Manufacturers face unprecedented challenges as global economic forces drive competition and open opportunities in new markets. Flexibility and efficiency are required in order to quickly develop and manufacture an increasing number of products to meet rapidly changing demands. At the same time manufacturing companies are becoming more complex, and globally dispersed, accelerating the need for increased collaboration and visibility. The organization must become more responsive to changing market and operational conditions without sacrificing efficiency.

There is an undeniable trend in today’s manufacturing enterprise. The convergence of technologies between traditional information technology systems and manufacturing operations provides manufacturers with substantial opportunities to reduce risk and costs, provide secure access to information, and improve agility and overall business performance.

Now, industry leaders Cisco and Rockwell Automation are joining together to accelerate this convergence and help you realize the benefits from:

- A highly integrated network architecture uniting production intelligence with the rest of the enterprise.
- Flexible and secure system implementation allowing IT and Manufacturing to easily deploy and maintain security, reliability, and quality of service across the enterprise.
- A scalable, future-ready network architecture using open standards, allowing you to quickly and efficiently deploy new technologies and capabilities.

Helping Deliver Value Within Four Key Initiatives:

- **Common Technology View:** A single system architecture, using open, industry standard networking technologies, such as Ethernet, is paramount for achieving the flexibility, visibility, and efficiency required in a competitive manufacturing environment.
- **Converged Plantwide Ethernet Architectures:** Detailed design and implementation guidance and best practices for a converged network architecture, bringing together relevant applications, technologies, and principles enabling Manufacturing and IT organizations to successfully collaborate and implement a truly integrated network infrastructure.
- **Joint Product and Solution Collaboration:** Stratix 8000™ Layer 2 and Stratix 8300™ Layer 3 Industrial Ethernet Switch families incorporating the best of Cisco and the best of Rockwell Automation.
- **People and Process Optimization:** Education and services to facilitate Manufacturing and IT convergence and help enable successful architecture deployment and efficient operations allowing critical resources to focus on increasing innovation and productivity.
Visibility of production information is critical to achieving the flexibility and responsiveness required in today’s global manufacturing environment, and Ethernet is the technology that delivers this information. Given the competitive nature of manufacturing and the accelerating rate of change in the global economy, it’s important to be sure that the investment you make today can continue to support your changing business needs over time. Ethernet technology, along with the appropriate networking features, provides the performance, manageability and security for today’s production control network, and provides the foundation for deployment of new applications in the future, helping you to achieve high levels of productivity, better serve your customers, and ultimately provide your competitive advantage.

Cisco and Rockwell Automation have adopted the use of the Common Industrial Protocol (CIP) networks for applications throughout the plant, focusing on deployment of EtherNet/IP. The EtherNet/IP specification is managed by ODVA, an international vendor-independent association comprised of more than 250 of the world’s leading automation companies.

As automation systems increasingly adopt open standards, you will have the flexibility to use common components across multiple systems, providing additional investment protection and reducing the risk of obsolescence with the deployment of new systems. You will see the potential benefits in reduced wiring and installation costs, additional diagnostic capabilities, space savings, and the flexibility to reconfigure and upgrade systems as your needs change.

Converged Plantwide Ethernet Architectures
To help you successfully implement Ethernet networks throughout the enterprise, Cisco and Rockwell Automation are bringing together the respective skills, leadership and technical expertise to provide network design guidance and customer education to help establish a robust and secure network infrastructure within a customer’s integrated architecture. These tools provide the foundation for success when deploying the latest innovative technologies. They also provide access to critical production information to obtain key performance indicators (KPI).

Converged Plantwide Ethernet Architectures are built on common standards between IT and manufacturing. These include technologies such as the IEEE’s standard unmodified Ethernet, IETF’s Internet Protocol (IP) and the ODVA’s Common Industrial Protocol (CIP). The collaboration on the Converged Plantwide Ethernet Architectures incorporates Cisco’s “Ethernet to the Factory” solution and the Rockwell Automation Integrated Architecture™ that expands across discrete, motion, process, batch, drive and safety applications.

