



Resilience as strategy

Balancing risk and value in supply
chains for sustainable growth



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Rethinking the unpredictability of global supply chains

In today's world, supply chains are expansive, complex networks spanning across continents, interweaving countless variables and stakeholders. This intricate setup offers vast opportunities for efficiency and scope but also presents significant challenges. The intrinsic complexity of these modern supply chains renders them vulnerable to diverse disruptions, from environmental disasters to geopolitical upheavals.

Over the course of this paper, we explore the delicate balance that exists in global supply chains, emphasizing the integration of resilience as a strategic component of risk management amidst constant unpredictability.



The dual nature of modern supply chains

Modern supply chains exhibit a paradoxical nature: they are both a source of strength and a point of vulnerability. Their interconnectedness facilitates the smooth flow of goods globally, powering international commerce. However, this very interconnection makes them prone to ripple effects, where local disturbances can quickly escalate into global crises.

Assessing the impact of global disruptions

The ramifications of global disruptions on supply chains can be far-reaching, impacting operations worldwide. For instance, the increasing demand for scarce resources like lithium, essential for electric vehicle batteries, presents considerable operational hurdles and potential shutdowns.

Adaptive strategies in the face of evolving regulations

Navigating global supply chains also involve contending with constantly changing regulations in various countries. Adaptable supply chain strategies, therefore, become essential to comply with these shifting regulatory environment.

Redefining resilience: a cost-value perspective

In light of these challenges, manufacturers are reevaluating the concept of resilience. Increasingly, it's understood that complete resilience may be unattainable or prohibitively expensive for many. Thus, resilience is now being approached as a targeted risk management strategy, focusing on areas that deliver the most value. This approach weighs the cost of potential disruptions against the investment in resilience, prioritizing efforts where they have the most significant impact on value creation.

This whitepaper aims to unravel the complexities of modern supply chains and guide the development of resilience strategies that balance risk and value. It's about forging supply chains that are not only risk-averse but also fundamentally robust, laying the groundwork for sustainable and reliable manufacturing operations in a world of uncertainties.



Economic repercussions of non-resilient supply chains

The stability and resilience of supply chains are not just operational concerns but have profound economic implications. Recent studies have underlined the economic repercussions of non-resilient supply chains and the need for agile, sustainable, and innovative strategies to mitigate these challenges.



