MANUFACTURING DIGITAL EDGE PLAYBOOK

Streamlining manufacturing supply chains for customization and innovation
ABOUT THIS PLAYBOOK

PURPOSE

This playbook outlines how manufacturing industry leaders can optimize supply chains, lower costs and deliver greater customization and servitization using distributed interconnection. By securely exchanging traffic at the digital edge, manufacturers can gain valuable product, customer and compliance insights, improve operational automation, and collaborate with ecosystem participants in the industrial internet of things (IIoT).

CHALLENGE

Complex supply chains increase costs and slow product time to market. A lack of visibility into manufacturing component management and product distribution increases operational errors and makes it hard to locate products in a timely fashion. Traditional IT infrastructures pose barriers to real-time collaboration and data sharing, limiting data capture and analysis for customer, product and regulatory insight. As a result, product and service innovation, preventative maintenance, and risk management approaches are constrained.

NEED

To remain competitive, manufacturers must leverage data and automation to optimize processes across the product life cycle. New data sources must be captured and local analytics applied for actionable insights. Re-architecting IT infrastructure on a globally distributed interconnection platform enables private data exchange among key digital manufacturing ecosystems (including network, cloud and IoT). The result is real-time collaboration with customers and supply chain partners for effective customization and servitization.
**EXECUTIVE SUMMARY**

Manufacturers need new digital strategies and IT architectures to streamline their supply chains, increase collaboration and share data.

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<td>PLAYBOOK SHOWS MANUFACTURERS HOW DISTRIBUTING BUSINESS EXCHANGE POINTS PROXIMATE TO ECOSYSTEM PARTICIPANTS AND DEVICES ALLOWS THEM TO TAILOR EXPERIENCES, REDUCE BUSINESS RISK, AND SCALE VIA ECOSYSTEMS.</td>
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<td>THE ROADMAP OFFERS A STEP-BY-STEP APPROACH TO TRANSFORMING DIGITAL BUSINESS BY INTERCONNECTING PARTNERS, ECOSYSTEMS, CUSTOMERS AND DEVICES USING BEST PRACTICES FROM AN INTERCONNECTION ORIENTED ARCHITECTURE® (IOA®).</td>
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<td>ACHIEVING THESE DIGITAL TRANSFORMATION GOALS REQUIRES A PLATFORM THAT CAN SUPPORT THREE CRITICAL ELEMENTS PROVIDED BY PLATFORM EQUINIX®.</td>
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MARKET TRENDS

Manufacturing digitization is boosting revenues and reducing costs...

...while the need to anticipate demand and meet it with servitized offerings is rising...

...requiring a new, distributed architecture that integrates supply chains and ecosystems.

Implications

- Industry leaders ahead of the curve on cost savings initiatives are reinvesting those savings into additional innovations.
- Digital technologies such as IoT, 3D printing and AI/ML are being used to streamline operations and reduce costs.

Summary

Leading manufacturers are embracing digital transformation to reduce costs, servitize offerings and grow revenue. Data allows these companies to anticipate customer needs and meet them with differentiated offerings that go beyond product delivery. A dynamic IT infrastructure that leverages global interconnection allows them to integrate the requisite digital capabilities, streamline supply chains, and leverage ecosystems, devices and customers for mutual benefit.
Interconnection Bandwidth* is projected to outpace growth of internet and MPLS traffic...

...with manufacturing Interconnection Bandwidth growing 56% year-over-year...

...as enterprises connect to cloud and IT providers at a 98% CAGR.

**Opportunity**

Interconnection** is required to scale digital business. Manufacturing companies are leveraging this trend by establishing distributed, private traffic exchange and control points near supply chains, ecosystems and customers.

**Opportunity**

Interconnection in globally distributed colocation facilities enables manufacturing companies to quickly serve a variety of customer needs with high-value solutions, while accelerating the integration of crucial digital technologies into IT infrastructures.

**Opportunity**

Enterprise interconnection to cloud and IT providers is expected to grow at a 98% CAGR between 2017-2021. Manufacturing companies can leverage these service provider interconnections to deliver high-performance, value-added solutions and services to customers.

**Summary**

Global Interconnection Bandwidth is expected to grow at 2x the rate of internet traffic as enterprises adopt interconnection as the standard for direct, secure business exchange. Compounding growth in Interconnection Bandwidth for the manufacturing industry creates an opportunity for manufacturing leaders to distribute business exchange points on an interconnection platform proximate to customers, devices, partners and ecosystems.

*Interconnection Bandwidth is the total capacity provisioned to privately and directly exchange traffic with a diverse set of counterparties and providers at distributed IT exchange points.

**Interconnection is direct and private traffic exchange between key business partners.**
CURRENT-STATE CONSTRAINTS

Manufacturers struggle to control costs, increase innovation, collaborate with partners and gather relevant data insights.

