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Supply Chain Trends from a TMT Lens

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TMT companies are rapidly embracing new trends—from digital transformation to regional manufacturing hubs, as well as increasingly adhering to ESG norms—to build greater supply chain resilience for the future. Their strategies include:

- Restructuring supply chain strategies by diversifying production bases and supply lines through onshoring/nearshoring and localization strategies—more emphasis on dual sourcing supply from low-risk multiple regions
- Revamping procurement process to maximize circularity by engaging green-certified suppliers and gaining end-to-end visibility to reduce emissions
- Mapping risks, assessing vulnerabilities, embracing innovations and compliance, and diversifying the supplier base remain key aspects to attain a competitive and sustainable edge

In the last couple of years, the COVID-19 outbreak and geo-political tensions (especially the Russia-Ukraine conflict and tensions in the US-China relations) have disrupted global supply chains at an unprecedented level. From retail to e-commerce and banking to healthcare, every sector has witnessed supply chain failures that left several companies struggling with unexpected issues. The Technology, Media, and Telecommunication (TMT) industry is no exception. It has endured severe fluctuations with supply chain risks affecting the availability of essential components, products, and services. In several instances, enterprises have struggled with their reliance on single sources and interdependent and concentrated networks for direct procurement of products. Such disruptive shifts have compelled companies to invest heavily in their supply-chain operations with a special focus on network resilience and regional manufacturing. TMT leaders worldwide are continuously addressing the crisis and building greater supply chain resilience for the future.

These acute economic disruptions and systemic challenges have affected the unfettered movement of goods, bringing fundamental transitions in the TMT industry. One of the major contributors to it involves the changes in consumer behaviour. The aftermath of the pandemic propelled rapid transportation of products and services to the customer, pushing companies to streamline their supply lines. Emerging potential opportunities, advanced technology adoption, and industry trends have evolved to help companies thrive and prepare for uncertain future challenges. The new normal focuses on digital transformation, regional manufacturing hubs, network buildout, and ESG as urgent business imperatives.

Increased Leverage of Advanced Technologies

Emerging technologies such as artificial intelligence/machine learning (AI/ML), the Internet of Things (IoT), cloud computing, robotics, and blockchain have found various suitable applications in the TMT industry, transforming business models and operations. However, the disruptions infused by the pandemic and geo-political tensions have catalyzed TMT companies to pivot towards emerging technology and expedite the adoption consciously. Via technological solutions, businesses explore viable and effective approaches to bolster their internal channels. This includes minimizing the traditional fragmented approach and

enhancing supply chain visibility, coordination, and performance to new levels—from design and planning to production, distribution, and consumption. For instance, Lenovo, a global electronics company, has integrated AI/ML to continuously analyze supply chain data and identify potential issues along with subsequent solutions in real time. Likewise, IoT and blockchain assist businesses by simplifying and streamlining the tracking of components through the supply chain. Canon, a global imaging tech giant, integrated IoT sensors, vehicle telematics, and other collaborative tools to enable transparency and visibility on its supplies and shipments via a secured and integrated end-to-end ecosystem.



Moreover, tech models such as digital-twin and data-driven platforms have become extremely useful in creating multi-level end-to-end supply chain visibility to better stress-test the supply chain models. For instance, Dell has made efforts towards a sustainable supply chain by deploying digital models that create simulations and allow the company to plan a variety of supply and demand scenarios. The use of cloud computing solutions facilitates and helps manage supplier relationships.



Globally, TMT players are following a proactive approach by measuring emerging technology projects against performance metrics and prioritizing investments. The incumbents are partnering or developing in-house emerging technology-based solutions to assist businesses in addressing supply chain challenges. Furthermore, extensive data sharing and analysis are required to unleash the full potential of these technologies. However, companies must remain cognizant of the legal risks emanating from evolving technologies in data privacy, regulations, and trade laws.

