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# Building Global Supply Chain Resilience in Industrial Manufacturing

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For manufacturers, preparing for disruption increasingly requires flexibility and visibility across the supply chain.

Global supply chains have rebounded from the unprecedented crisis of 2021-2023. However, it seems every period of stability is followed by fresh disruptions that fuel volatility. While the Global Supply Chain Pressure Index indicates a return to baseline levels in early 2025, trade tensions threaten to rock the industrial manufacturing sector once again.

Economists warn that new tariffs could snarl supply chains as raw material prices rise. Compounded with the rise of severe natural disasters, cyberattacks on critical infrastructure, and geopolitical tensions, uncertainty is mounting fast.

This time around, manufacturing leadership teams recognize adaptability is no longer optional—it is essential for survival. Businesses are proactively assessing and optimizing their global supply chain resilience, implementing innovative strategies to withstand future shocks.

## Key Challenges Impacting Supply Chain Resilience

Manufacturing executives face a fundamentally altered risk landscape. While companies have taken action to adapt, with 73% reoptimizing their supply chain network in recent years, many underlying vulnerabilities persist.

For one, industrial manufacturers have faced an ongoing battle with labor shortages. A recent survey of global supply chain and logistics organizations revealed:

- 37% are still experiencing high levels of workforce shortages.
- 54% believe managerial positions are particularly hard to fill.
- 61% agree transportation operations are particularly impacted by labor gaps.

Recruitment and retention struggles, including rising C-suite turnover, increase the severity of operational challenges when disruption occurs. However, even with a strong workforce, a manufacturer's approach to inventory management can expose the company to disruption. For example, lean manufacturing and just-in-time (JIT) strategies strongly prioritize cost savings, urging organizations to keep surpluses to a minimum. Over-reliance on these approaches puts companies at risk of severe slowdowns when critical suppliers delay deliveries.

Complex global networks present additional challenges. While McKinsey reports 60% of supply chain leaders now have comprehensive visibility into tier-one suppliers, most still

struggle to gain deep-tier supplier transparency. This makes risk assessment and mitigation particularly challenging. On the flip side, dependence on geographically concentrated single-source suppliers can also create critical points of failure.

## Strategies to Enhance Global Supply Chain Resilience

Forward-thinking manufacturing leaders are adopting multi-faceted strategies to eliminate key supply chain vulnerabilities. These approaches focus on creating flexible, transparent, and robust supply networks capable of withstanding various disruptions.

### Supply Chain Diversification

The need to diversify suppliers has never been more pronounced. Top manufacturers are moving beyond traditional single-source relationships to develop networks of qualified suppliers across geographic regions. For example, Toyota remained a top seller during the 2021 supply chain crises by leveraging a dual-sourcing system; different suppliers were selected for different car models to prevent total disruption.

The automaker also recognized that *lean* manufacturing doesn't mean *zero-inventory manufacturing*. Rather than putting all their eggs in one or two baskets, Toyota strategically sources *and* stores inventory in global locations, creating a strong buffer in case of geopolitical conflicts.

For many industrial manufacturers, diversifying with onshoring strategies will be a particularly valuable approach as tariffs are implemented. Building a network of domestic and international suppliers can help leaders optimize costs and profit margins amid regulatory uncertainty.

### Investment in Supply Chain Technologies

Digital transformation will play an increasingly vital role in building supply chain resilience—especially where artificial intelligence is involved. According to McKinsey, "AI systems can automate the analysis of multiple structured and unstructured data sources from multiple supplier tiers, logistics providers, shop floor data systems, and in-house demand-forecasting systems."

With AI, supplier data becomes significantly more visible and significantly easier to digest. Manufacturing executives can benefit from more accurate and instantaneous insights, including real-time risk assessment and predictive analytics about material and financial flow. In turn, leaders can more proactively respond to rising vulnerabilities.

Advanced planning and scheduling (APS) systems can similarly help with forecasting demand. This software can further help leaders adjust their workforce schedules, material orders, and equipment maintenance timelines to optimize production efficiency.

### Manufacturing Process Flexibility

Supplier diversification can help manufacturers stay in operation when delivery delays hit. However, the most resilient organizations are also developing flexible solutions to address shifts in customer demand.

Top-performing manufacturers are expanding the capabilities of existing facilities to handle multiple product lines, allowing them to shift production based on market trends and supply constraints. This approach minimizes downtime, maximizes asset utilization, and reduces the risk of over-reliance on a single product or revenue stream.

To support this adaptability, companies are investing in:

- **Versatile machinery**, including standardized components that can be reconfigured for different products with minimal retooling.
- **Modular manufacturing**, in which companies produce units that are interchangeable across a product line.
- **Cross-trained workforces**, which enable manufacturers to redeploy employees across various production lines, ensuring operational continuity during fluctuations.

When leveraging this flexible approach, manufacturers can further boost supply chain resilience by establishing relationships with backup facilities. If demand surges, they can rely on partners and contract manufacturers to take on production.

### Contingency Plans

Proactive manufacturers aren't waiting for disaster to strike to jump into planning mode. To achieve supply chain resilience, they're developing comprehensive risk management frameworks—regularly conducting stress tests to evaluate preparedness for diverse scenarios.

Transportation contingency plans are particularly important, given the severe labor shortages and the growing frequency of channel disruptions. As we saw when the 2024 Baltimore bridge collapse diverted ocean shipments, the companies that achieved supply chain continuity already had trucking solutions and alternate routes in place.

## The Role of Leadership in Building Supply Chain Resilience

Building global supply chain resilience demands strong executive leadership and strategic vision. To achieve successful transformation, leaders must develop robust strategies that align with business priorities and:

- Balance short-term efficiency with long-term resilience
- Drive investment in digital technologies and infrastructure
- Foster collaboration within and beyond organizational boundaries
- Strengthen supplier relationships and visibility
- Create and sustain a risk-aware organizational culture

Top manufacturing executives will bring innovation, agility, and a risk management mindset to their organizations—along with experience guiding and upskilling their workforce through change. By strengthening responsiveness, leaders can unlock future-proof resilience in their supply chain.

How will your company assess and strengthen your supply chain strategies this year?