upgrade the wireless network to enable seamless operation for autonomous forklifts and enhance network security throughout the company

The beverage industry is hyper-competitive. As a result, an organization's ability to provide products at low cost while maintaining exceptional quality is essential to success. For the client, technology plays a major role in achieving that objective. In particular, the company is on the leading edge of supply chain optimization, with its warehouses and production facilities almost fully automated. Product is taken from the production area, stored, and ultimately loaded onto trucks using automated forklifts that rely on low-latency, reliable Wi-Fi coverage.

Prior to Insight's engagement with the client, it was not uncommon for the autonomous forklifts to have hundreds of "faults" per day, per warehouse due to wireless issues, resulting in manual human intervention. Some of these faults resulted in a complete shutdown of a particular unit requiring a 10–15 minute manual reset. Plus, this shutdown often created a ripple effect, with one autonomous forklift impeding the work of others, thereby backing up or stopping production completely in some cases. The end result was delay, a decrease in the number of trucks loaded and departing each day, lost revenue, and growing frustration from staff and management.

In addition, C-level executives were concerned that unrestricted internal network access from conference rooms and other public areas put the company's intellectual capital at a risk. Existing wireless LANs were also identified as lacking proper security measures.

Industry:

Manufacturing

Insight provided:

- In-depth assessment of wireless and wired networks
- Workshop to identify business goals, clarify strategic vision, and draft a roadmap
- Solution planning, design, and implementation
- Cisco® network management, wireless controllers, and access points
- Cisco ISE with customized policies
- Cisco SD-WAN solution dramatically improving WAN performance

Insight services:

- Network/security assessment
- System architecture/design
- Solution deployment

The solution: Advanced Cisco wireless and wired network and security systems

Insight began by developing a detailed vision for technology and how it could enable the client's business to meet their objectives. From there we focused on analyzing the client's wireless coverage from a radio frequency (RF) and technology perspective. We also learned that a lack of visibility into system status made it difficult and time-consuming to research and resolve issues. Plus, their existing technology was making it hard to bring new locations online efficiently.

As the client was already using Cisco products for their wired solution, we unified their entire campus architecture with the deployment of Cisco wireless controllers and Cisco 3700 Series APs with a mix of both internal and directional antennas at each warehouse. Not only did this improve performance, but we quickly reduced infrastructure costs for the client.

Having earned the client's trust with the successful enterprise-wide wireless deployments, our team was asked to design and deploy a customized Cisco ISE solution to address security concerns. For example, before the new wireless solution was implemented, outside delivery drivers could connect while parked at a loading dock and gain unrestricted access to the company's network. Applying 802.1X security quickly allowed unauthorized devices to be excluded from the network.

In addition, using Cisco Prime and ISE, we gave management improved visibility into the company's security posture. Our team also provided expertise to improve the client's existing Cisco SD-WAN solution. The recommendations and solutions focused on increasing reliability and performance for remote sites. Deploying industry leading Cisco SD-WAN solution dramatically improved WAN performance across the company's numerous ISR 4000 Series routers.

The benefits: Business process automation, near-zero production interruptions, advanced network security, and support for rapid corporate expansion

Today, daily faults in the company's autonomous forklifts have been reduced by 95%, with the remainder rarely related to wireless connectivity issues. This enhancement has allowed autonomous forklifts to be rolled out enterprise wide, advancing the business. As a result, the number of work delays and stoppages has plummeted, allowing for greater productivity and happier internal stakeholders. The company's executives are also pleased with the enhancements that have been made to network visibility and security — changes that are providing better protection of sensitive data while still allowing access when, where, and for whom it is appropriate. Taken in total, the improvements are helping the company operate more efficiently and effectively in its existing facilities, and the upgrades provide scalability that helped the client to meet future expansion objectives.

Benefits:

- Systematic improvements to support advanced automation
- Efficient and scalable processes
- Greatly increased network stability and reduced downtime with fewer work delays/stoppages
- Enhanced security and visibility for wired and wireless networks

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Decreased autonomous forklift "faults" by

95%

Unified campus architecture

Support for company's
rapid expansion

∴∴ Insight