Re-thinking Nearshoring and Localization Strategies

Geopolitical tensions, especially the Russia-Ukraine conflict and US-China trade war, further aggravated supply chain risks. Consequently, it propelled the companies to restructure their supply chains and reduce dependency on specific geographies. Traditionally, many TMT companies have been counting on China and Southeast Asia. This is mainly due to production and inputs, workforce availability, supporting infrastructure, and maximizing cost advantage on offerings. However, the extended lockdowns in these geographies fueled the adverse effects of the disruptions occurring in the complex TMT supply chains. Despite increasing the overall network complexity by adding more players to the ecosystem, the regional production hubs have served as an alternative to ease delays and mitigate shortages in times of disruption.

TMT players have affirmed their commitment to rationalizing and optimizing their sourcing strategy, product complexity mix, and production and distribution footprint. For instance, in 2022, Germany's Merck Electronics (tech division of Germany-based pharma company Merck) announced heavy investments in expanding its chipmaking materials and chemicals output. It aimed at helping major chip companies localize production and meet the demand for next-generation semiconductor production. The move



created an opportunity for TMT players to build a vertically integrated marketplace by bringing their manufacturing base closer to end customers. In recent years, high-profile TMT players have made vertical mergers and acquisitions driven by efficiency-enhancing motives to pursue regional supply chain integration.

New legislation has been floated to prevent the TMT industry from taking setbacks during unprecedented times and boost the localization agenda. For instance, the US Clean Network Program 2020 was designed to curb the use of certain foreign technologies in domestic critical supply chains and even block access to procurement opportunities for suppliers that use targeted foreign technologies and equipment. Further, implementing the Chips Act across the European Union and the US in 2022 is targeted to incentivize the local designing and production of semiconductor chips within their territories. The frameworks secure domestic competition from the adverse effects of international development, simultaneously reducing dependence on global players (such as Taiwan and China in the case of semiconductors).

Focus on Sustainable and Environment-friendly Measures

Certainly, TMT companies worldwide are significant contributors to global energy usage, emissions, and e-waste. The massive direct emissions footprint contributes to the world's indirect and supply chain footprints, driving the need for aggressive action. Moreover, environmentally conscious consumers have become increasingly vocal, compelling companies about the need to deploy sustainable business practices. These mainly include managing the environmental and social impacts of their supply chains. Unsurprisingly, ESG goals have become a critical dimension of the TMT industry in recent years.



From rethinking the use of packaging plastics to scientific targets to reach net-zero targets, TMT players are embracing sustainable practices in supply chains. For instance, leading TMT companies in the industry, from the outset, are re-designing their supply chain to maximize circularity by engaging with green-certified suppliers and gaining end-to-end visibility to reduce scope three emissions (indirect emissions of a business). For instance, Microsoft's Responsible Sourcing of Raw Material (RSRM) policy supports health and safety, environmental protection, and business ethics in the farthest reaches of its supply chain. Likewise, Apple and Sony have introduced their environmental and social protection codes and policies to ensure their suppliers comply with environmental quality standards and regulations. The procurement process is undertaken by manufacturers/suppliers who are certified as Green Partners. Furthermore, TMT companies leverage advanced technology and even offer key supply chain partners access to renewable energy solutions to enable sustainability. The aim is to align best practices from the bottom up and comply with rapidly evolving ESG norms.

The Way Forward

Without a doubt, TMT companies need to implement learnings from past disruptions and prepare for the future. Companies should emphasize building agility and flexibility to enhance supply chain visibility and anticipate bottlenecks. These include onshoring/localization strategies, dual-sourcing supply from multiple regions, strengthening upstream and downstream visibility, monitoring supply risk, data sharing, and supporting partners to create an integrated supply chain management system. With a robust investment in the right combination of people, processes, and technology, companies can build more sustainable and resilient supply chains and emerge stronger. The objective is to transform a rigid, linear traditional supply chain into an agile, networked ecosystem where all players work collectively.



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