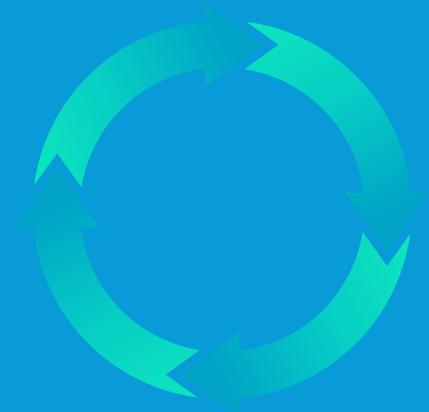




SUPPLY CHAIN NETWORK IN A POST-PANDEMIC WORLD

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Synopsys

Technology and process advancements such as targeted personalization, next-day fulfillment, and other distribution-side capabilities had started shaking up the way businesses were operating in the pre-pandemic world. These capabilities continue to be important post-pandemic but need to be supported by uninterrupted supply chain capabilities.

This white paper talks about the supply-side capabilities that organizations should build for the future while increasing their value proposition to customers. It also describes the challenges and approaches to designing a resilient supply chain business network for a post-pandemic world reeling under the fear of stagflation and uncertainty of the macroeconomic outlook.

Supply Chain in the Post-pandemic World

The unprecedented disruption to the global sourcing model caused by the pandemic led to the necessity of redesigning not only the supply chain

network but also the way enterprises manage risks, handle disruption of supplies, collaborate, execute business processes, manage assets, and deliver aftermarket support to their customers.

Outside-in supply chain and network-based supply chain processes are emerging as a paradigm shift in the way organizations manage their supply-side processes and collaborate with business partners. This shift in supply chain thinking strives for business continuity during unusual circumstances by ensuring uninterrupted supplies with reduced volatility in logistics cost during uncertain times now and in the future.

Current Challenges

Companies across all industries and formats are facing serious challenges in engaging with businesses and end customers. Some of the key challenges are:

- Disproportionate investments made in matching capabilities in the distribution and customer side of the supply chain were considered

sufficient in the pre-pandemic world. Capability building for the supply side was not included in strategic investments

- Supply chain networks are not designed to respond swiftly when supply is constrained. Companies lack the capability to predict supply-side delays, make real-time adjustments to short-term plans, adhere to the delivery-date promise, handle fluctuations in demand, increase transportation efficiency, ship smaller order sizes, build re-routing capabilities, and increase visibility at all nodes of the supply chain
- All formats of supply chain networks have suffered major supply disruptions in the post-pandemic world. This has been further complicated by the overseas and domestic transportation and logistics challenges, increasing distribution costs, and uncertainties around availability



Building a Resilient Supply Chain

Operational excellence is the key to supply chain management. Companies must acquire certain key capabilities for profitable and competitive advantages in a networked world.

Right model for adjusting the supply chain

To reduce the risk associated with overconcentration of manufacturing and sourcing, companies who have been traditionally manufacturing and sourcing in Asia and selling globally must evaluate one of three strategies to build an alternative supply network:

- Revised global supply chain: This is limited in nature. Can be started with some low-risk low-hanging opportunity such as sourcing of packaging materials from local or alternative sources depending on the material/product line.
- Migrate: Migrate from one low-cost area to another area where cost and labor availability are identical. By building such an alternative supply network, companies can de-risk disruption in the supply chain.
- Regionalization: Bring manufacturing and sourcing closer to the market

Simplified cross-border compliance

While evaluating alternative geographies, factors such as cost of compliance must be kept in mind. Emerging and aspiring countries must also review archaic processes and documentation requirements. There is a greater need to define a cohesive process cutting across multiple layers of bureaucracies across geographical borders. This appears to be one of the most important prohibitive factors for any geography to attract new business. A common gateway interface, common data model, and traceability through blockchain will play a major role.

Sustainability with energy and logistics optimization

Many of the old and emerging economies that now aspire or need to be part of the new supply chain network must start working on the following:

- Clean energy and last mile logistics compliance that includes strengthening multi-modal logistics network
- One-window clearance
- Use of emerging technologies such as drones, which promise to revolutionize last-mile delivery from both supply and customer perspective

This necessitates a unified logistics interface platform (ULIP) for visibility and collaboration, a blockchain-based multi-party contracting solution, and one common data model for a single version of the truth. This framework should be aligned to the common protocol for connectivity using standard API for ease of integration.

Multienterprise Supply Chain Business Network (MESCBN):

According to Gartner, a multienterprise business network is a digital supply chain network platform that brings all trading partners together on one uniform platform to communicate/collaborate and execute business processes that extend across multiple enterprises with an end-to-end shared focus.

Such a business network offers several features such as frictionless handling of events during peak and off-peak periods and built-in control tower functionalities to detect potential issues before they take place. In addition, an MESCBN must provide an outside-in approach to traditional supply chain planning processes on the same data model for ease of use, de-duplication, and accelerated integration.

Such networks are offered by third-party software vendors who offer multienterprise business partners with necessary tools, services, integration technologies, analytics, data protection, and security. This is a major shift from an inward-looking enterprise-centric mindset to a real multienterprise outside-in approach to managing the supply chain.

One of the major challenges of building MESCBN is the network protocol and architecture required for all ecosystem partners to collaborate with thousands of other business partners on other networks and ensure trust.

Interoperability of business networks

The answer to some of these challenges can be found in a concept such as Open Network for Digital Commerce (ONDC) supported by a powerful unified payments interface (UPI) and ULIP. This is emerging as the next defining shift for the digital supply chain highway. ONDC, UPI, and ULIP will play an instrumental role towards restructuring the supply chain network and addressing issues not properly articulated by the MESCBN.