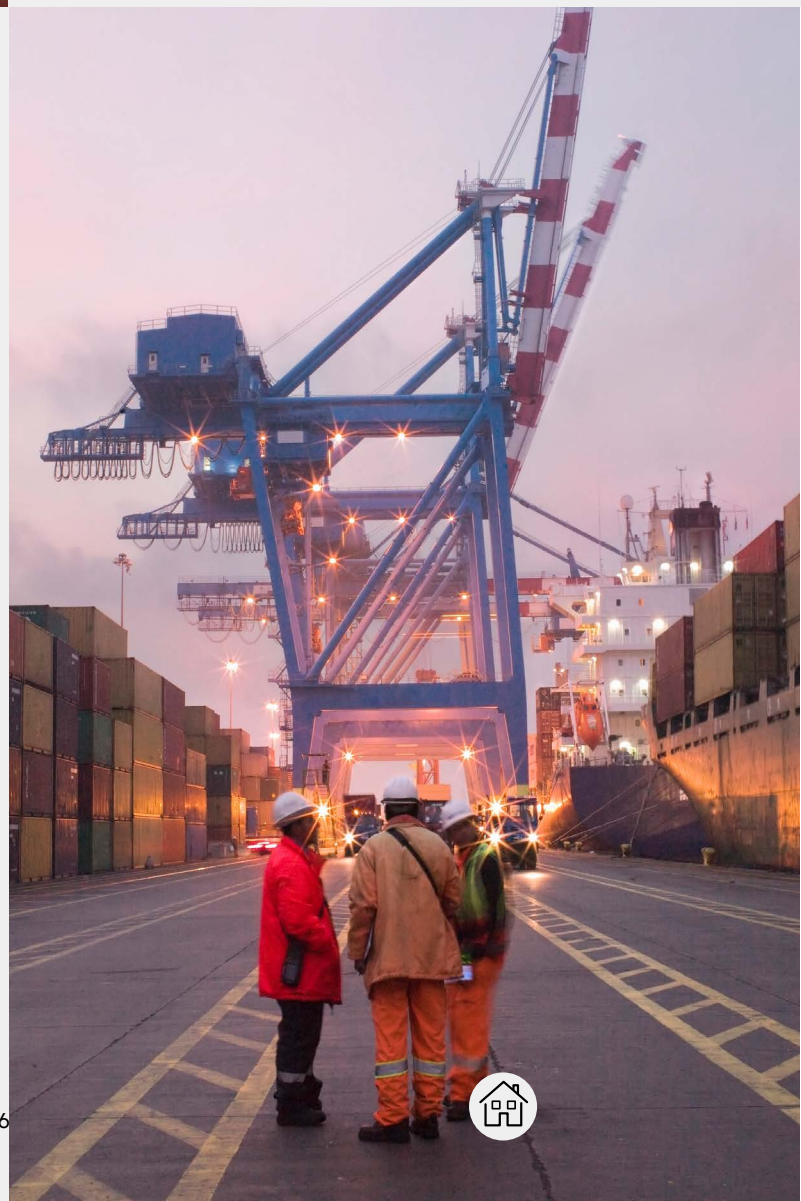


Geopolitical pressures and supply chain diversification

One in four members of the [Institute of Directors \(IoD\)](#) have been impacted by geopolitical pressures, prompting them to alter or consider diversifying their supply chains. This statistic underscores the extent to which external geopolitical factors can influence supply chain decisions, driving businesses to seek more resilient and diverse supply chain strategies.

The rise of 'slowbalization' and agile supply chains

According to a report by the [International Chamber of Commerce \(ICC\)](#), agile supply chains are a critical feature as businesses continue to adapt to an uncertain and volatile global environment. The pandemic, trade tensions, and conflicts such as the war in Ukraine have contributed to a rise in protectionist measures and a phenomenon the ICC terms 'Slowbalization'. This trend highlights the ongoing trade-offs businesses face between global and local supply chains and the necessity for adaptable inventory strategies and diversified supplier bases.