Cisco and Rockwell Automation are publishing ongoing phased releases of deliverables to provide solutions to address Ethernet network convergence for manufacturing and enterprise applications. As part of the Converged Plantwide Ethernet Architectures documents, the Design and Implementation Guide consists of recommendations, configuration settings and best practices developed through tested and validated architectures. This includes critical design considerations to integrate industrial networks and the manufacturing enterprise, such as best practices for segmentation, resiliency and security. Integrating these will help achieve greater visibility, improve data assimilation, reduce costs and simplify management. The two companies are continuously working closely with the customers to expand the Converged Plantwide Ethernet Architectures and focus on migration challenges, secured connectivity for remote access, time-critical applications such as CIP Sync™ and CIP Motion™, as well as greater FactoryTalk® application and service platform support.
Joint Product and Solution Collaboration

To further strengthen the collaboration between Cisco and Rockwell Automation, the two companies have developed the Stratix 8000 Layer 2 and the Stratix 8300 Layer 3 managed industrial switch lines creating an ideal networking environment for both IT and controls professionals. This Rockwell Automation industrial managed switch line with Cisco Technology is the first of its kind. Using the current Cisco Catalyst switch architecture and feature set, along with powerful configuration tools, the product line helps to provide secure integration with the enterprise network. At the same time, it allows for easy setup and comprehensive diagnostics from within the Rockwell Automation Integrated Architecture.

The collaboration between the two companies has been extended to delivery of services. Cisco and Rockwell Automation Services & Support consultants collaborate to provide manufacturing and IT network assessments, architecture design and implementation, project management and audit services. In addition, the joint consulting offerings include the design and creation of comprehensive security programs from evaluation to network design, implementation to ongoing support.

People and Process Optimization

Adapting to changing business requirements, technology advancements, process improvements and changing work force demographics all require new ways of thinking, interacting and working together.

While technology and network convergence have occurred within many manufacturing companies, the biggest challenge is often organizational and cultural convergence. Cisco and Rockwell Automation hold a series of educational seminars and customer advisory boards, publish joint documents to help companies understand best practices, facilitate Manufacturing and IT convergence, and help enable successful architecture deployment and efficient operations allowing critical resources to focus on increasing innovation and productivity.

Rockwell Automation and Cisco have been hosting a series of webinars to provide education as requested by customers and partners. These webinars deliver the information supporting industry and technology leadership, extend the conversation of convergence to a broader audience on a regular basis and target key stakeholders, such as IT professionals, manufacturing control engineers, machine builders and business decision makers.
From Production Through the Enterprise

Cisco and Rockwell Automation are joining together to help deliver secure information throughout the enterprise increasing visibility, agility, efficiency and security while reducing costs and risk. Potential benefits include:

**Lower Total Cost of Ownership:** Single network and open standards from the production process reduce the cost over isolated, multiple networks and proprietary systems.

**Faster Time to Market:** Deeper insight into operations and real-time collaboration between manufacturing, engineering and suppliers improve decision quality and shorten lead times. The most flexible approach enables manufacturers to adapt to changing business requirements and supply-chain management needs quickly and efficiently.

**Improved Operational Responsiveness:** Data visibility between operations, suppliers, partners and customers, and the ability to implement collaborative technologies that help take action and improve decision making.

**Security:** Critical manufacturing systems are protected allowing secure information visibility and access between production and corporate networks.

Cisco and Rockwell Automation are continuously working together to expand the technology roadmap, joint solutions and services to help manufacturers achieve the visibility, flexibility, security and collaboration necessary in today’s global manufacturing environment. To learn more about how Cisco and Rockwell Automation can help you deliver secure information through optimized network integration across the plant floor and throughout the enterprise, please visit:

www.ab.com/networks/architectures.html

www.rockwellautomation.com/partners/cisco.html


www.cisco.com/web/strategy/manufacturing/ettf_overview.html