

Modernizing Manufacturing Networks: Exiting the Colocation Era

Delivering a network operating model for secure, resilient connectivity across plants, distribution centers, clouds, and partners, without colo hubs.

Executive Overview

Manufacturers are accelerating Industry 4.0 programs with industrial IoT, robotics, computer vision, and AI-driven analytics. These initiatives depend on reliable connectivity between plants, edge compute, data centers, and multiple clouds. Yet many manufacturing networks still route critical traffic through colocation hubs and hardware-bound WAN designs built for earlier cloud adoption.

That model is now colliding with modern traffic patterns. Data increasingly moves plant to cloud, cloud to cloud, and across regions to support quality, predictive maintenance, and digital twin workflows. Suppliers and integrators also need controlled access to specific applications and environments. Teams face colo renewals, hardware refresh cycles, and fragmented operations that slow change and increase risk.

This solution brief outlines an alternative approach. Reduce or replace colocation hub dependence with **Network Infrastructure-as-a-Service (NlaaS)**, a cloud-delivered operating model that scales connectivity across sites, clouds, and partners while keeping segmentation and policy consistent across OT and IT.



The Manufacturing Network Problem: Colo-Era Hubs Cannot Keep Up

Manufacturing environments have unique constraints: production uptime, safety, intellectual property protection, OT and IT convergence, and third-party access. Colo-centric architectures introduce structural friction:

- ✓ **High fixed costs and refresh cycles:** Cages, cross-connect fees, power and cooling, hardware lifecycle planning, and capacity expansion projects.
- ✓ **Slow change velocity:** New plants, lines, warehouses, and cloud environments require physical work, long lead times, and multi-vendor coordination.
- ✓ **Operational fragmentation:** Siloed tools and per-site configuration patterns create inconsistent outcomes, higher change risk, and slower troubleshooting.
- ✓ **Inconsistent segmentation and policy enforcement:** Device-by-device controls drift over time, creating gaps as OT, IT, and partner traffic expands beyond hub boundaries.
- ✓ **AI acceleration is global:** As countries invest aggressively in AI-enabled manufacturing, manufacturers need scalable edge-to-cloud and cloud-to-cloud connectivity to support computer vision, telemetry, and digital twin data flows without hub-induced latency.

What Modern Manufacturing Networks Require

To support smart factory operations and AI adoption, manufacturers need an operating model that can deliver:



Any-to-any connectivity across plants, distribution centers, offices, data centers, and multiple clouds



Consistent segmentation for OT, corporate IT, engineering, and partner access across hybrid and multi-cloud environments



Fast onboarding for new sites, suppliers, and acquisitions without redesigning the network each time



Centralized policy and visibility to reduce change risk and operational toil



Elastic capacity and predictable consumption economics aligned to seasonal demand and data growth

How Alkira Fits: Network Infrastructure for Manufacturers

The Alkira Platform delivers NlaaS as a cloud-delivered network fabric operated through a centralized control plane. Manufacturers can use the platform to connect sites, data centers, clouds, and partners in a unified topology with consistent segmentation and governance. This shifts network operations away from hardware refresh cycles and manual change workflows toward on-demand connectivity, standardized policy, and centralized control.

Core capabilities



Cloud-delivered fabric with global reach

Deploy connectivity where you need it without standing up new colo hubs or re-architecting per region.



Connect sites, data centers, clouds, and partners in a unified topology

Support plant to cloud and cloud to cloud traffic flows without forcing traffic to hairpin through centralized hubs.



Central policy, segmentation, and governance

Define segmentation intent once and apply it consistently across OT, IT, and partner zones to reduce drift and gaps.



Operational simplicity with a single control plane (console + API)

Standardize provisioning, change management, and visibility across the network, and integrate with existing WAN and SD-WAN designs without a forklift replacement.



On-demand consumption model

Shift from fixed, hardware-tied capacity planning to scalable service consumption that aligns with utilization and business priorities.

Outcomes that Matter in Manufacturing

Manufacturing leaders evaluate networking by production impact, cyber risk, and time to deploy. It is no longer just bandwidth.

- ✓ **Accelerate plant and service rollout**
Bring new facilities, cloud environments, and production services online faster by provisioning connectivity through software rather than physical hub expansion.
- ✓ **Improve segmentation consistency for OT and IP-sensitive data flows**
Reduce policy drift across plants and clouds by centralizing segmentation and governance. This supports safer OT and IT convergence and improves audit readiness.
- ✓ **Reduce operational overhead and change risk**
Consolidate control, visibility, and configuration patterns to cut manual effort and reduce the likelihood of inconsistent configurations across environments.
- ✓ **Support AI and data-intensive manufacturing workloads**
Enable high-volume telemetry and computer vision data movement across sites and clouds with connectivity patterns designed for modern edge, cloud, and hybrid flows.
- ✓ **Scale partner connectivity with stronger controls**
Onboard suppliers, integrators, and contract manufacturers faster with standardized segmentation and least-privilege access patterns.

Representative Manufacturing Use Cases

- 1. OT and IT convergence for smart factories**
Connect plant networks to cloud analytics and enterprise applications with consistent segmentation between OT zones, engineering, and corporate IT.
- 2. Computer vision and quality inspection pipelines**
Move high-bandwidth image and sensor data from the factory edge to AI services in the cloud or regional compute without hub-induced latency.
- 3. Digital twins and cross-site operations analytics**
Aggregate near real-time telemetry from multiple facilities to power simulations, capacity planning, and predictive maintenance workflows.
- 4. Supplier, integrator, and partner access**
Provide controlled access to specific applications and shared data zones without building one-off VPN designs.

Next Steps

If you are approaching colo renewals, hardware end-of-life, expanding multi-cloud initiatives, or scaling smart factory programs, Alkira can help you modernize the network operating model without inheriting more hubs, appliances, and fragmented operations.

Visit alkira.com to learn more about the Alkira Platform.