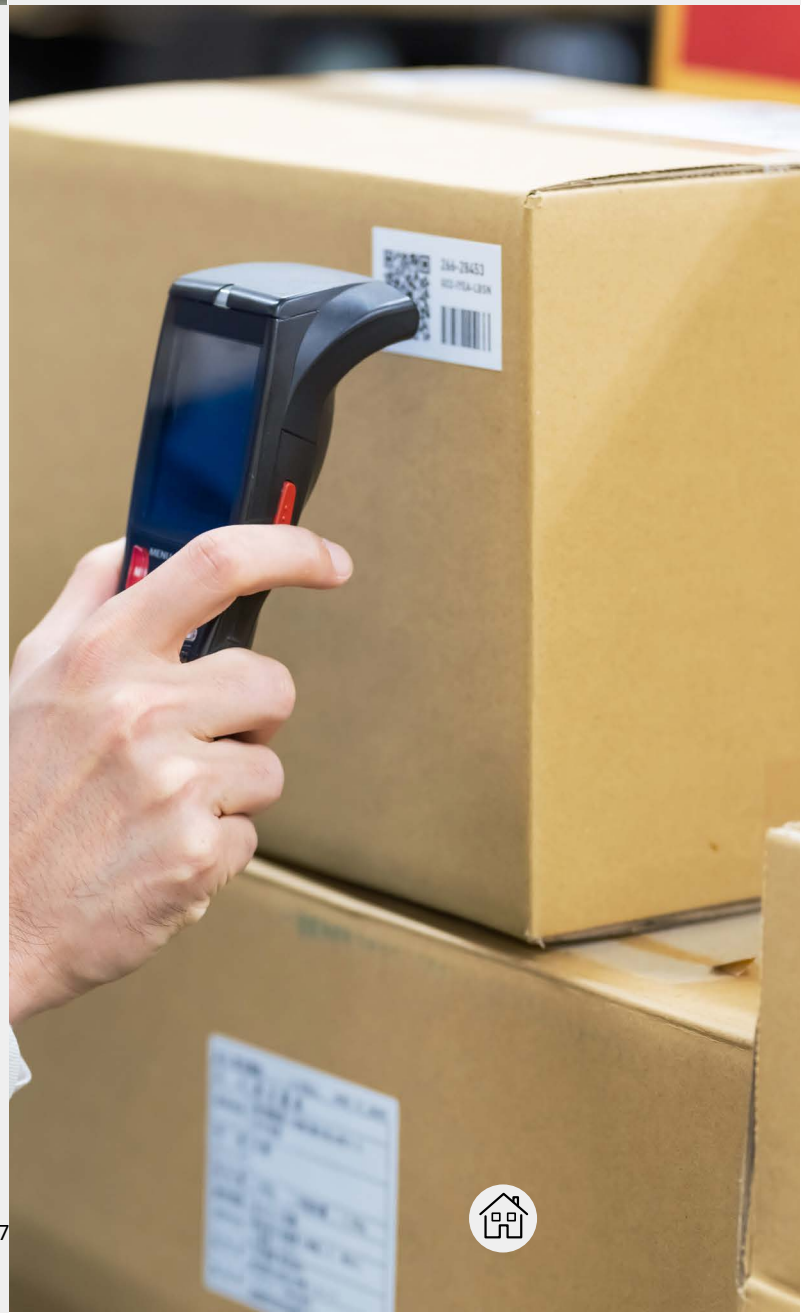


Human impact and manufacturing jobs

The [National Association of Manufacturers \(NAM\)](#) states that 2.1 million manufacturing jobs in the United States could go unfilled by 2030 due to the manufacturing skills gap. Unfilled jobs are expected to cost the U.S. economy as much as \$1 trillion by 2030, illustrating the substantial human and economic impact of non-resilient supply chains.

Cost fluctuations and the need for sustainable solutions

Price fluctuations, such as those in the oil market, pose significant challenges for manufacturers reliant on specific raw materials. This volatility prompts the question of how businesses can build sustainable supply chains amid such unpredictability. Innovation and sustainability are key here, as they not only address environmental concerns but also mitigate supply chain risks. A survey by the [World Bank](#) involving 78 affiliates of multinational enterprises in 36 developing countries found that approximately 60% have turned to digital technologies to increase supply chain resilience, optimizing capacity, and improving logistics. This shift is crucial, considering that almost [70% of organizations](#) take more than three months to recover from supply chain disruptions.



Net zero transition: Linking resilience with sustainability

According to [MAKE UK](#), almost half of UK manufacturers perceive the transition to net zero not just as a challenge but as a significant opportunity. This outlook encompasses a broader perspective where resilience and sustainability intersect, particularly in aspects like raw material supplies, including the ability to grow crops amidst changing climate conditions. Additionally, this perspective considers consumer preferences, evolving product standards, access to finance, and the enhancement of process efficiency and productivity.

This shift in perception acknowledges the increasing number of climate-related disruptions affecting supply chains. Manufacturers are beginning to recognize that sustainable practices in supply chains are not only beneficial for the environment but also crucial for ensuring the resilience of their operations. By integrating sustainability into their supply chain strategies, manufacturers are preparing themselves to better withstand climate-related and cybersecurity challenges across their supply chain operations

These research findings paint a clear picture of the economic risks associated with non-resilient supply chains and highlight the urgent need for businesses to adopt more risk-conscious and sustainable approaches. As manufacturers grapple with these challenges, the development of resilient supply chains emerges as a critical factor in ensuring long-term economic stability and growth.





The impact of trade wars, geopolitical tensions, and more

The global supply chain landscape is increasingly being shaped and challenged by political changes, including trade wars and geopolitical tensions. These disruptions can lead to shortages of key goods, price inflation, factory closures, and a multitude of other negative effects on both businesses and national economies. The question naturally arises, what strategies can companies adopt to navigate these complexities?