1. Manufacturing throughput variability
   Uncontrolled costs limit profitability

2. Linear innovation
   Disconnected designers and makers inhibit progress

3. Siloed processes
   Inability to collaborate inside and outside the organization

4. Lack of consumer insight
   Business archetypes are monolithic

Summary

Complex supply chains result in higher costs and slower product time to market. Siloed processes and lack of integration among designers, developers and producers limit product innovation and quality. Legacy data systems that transport data from dispersed products, consumers, partners and regulators to a central repository are unsuited for real-time data collection, sharing, analysis and insights for greater customer customization and product quality.
FUTURE-STATE CAPABILITIES

Optimized IT infrastructures enable innovation, reduce costs and integrate supply chains using real-time insight.

1. **Controlled costs**
   Continually optimized cost performance

2. **Dynamic R&D**
   Innovation that meets customer expectations

3. **Integrated supply chains**
   Better inventory and price control management

4. **Real-time insight**
   Production controlled, customized and tracked

**Summary**

Supply chain efficiencies and automation accelerate time to market, reduce costs and free up resources for innovation. Re-architecting IT infrastructure with distributed business exchange points for real-time data collection and analysis enables product customization and servitization. Integrated consumer and supply chain insights yield new offerings, while real-time analytics improve preventative maintenance and reduce risk.
STRATEGY

Architecting for the digital edge requires a distributed interconnection platform

Summary

Manufacturers can optimize the end-to-end product life cycle to meet customization and servitization goals. They can deliver a differentiated experience, reduce business risk on a single global platform and scale via diverse interconnected ecosystems.

Network, cloud, SaaS, content and other service providers enable new platform capabilities and information exchanges by deploying solutions for manufacturing companies that support highly scalable, self-service business models.

Managed services providers help manufacturing companies transform their businesses by integrating third-party solutions that enable rapid delivery of tailored solutions to meet customer needs.

1. Differentiate the experience
   - Build a differentiated experience through interconnection
     - Customize solutions for customer needs.
     - Tailor offerings for omnichannel delivery.
     - Maintain a strategic global presence adjacent to devices and customers.

2. De-risk the business
   - Reduce business risk with an interconnection platform
     - Simplify on a standardized, global platform.
     - Optimize operations and streamline M&A.
     - Rapidly test new markets and servitized solutions.

3. Scale through ecosystems
   - Scale through interconnected insights and ecosystems
     - Locally harvest, process and exchange data from devices and customers.
     - Place timely data insight at the fingertips of customers, partners and employees.
     - Expand value chain with partners and data for superior solutions that anticipate customer needs.
Innovate servitized offerings with partners

Dynamically adapt partner value chain

Deliver omnichannel, predictive insights

Harvest real-time customer and market data

ROADMAP

Business transformation roadmap for manufacturing companies based on proven Interconnection Oriented Architecture (IOA) best practices

**Summary**

The business transformation roadmap offers manufacturing companies a strategy for achieving a digital-ready business model that streamlines operations and captures new revenue. Follow the three-step plan to differentiate the experience for customers, partners and employees, reduce business risk, and identify breakthrough business opportunities through rich ecosystems.
To achieve the benefits of the strategy and the roadmap steps in this playbook, your architecture and platform require three critical elements: global location coverage, private interconnection with rich digital ecosystems and the capability to integrate, standardize and simplify control.

**Reach Everywhere**
- Global, metro cities and markets.
- Geographical compliance and sovereignty.
- Business operations and offices.

**Interconnect Everyone**
- Access network and cloud providers.
- Participate in ecosystems exchange.
- Leverage commoditized services.
- Share and exchange data.
- Transact using digital commerce.

**Integrate Everything**
- Marketplace of control functions.
- Cloud and managed services.
- Private data and distribution repositories.
- Globally standard policies.
- Business continuity and control.
- Digital commerce and payments.
GETTING STARTED

Playbook Companion Resources

Request a detailed briefing or strategy workshop with our experts.
Contact your Equinix account executive and learn more at equinix.com

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The Platform Equinix Vision
Develop data-driven revenue streams and new automation leveraging an interconnected platform and service provider ecosystem.
eqix.it/PlatformEquinixVision

Global Interconnection Index
Learn how global growth in Interconnection Bandwidth is shaping new opportunities for the manufacturing industry.
eqix.it/InterconnectionIndex

IOA Knowledge Base
Download proven network architecture blueprints and design patterns based on industry-leading implementations of IOA.
eqix.it/IOAKB

Equinix Marketplace
Discover an entire world of service providers or search for new partners, suppliers or customers on Equinix Marketplace.
eqix.it/marketplacebrochure
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