GTT Greater Technology Together

Whitepaper

HOW MANUFACTURERS CAN REAP THE REWARDS OF NETWORK-LED OPTIMIZATION

Technology is helping manufacturers rise to many new challenges, with network efficiency and cybersecurity at the forefront.

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ENTERPRISE MANUFACTURING ESSENTIALS

Business continuity strategy, supply chain resilience and contingency planning are all vital parts of enterprise manufacturing operations. The priority is making sure operations are profitable while managing supply-chain demands of delivering on-time and on-budget to customers and managing the inventories of raw materials to meet the needs of a busy plant.

Network-led solutions are helping to solve the everyday problems facing manufacturers. Smart factory initiatives improve efficiency and continuity, with cloud-based applications and services connecting all users and locations of a manufacturing operation. As manufacturers embrace new technologies, protecting against bad actors and malicious access is a growing concern. Organizations must adapt quickly to evolving demands and a heightening threat landscape by investing in the right network, cloud access and associated cybersecurity tools custom assembled to meet the needs of the operation.

"Manufacturers aren't unique in the sense that digital transformation is something every company is wrestling with," says Richard Vidil, Vice President of Sales Engineering, Americas at network and security services provider GTT. "But the specific characteristics of the manufacturing sector make that especially challenging."

As structurally complicated companies with many physical locations, often with wide distribution networks and fast-moving inventory, manufacturers cannot afford network outages or a loss of continuity. "There is a lot of pressure on manufacturers to evolve their technology without significant disruption," adds Vidil.

Connectivity and centralized control between different locations, between extranets with partners or cloud applications, is increasingly critical to business continuity. "Manufacturers are thinking about how to modernise their facilities, tools and processes, and what role the cloud and network connectivity can play in achieving this," Vidil explains.

WHAT IS A SMART FACTORY AKA INDUSTRY 4.0?

Intelligent Equipment: configured to meet unique needs, using sensors to report on the operational health of the equipment.

Intelligent Plants: Autonomously run, delivering product at scale. Intelligent assets link operational processes, enabling predictive maintenance, inventory and delivery.

Empowered people with the tools, information and partners they need to do their best work.

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A CLOUD-BASED SOLUTION

Agricultural producer ICL Group was struggling under the strain of a 10x increase in demand for bandwidth across its 80 sites, frustrating users company-wide. The company was paying a lot for Multiprotocol Label Switching, or MPLS, but it could not keep pace with the increasing demand.

GTT proposed moving ICL Group to a Managed SD-WAN solution to achieve reliable, secure, scalable service. SD-WAN is a cloud-based centralized network infrastructure which offers network connectivity across a wide area, built-in security features to protect the data moving across the entire network and reduces capital investment.

GTT implemented its Managed SD-WAN solution into test sites for ICL Group, delivering a network that was 10 times faster and much more cost effective. ICL Group described the technology as a "game changer" which "far exceeded" its expectations. A rollout across all its sites was approved. ICL is now benefiting from cross-company performance improvements, cost savings and better analytics delivered via the GTT customer portal, EtherVision. ICL can monitor and map traffic across its network, for greater visibility and control of computing power to the parts of the business that need it most, in real time, making changes as needed from a central location. No more truck rolls to make updates in far-flung locations, and every site updates at the same time

OPTIMIZED SECURITY SOLUTIONS

The built-in security of SD-WAN is a critical component of the structure. If a company's manufacturing process rules and triggers are all stored in the cloud, an intrusion or outage presents a serious risk to the business.

The longer it takes to identify and close the gap, the more expensive the loss in time, data and production. Ensuring data is fully secure is a high priority.

Manufacturers must consider tools to detect and mitigate any attack, find and address points of vulnerability in the security perimeter and secure every access point.

An important component of a fully secure structure is a Managed Detection and Response (MDR) solution, a hybrid cybersecurity service comprised of people and technology that complements the security tools inherent to a Managed SD-WAN solution. GTT's MDR service monitors security infrastructure to identify anomalies that could be potential threats. MDR is quick to identify a threat or a compromised system and works to mitigate the impact as quickly as possible.

"All of these considerations that were not previously an issue for organizations are now potentially a great problem. Security and connectivity are the two things they need most," Vidil says.

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OPTIMIZATION IS KEY

Manufacturers understand the technology they use must remain current and cost efficient. These are the fundamentals of modern manufacturing operations. Manufacturers are driven by external deadlines and are very focused on reliability of systems that drive operations and the shop floor. Not only is there a high monetary cost to facility downtime, it can also damage relationships with customers and end-users.

"As highly technical businesses, manufacturers' process management and continuous improvement are table stakes" says Vidil. "They look for the same in any vendor they use, including technology providers. Manufacturers are demanding customers and they expect commitment, simplicity and discipline," he notes.

Manufacturing networks need to be optimized to their operations and growth goals.