Effects of supply chain bottlenecks and rising freight costs

Supply chain bottlenecks and rising freight costs have cascading effects on the global economy, hitting producers and manufacturers particularly hard. These challenges not only impede the flow of goods but also drive significant price inflation. For example, the automotive industry has seen production delays due to a [shortage of critical components](#), while the electronics sector faces increased costs due to [limited semiconductor availability](#). These sectors, integral to global commerce, have experienced substantial financial impacts, illustrating how supply chain disruptions can ripple through economies, affecting everything from production timelines to consumer prices.

Integrating risk management with resilience in supply chains

Addressing contemporary challenges has led to a significant shift in corporate strategies regarding supply chains. Businesses are moving away from a singular focus on cost efficiency towards a more balanced approach where resilience is embedded as a key aspect of risk management.

This evolution in strategy reflects a nuanced understanding that the most cost-effective option is not merely about minimizing expenses but also involves embedding resilience for risk mitigation, particularly in areas that are crucial to the business.

This recalibration acknowledges that a supply chain optimized solely for cost savings may not withstand the complexities of modern risks, especially those stemming from political disruptions. By integrating resilience as a core element of risk management, companies are better equipped to handle uncertainties, ensuring that their supply chains remain robust and effective amidst various challenges. This approach doesn't just safeguard against disruptions but also ensures long-term sustainability and reliability in their operations.



Enhancing supply chain visibility

Increasingly, companies are recognizing the importance of improving the visibility of the various links and dependencies in their supply chains. Enhanced visibility allows businesses to better understand and prepare for potential disruptions. Utilizing data analytics and AI to improve transparency is one effective method companies are employing. These technologies empower businesses to pinpoint vulnerabilities, foresee potential disruptions, and formulate proactive responses, thereby improving overall supply chain resilience.



The importance of agility in supply chains

Agility has become a vital characteristic of modern supply chains. With political shifts potentially altering market conditions overnight, the ability to quickly adapt is crucial. Agile supply chains can rapidly redirect goods, source alternative suppliers, or modify production in response to fluctuating demands. This dexterity allows companies to mitigate the impacts of political instability, ensuring operational continuity. For instance, in response to sudden trade restrictions, a nimble supply chain can seamlessly switch to different suppliers, thereby maintaining the flow of materials and products without significant delays or cost escalations.



Success stories in supply chain resilience

Transforming data management: Toll Group's journey with Fujitsu to modernize and empower analytics

[Toll Group](#) needed to modernize its legacy data platforms which were difficult to access and lacked reporting capabilities. They partnered with Fujitsu to migrate their data to Microsoft Azure cloud, build a new self-serve data platform, and create bespoke reporting solutions. This provided Toll Group with a secure, easy to use modern data platform enabling advanced analytics and future growth.



The [Hamburg Port Authority](#) and Fujitsu demonstrated how quantum-inspired algorithms optimized traffic flows, reducing congestion and CO₂ emissions up to 9%. Fujitsu Digital Annealer accelerated logistics, enabling faster ship turnarounds and truck movements within the port's confined footprint. This world-first solution increased supply chain capacity and sustainability.

Revolutionizing port logistics: Hamburg Port's leap into quantum-inspired efficiency with Fujitsu



Optimizing automotive logistics: Toyota's breakthrough with quantum-inspired technology from Fujitsu

Fujitsu and [Toyota Systems](#) conducted a joint trial to optimize the supply chain and logistics for automotive parts in Japan. They utilized the Quantum-Inspired Digital Annealer technology by Fujitsu to analyze a large-scale network with over 3 million potential delivery routes from numerous suppliers. This advanced computing solution quickly identified the most cost-effective routes, potentially reducing logistics costs by 2-5%. The trial demonstrated the feasibility of using this technology for real-world logistics and supply chain operations, offering significant efficiency improvements and cost savings.



Pioneering resilient and sustainable supply chain solutions



Given their importance in the efficient operation of global trade and commerce, the robustness of supply chains is under constant scrutiny. Fujitsu, understanding this challenge, is at the forefront of transforming supply chain resilience and sustainability. As a result, we are dedicated to developing advanced solutions that prioritize timely delivery, traceability, and environmental accountability, marking a shift from mere agility to comprehensive resilience and sustainability in supply chain management.