Unified Logistics Interface Platform (ULIP)

Logistics cost is a significant component of overall supply chain cost. In mature economies, large players in integrated logistics are well equipped for operational efficiency in multiple areas including planning, compliance, and container capacity optimization. ULIP is an opportunity for smaller and emerging players in this field in emerging economies to achieve the same level of operational efficiency as larger companies. ULIP not only improves operational costs but also brings transparency and visibility across the entire journey of shipment.

Trust between network players

A trusted network is crucial to be successful. Adherence to comprehensive data protection and privacy processes (GDPR compliance) and in-built functionality for data authenticity such as blockchain plays a critical role in building trust among network players.

Optimization of the supply chain network for operational excellence

Optimization through supply chain re-design is the first step toward the MESCBN or ONDC journey. It mainly starts with the following business-led initiatives followed by the transformation of the existing IT systems and IT services as an enabler.

Regionalization

This involves a shift from a global to a more regional and local network.

Category management

From a traditional ABC, XYZ-based classification, an entirely new approach to the last component of the nested bill-of-materials is needed to avoid disruption to supply and aftermarket support. The supply chains of some industries will be more prone to disruption than others. In certain sectors such as semiconductors and active ingredients for pharma, chemicals, and medical devices, government intervention will drive changes in the supply chain. However, in white goods, CPG, and items of household use or industrial consumables, a trade-off or a balancing act is required to minimize disruption. This is a comprehensive exercise with a notable impact on the profitability of the product. A category-by-category make or buy and location strategy is required. One of the key strategies is to redesign the corporate tax model.

Tax optimized supply chain network

As enterprises evaluate categories for make or buy, it is important to evaluate the cost of goods manufactured (COGS) and corporate tax within the legal framework and law-of-the land. This may include:

- Make or buy: Discontinue buying certain components or assemblies from overseas but start manufacturing near-shore in a tax-friendly zone. Key design strategies include an increased level of automation, lower logistics costs, and low input tax. This can

have huge implications for decision-making as several variables such as volatility of fuel price, recurrence of endemic/pandemic, war, shipping, and logistics bottleneck (container availability, port, terminal capacities) have major implications on cheap sources of supplies. Arriving at a decision requires innovative network modeling capabilities and top-down management commitment.

- Corporate restructuring: This involves a restructuring of the enterprise from the point of view of inventory ownership, manufacturing, and go-to-market which has a significant 5-7% impact on the profit before tax (PBT). Such restructuring is not limited to simple accounting or taxation-related changes but involves the redesign of internal processes from order-to-cash, procure-to-pay, and plan-to-fulfill points of view. This may require massive re-structuring of ERPs.

The role of IT

A strong IT team must tap into and implement technologies such as cloud and big data and build a connected, intelligent, collaborative, resilient, and customer-centric platform for the enterprise.

Network analysis: Analysis of network economics and efficiency across various parameters requires a huge amount of data crunching through a powerful data analysis engine. Businesses need to compare network performance for the existing KPIs and provide scenarios based on what-if simulation capabilities to compare against different versions of the to-be KPIs.



Conclusion

In the post-pandemic scenario, enterprises must revisit their supply chain strategies and take a well-rounded view of their digital transformation approach to stay competitive. The strategy must take into consideration local and global availability of supplies, local laws, the state of their own IT operations, and current technological advancements.

- **Alternative sources:** The success of defining an alternative supply network, based on strategies such as migration and regionalization requires strategic commitment from local government bodies. Support is required for ease of doing business including global anti-bribery and anti-corruption policies, availability of clean energy from a sustenance perspective, and most importantly a balanced approach towards labor laws. It is a multi-year initiative where a consortium of similar industries and a cluster of emerging economies must collaborate and innovate together to define inter-operable infrastructure and architecture such as MESCBN, ONDC, UPI, and ULIP.
- **MESCBN (also ONDC):** This is the network of the future. MESCBN is evolving and will require companies to revisit the definition of traditional SCM KPIs and policies not only in terms of operational efficiencies and risk and rewards but the entire gamut of activities, ranging from sourcing to after-service with blockchain as an integral part of the system of records.
- **Digital transformation:** Businesses must revisit their objectives for digital transformation. Use cases and levers for transformation envisioned during the pre-pandemic world are no longer relevant. A re-design of the network usually results in re-structuring corporations and underlying ERPs. This is one of the strongest business cases for not only the digital transformation of ERPs but also the way enterprises run their IT today.
- **Simplified enterprise IT:** Companies will have to improve their underperforming IT systems, especially large organizations that have multiple ERPs and function-specific point solutions. Frequent

abends, manual/semi-automatic processes, and data inconsistency contribute to a lack of visibility to handle supply chain disruptions.

Role of Infosys

Infosys has successfully demonstrated its capability to transform large-scale complex projects for governments and huge corporations with the scope not just restricted to technology but also involving the transformation of business functions and extensive organizational change management. With its proven expertise in digital transformation, Infosys is well placed to deliver an outside-in business network-based supply chain. This is achieved by leveraging deep capabilities in SAP's Business Technology Platform for cloud-based innovation and SAP's digital supply chain offering that includes business networks for a collaborative supply chain. In addition, Infosys draws on its vast experience in integrated planning, analytics, and capabilities in emerging technologies to redesign and deliver digital transformation aligned to the key objectives of various supply chain networks in the post-pandemic world.



About the Author

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Giriraj is a supply chain professional with experience in diagnosing, benchmarking, designing, and implementing supply chain solutions. His areas of functional expertise include solutions related to supply chain planning, order management, fulfillment, and procurement.

Over the last 20 years, Giriraj has deployed complex SAP ERP and planning solutions for industries such as CPG, industrial manufacturing, process industries, and medical devices with global and complex supply chain networks across North America, LATAM, Europe, and Asia.

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