



WHY YOU NEED A CONVERGED NETWORK

➤➤ Even as automation accelerates manufacturing processes, you must respond more quickly to changing market and operational conditions without sacrificing efficiency. Where should you look for gains?

Cisco believes the answer lies in “industrial intelligence” — secure connectivity across the enterprise and throughout the manufacturing life cycle to intelligently and responsively manage industrial operations globally.

Gaining Industrial Intelligence

Globalization has permanently changed the playing field. Increased competition has lowered margins and raised customer expectations. Rapid growth in the developing world requires manufacturers to allocate global resources dynamically, often to locations far from headquarters.

Simply optimizing systems and accelerating processes is no longer enough. Instead, you should be able to use the wealth of data already generated by plant-floor systems to support strategic decisions and enable real-time process improvements. But how? Manufacturing engineers care most about speed and equipment uptime; IT cares most about secure, reliable data transmission.

Rockwell Automation and Cisco are committed to being your most valuable resource for helping bridge

Manufacturers are using Web-connected devices and “industrial intelligence” that connects the plant floor with the business office to support smart business decisions.

technical and cultural gaps between plant-floor and higher-level information systems to improve business performance. Through collaboration on products, architectures, services and educational resources, the companies enable you to converge network infrastructures using open, standard EtherNet/IP™ technology.

Converged network infrastructures can deliver secure visibility and support remote access while providing control networks with the greatest possible flexibility. You can:

- **Connect devices** to measure, monitor and manage resources for greater efficiency.
- **Connect people** in less time and across locations with contextual relevance.
- **Connect ideas** to generate solutions to today’s industrial, operational and environmental challenges.

It Takes a Network

Implementing industrial intelligence takes a committed network of technology, people and processes. Cisco and Rockwell Automation help you converge automation and business systems across a common, standard network platform to achieve industrial intelligence.

For example, the companies have developed, tested and validated Converged Plantwide Ethernet Architectures

The Allen-Bradley Stratix 8000 Series industrial Ethernet switches uses the Cisco Catalyst switch architecture, feature sets, and configuration tools. The products also support easy setup and comprehensive diagnostics from within the Rockwell Automation Integrated Architecture.



(www.rockwellautomation.com/go/tjarch). They provide detailed design and implementation guidance, and offer best practices for deploying secure, robust EtherNet/IP in manufacturing and connecting it to the enterprise.

The two companies also collaborated on the Allen-Bradley® Stratix 8000™ family of industrial Ethernet switches from Rockwell Automation (www.rockwellautomation.com/go/tjstratix8000). This product line uses the Cisco Catalyst switch architecture, feature sets, and powerful configuration. The products also support easy setup and comprehensive diagnostics from within the Rockwell Automation Integrated Architecture™ (www.rockwellautomation.com/go/tj10ia).

A Cisco and Rockwell Automation unified EtherNet/IP information infrastructure delivers speed, security and reliability across the entire plant-wide architecture. As a result, manufacturers are reducing the total cost of ownership, speeding time to market, improving operational responsiveness and protecting critical manufacturing systems — ultimately improving business performance.

Case Study: Anglo Platinum Gains End-to-End Production Visibility

South Africa-based Anglo Platinum is the world's largest primary producer of platinum, with a 38% share of global output. The company's end-to-end production process moves materials from underground and open-cast mines to concentrators, smelters and refineries.

Because these facilities (and their industrial control systems) were spread over remote regions and lacked standard network protocols, the sites were isolated from each other and from Anglo's corporate network. This made it difficult to optimize production processes and maintain high asset utilization and output. Without centralized network management capabilities, Anglo faced chronic downtime, security, and maintenance cost issues.

Anglo teamed with Cisco and began implementing a unified EtherNet/IP architecture, linking each facility and

process-control system to the corporate network. Managers now have a secure, dashboard view of production at any location, accelerating decision-making.

The company also reduced overall system maintenance costs and cut its total cost of ownership to half the industry average.

Case Study: Vehicle Manufacturer Follows a New Road

After decades of growth, a well-known American vehicle manufacturer was hard-hit by the economic downturn. As the company moved to reduce costs and increase efficiencies, it recognized that its primary plant would need re-tooling to adopt best practices and leaner manufacturing techniques.

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The existing infrastructure consisted of Rockwell Automation switches and programmable automation controllers (PAC) in siloed work cells. The switches communicate data to each component in a cell so the right tool or setting is in the right place at the right time for the worker.

However, an inability to share information between cells made it almost impossible to easily adapt or move cells to accommodate more efficient processes needed in the new plant. The plant floor required EtherNet/IP-enabled processes and the ability to share that information wherever it was needed to support the company's goals.

The vehicle manufacturer implemented the Allen-Bradley Stratix 8000 Switch, which enables the company to take

advantage of the Rockwell Automation engineering experience and support. Cisco Unified Wireless solutions also support mobile access to data and communications within the plant.

The vehicle manufacturer expects to increase agility beyond what was previously possible — to build any model on any production line and deliver customized products almost on demand while increasing employee productivity. As a result, the Cisco and Rockwell Automation solution will be the standard the automaker uses when upgrading other plants or building new facilities.

Case Study: Tire Maker Moves to Ethernet

One of the world's largest tire manufacturers has production facilities around the world. Company leaders planned to migrate to an Ethernet environment to network its plant-floor infrastructures to simplify gathering and analyzing data. They also wanted to manage its infrastructure using the Rockwell Automation Integrated Architecture instead of a third-party solution.

Because the company was engaged in a large-scale project to design a new machine, the design required a large number of 24-port switches with Resilient Ethernet Protocol (REP) for high availability. The existing switches couldn't support the high number of ports needed or the company's high-availability requirements.

Using the Converged Plantwide Ethernet Architecture approach, Cisco and Rockwell Automation implemented Stratix 8000 Series Ethernet switches in the machine infrastructure, and it has run nonstop for more than 12 months. The tire company has standardized on the Stratix 8000 Series switches for all new construction and upgrades in its plants worldwide.

Transformation Continues

These examples describe just a few of the manufacturers beginning their transformation journeys through industrial intelligence. □

Cisco and Rockwell Automation

Strategic Alliance

www.rockwellautomation.com/go/p-cisco or
www.cisco.com/web/strategy/manufacturing/cisco-rockwell_automation.html

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