Comprehensive resilient supply chain strategy

Our approach to creating resilient supply chains is holistic, considering every node and connection within the supply chain network. This strategy is centered on identifying vulnerabilities and leveraging opportunities for enhancement. A key component of this approach is supply chain traceability, which ensures the efficient tracking of goods in real-time. Such visibility is vital for guaranteeing timely delivery and maintaining transparency throughout the supply chain, thereby enabling quick responses to unforeseen events and market fluctuations.

Data integration and standardization for risk mitigation

The role of data integration and the standardization of systems are crucial in identifying, assessing, and mitigating potential risks in the supply chain. Our suite of solutions, such as [Fujitsu Track and Trust](#), [Digital Supply Chain Management](#), and [Digital Annealer](#), play a significant role in this aspect. These solutions contribute to creating a more secure and transparent supply chain by providing comprehensive insights into various risk factors and enabling proactive risk management strategies.

Real-time data and predictive analytics for supply chain adaptability

Our solutions are designed to facilitate rapid recalibrations and adjustments in the supply chain. By harnessing real-time data and predictive analytics, these solutions minimize disruptions and enhance the ability to predict and respond swiftly to changes in the market. This adaptability is essential for maintaining the integrity and reliability of supply chains, especially in an environment where rapid response to change is a key determinant of success.

Vision for digital, sustainable, and ethical supply chains

Our vision extends beyond creating supply chains that are merely agile and resistant to shocks. The focus is also on constructing digital supply chains that are sustainable and ethical. This vision includes a commitment to reducing carbon footprint (CO₂ emissions) and adhering to stringent environmental standards. By doing so, we ensure the long-term success and positive brand reputation of businesses that adopt these solutions. The emphasis on sustainability and ethical practices is a key differentiator in the marketplace, aligning with the growing global demand for environmentally responsible business practices.



Reimagining supply chains for a resilient future with Fujitsu

As the global manufacturing landscape transforms, the imperative for creating resilient supply chains as part of an overarching risk management strategy becomes increasingly vital. Fujitsu, with our deep-rooted experience in manufacturing and an array of advanced technological solutions, is well placed to guide businesses in building robust, resilient supply chains. We envision future supply chains that go beyond mere efficiency and speed, focusing on resilience, sustainability, and adaptability, underpinned by sophisticated technological integrations.





Key benefits of the resilience-focused supply chain solutions by Fujitsu

Our approach to supply chain management equips manufacturers with tools that not only enhance operational efficiency but also embed resilience within their supply chain ecosystem:



Strategic visibility and optimization

Our solutions offer comprehensive visibility and control, encompassing elements like supply/demand planning and thorough traceability. This ensures informed decision-making and operational efficiency, crucial for resilience in dynamic markets.



Agility in adaptation

Rapidly adapting to market changes is essential. Our solutions enable manufacturers to quickly adjust to shifts, ensuring stability in procurement processes, minimizing overproduction, and enhancing product quality.



Sustainable practices for long-term resilience

Sustainability is integral to resilience. We focus on reducing waste and carbon emissions, encouraging practices that align with global sustainability trends and contribute to long-term supply chain resilience.



Global optimization for consistent resilience

Our solutions facilitate the global orchestration of operations, ensuring consistent performance and resilience across diverse locations, crucial in managing risks associated with geographical and political factors.



A strategic approach to building resilient digital supply chains

Creating a resilient digital supply chain demands a strategic blend of planning and action. The Fujitsu methodology ensures that supply chains are not only efficient but also resilient, aligning with global sustainability standards and regulations. This blend of sustainability and resilience is pivotal in preparing supply chains for the challenges of today and the uncertainties of tomorrow.



Partner with Fujitsu for a resilient future

By collaborating with Fujitsu, your organization can fortify its supply chain operations, making them robust enough to withstand current challenges and adaptable for future opportunities. The future of supply chains is one where performance, sustainability, and resilience are integrated seamlessly. Together, we can position your business at the forefront of this progressive evolution, ready to tackle the demands of an ever-changing global landscape.



Contact Fujitsu to find out more about our services and products for manufacturers.

[Contact Fujitsu: Fujitsu Global](#)