Extreme Manufacturing Solutions

Connected Business and Plant Operations

Introduction

The growing need for factory operations to meet fast-changing customer and market requirements is driving manufacturers to be more agile and flexible than ever. With high-level objectives to compress time frames and streamline processes, manufacturers are developing new ways to unite their plant and business operations to also optimize resource use, drive customer requirements closer to the production line, and accelerate time to market. In a globally connected marketplace, speed, adaptability, and innovation are the new currencies in the manufacturing realm.

Nowhere is this more evident than the convergence of Operations Technology (OT) and Information Technology (IT). Traditionally focused on factory-based assets and processes, OT is largely comprised of plant systems such as sensors, machines, devices, connectors, and applications that manage and monitor operations. For years, OT systems remained a distinct element within manufacturing workflows, but as the benefits of standards-based architectures, reliable high-speed networking, centralized management, and big data analytics transformed the role of IT, the wisdom of merging traditionally separate OT and IT ecosystems in manufacturing environments became unassailable.

The ability of IT and OT leaders to jointly develop more agile, flexible, and transparent customer engagement and production models that span business systems, supply chains, and factory environments has today become a prerequisite for success and growth in the manufacturing sector.

Critical Technology Issues for Connected Business to Plant Operations

Business Continuity Risks

The unification of IT/OT systems requires both defining long-term strategies and delivering immediate ROI. Identifying priorities and developing pilot projects that deliver tangible benefit with low risk to existing operations can establish credibility, but too often these technology migrations are plagued by ownership disputes, slow and complex deployments, an inability to effectively locate and troubleshoot problems, and suboptimal impacts to mission critical Manufacturing Executions Systems (MES). Without comprehensive management capabilities that provide centralized control over the entire network infrastructure from the edge to the data center, as well as mobile devices and security policies, efforts at unifying plant operations

with business systems can be hamstrung by compromised execution, factory downtime, and the diversion of crucial resources into non-productive uses.

Lack of Demonstrable ROI

Among the top trends McKinsey cites as impacting manufacturing production are "the astonishing rise in data volumes, computational power, and connectivity" and "improvements in transferring digital instructions to the physical world, such as advanced robotics and 3D printing." While these innovations demonstrate the value of converging business and production technologies, many manufacturers seeking to leverage these new applications lack visibility into the returns and business impact of these innovations. Without real-time and historical views into the performance and adoption of quickly-mainstreaming application technologies that support cloud-based MES, mobility, and the Internet of Things, technology leaders are limited in their ability to prove quantified real-world value to their business units and customers.

Costly, Closed, and Proprietary It Architectures

More than ever before, the global manufacturing sector is characterized by acquisitions and partnerships, facility moves and modifications, and a constant search for new market opportunities. For technology leaders, these factors regularly involve inheriting proprietary technology assets from legacy environments. Efforts to standardize the broader ecosystem in these cases become limited by an inability to cost-effectively integrate these systems beyond a perfunctory level. Alternatively, in the case of 'one-size fit all' infrastructures, manufacturing customers are often locked-in to executing their projects according to the vendor's feature roadmap, not the needs of their clients. In addition, support costs for these systems escalate dramatically over time – incongruous in a technology sector increasingly disrupted by software innovation and downward price pressures. Additionally, these closed environments lack truly open standards-based APIs and software development kits, impeding the ability of technology leaders to leverage today's application-driven world of emerging cloud, security, wireless, and converged SDN opportunities.

Required Capabilities	Recommended Solution	How We Do It Better
Stabilization of existing wired and wireless infrastructure	• Extreme Switching	Single pane of glass management system provides centralized visibility and end-to-end granular control of the unified network.
Pervasive Wi-Fi connectivity and bandwidth for workflow and communications	• Extreme Wireless • Extreme Switching • Extreme Routing	Hybrid deployment architectures (bridged at AP or controller), single sign-on to simplify management. Application and device based policy controls. Embedded flow-based ASIC flow sensor technology per port, 3M flows/s collection capability.
Automation of device onboarding with audit controls	• ExtremeControl • Extreme Surge	Automated, secure, and fast provisioning and control of devices on the wired/wireless network.
Critical device and agentless application	• Extreme Analytics	Agentless performance and security monitoring of device communications.
Staff supporting and consulting to provide best in breed IT service delivery	• Professional Services	Extreme services including onsite customer consulting, design, and implementation services as well as comprehensive training curriculum.
Determining unknown security risks and meeting government compliance standards	• Extreme Management Center • Information Governance Engine	Automatically assesses network configuration compliance with HIPAA, PCI, and GDPR. Eliminates manually validating the compliance of network device configurations across your network.
Simplified and agile network infrastructure	• Fabric Connect	Leveraging simplicity to create agility, this empowers rapid and seamless service delivery.
24/7 Operational Support	• Maintenance	Support Center (GTAC) provides technical support 24 hours day, 365 days a year.

To learn more visit Extreme's Manufacturing Solutions site: http://www.extremenetworks.com/manufacturing

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