Global chocolate producer Barry Callebaut had a vision to expand its business, but to accomplish the growth it wanted, the operation needed to upgrade its network to a flexible and reliable software-defined architecture. Barry Callebaut supports more than 130 sites worldwide, some in very remote regions where cocoa beans are grown. The company needed a global connectivity provider with local access partners able to connect the most remote locations.

With minimal downtime, GTT upgraded the company's network from a hybrid MPLS to fourth generation SD-WAN which increased available bandwidth by 77% while lowering the total cost of ownership. GTT's global Tier 1 internet backbone connected the business across six continents, providing private and direct cloud connectivity to enhance the performance of business-critical and supply-chain applications.

This overhaul resulted in a simple, agile, efficient network that supports Barry Callebaut's cloud-first strategy and has improved many aspects of its global operations.

EMBRACING INDUSTRY 4.0

A global survey of over 1,350 manufacturers reveals a focus on delivering profitable growth without sacrificing quality, accessing data's true potential and increasing adoption of technology to build resilience, enable agility, and increase sustainability. These are all things that are hallmarks of Industry 4.0.

The firms that were most resilient during the pandemic had already invested in new technologies. For instance, those with automated factory floors required fewer face-to-face interactions, reducing business interruption during the period of social distancing.

One of the largest challenges to an ever-increasingly complex factory floor is training and up-skilling workers. A serious skills gap is proving to be a significant impediment to achieving improved quality goals, as new solutions are useless if workers cannot effectively use them. "We need people with Science, Technology, Engineering and Maths (STEM) skills to fill those roles in a rapidly changing and digitalized sector and we can't necessarily get them in fast enough," says Rob Allen, Senior Policy and Research Manager at Policy Connect, a public policy think-tank.

The skills shortage is being felt across the manufacturing space. There is not enough talent with the qualifications and experience needed to develop, deploy and maintain the technological systems modern producers need.

On the production floor, the IT and operational technology teams may be more focused on factory output rather than the capability of the network. For this reason, outsourcing technology solutions to an experienced supplier is often a more viable option than trying to hire and train in-house specialists.

Rob Allen outlines some of the key hurdles he often hears manufacturers citing when talking about their operating environment. One is the impact of the pandemic, causing operational and plant employees to return home during this time. With the borders closed the labour pool shrank further.

"This was a critical problem for UK manufacturers and has resulted in recruiting challenges," says Allen. According to PwC, an example of the gaps in skills revealed the UK manufacturing sector had 90,000 live vacancies in 2022, with 36% considered 'hard to fill'. The industry also paid 12% higher wages than the rest of the whole economy average in the fight for talent.[2] In the US, a survey of 300 manufacturing leaders found 76% were struggling to fill critical labour gaps, leading to production delays for nearly half of manufacturers at least once a week.[3]

1 Rockwell Automation, State of Smart Manufacturing Report, 8th Edition April 2023
2 PwC, Executive Survey 2023: Cost, Competitiveness and Confidence
3 UKG Workforce Institute, A Turning Point for Manufacturing, 2023

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THE NEXT WAVE OF INNOVATION

Business continuity strategy, supply chain resilience and contingency planning are all vital parts of enterprise manufacturing operations. The priority is making sure operations are profitable while managing supply-chain demands of delivering on-time and on-budget to customers and managing the inventories of raw materials to meet the needs of a busy plant.

Technology is moving incredibly fast, with the AI revolution pushing the boundaries of possibility in many sectors and industry. Many manufacturers have already plugged into the Internet of Things (IoT) in their search for greater automation and 'smart' solutions, but what's next?

The next wave of innovation will be the evolution of the applications that analyze the big data IoT generates, suggests Vidil. Indeed, a 2023 survey of US manufacturers revealed planned investment in a range of technologies to increase operational efficiencies over the next 12 months, including robotics and automation, data analytics, IoT and machine learning.[4]

"We will see more machine learning and more pattern recognition with AI. Those kinds of applications are going to be the next big thing. And if you don't have the right infrastructure, you won't be able to take advantage of it."

It may be time to consider the cost-effective option of hiring an expert partner to support the transition from development to maintenance. To find the right partner, organizations should first conduct their own audit to identify areas for improvement and where a technology investment could best benefit the business. An experienced partner can guide them toward the best solutions for their specific challenges and help them embrace future opportunities.

4 Deloitte, 2023 Manufacturing Industry Outlook

GTT is a managed network and security services provider to global organizations. We design and deliver solutions that leverage advanced cloud, networking and security technologies.

We complement our solutions with a suite of professional services and exceptional sales and support teams in local markets around the world. We serve thousands of national and multinational companies with a portfolio that includes SD-WAN, security, internet, voice and other connectivity options. Our services are uniquely enabled by our top-ranked, global, Tier 1 IP backbone, which spans more than 260 cities on six continents.

The company culture is built on a customer-first service experience reinforced by our commitment to operational excellence and continuous improvement in our business, environmental, social and governance practices.

For more information, visit gtt.net

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