

Safeguarding supply chain sustainability in a post-pandemic world

 By [Dr. Juanita Maree](#)

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The global supply chain, which on the outside seems to be a seamless ebb and flow of products to all corners of the world, is, in actuality, a deep-tiered, interconnected, and complex system comprising a plethora of sub-systems. A whole sub-economy arguably acts as the backbone of globalisation.

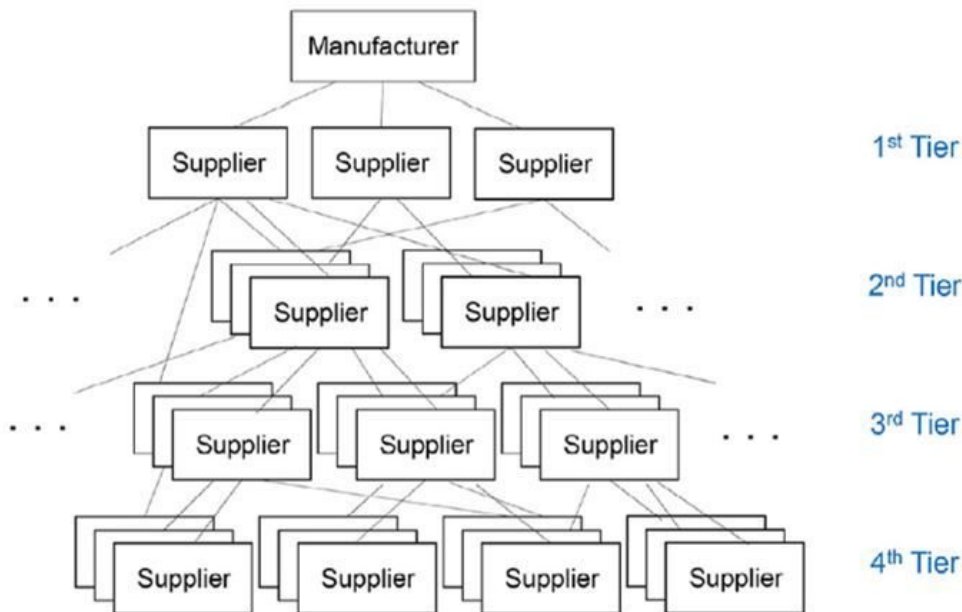


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The Covid-19 pandemic has laid bare the inefficiencies and challenges within both global and local supply chains. However, one of the main objectives of government and business is sustainability. But sustainability explicitly calls for the recognition of and adaptation to future trends in the industry. Below we delve into some of the most prominent trends in the global supply chain in a post-pandemic world, before zooming in on our local South African supply chain.

Firstly, let us briefly consider two prominent trends that have led to the major outward shift in global demand for logistics services: globalisation and deep tiering. Globalisation is a product of global markets, global costs, and new technologies in different world regions. Manufacturers and retailers have taken advantage of driving economic value in their operations, by employing economies of scale to produce efficiency. Deep tiering in concurrence, is the system by which each manufacturer relies on suppliers, who in turn rely on more tiers of supplier networks, leading to complex interdependencies.

Figure 1: Deep tiering

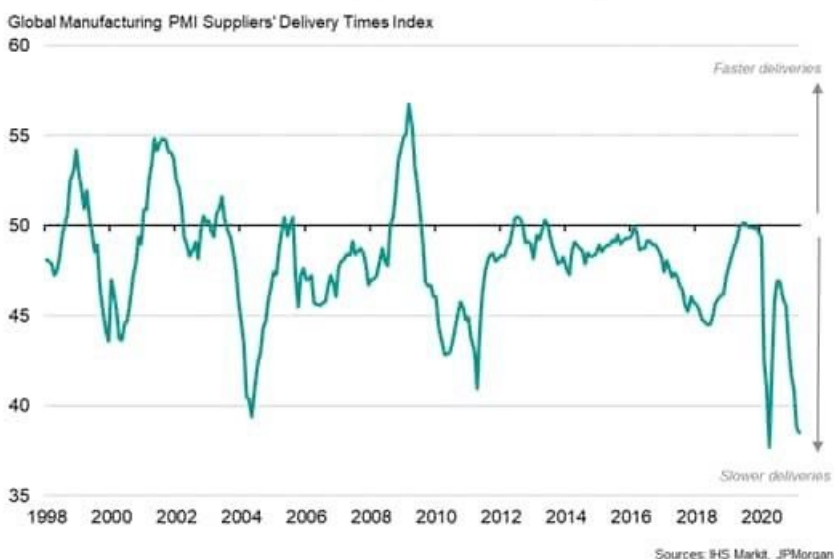


The third trend is supply chain resilience. The Covid-19 pandemic has shown us how fragile global supply chains actually are and the extent to which they are unequipped to deal with global economic shocks, especially those resulting from periods of massive economic upturn (as evidenced in 2020 and 2021). Figure 2 clearly demonstrates just how rigid the global supply chain is.

Supplier delivery times fell to unprecedented lows amid economic shocks such as a strong resurgence in U.S consumerism post hard lockdown, as well as the labour supply shock along major global ports stemming from Covid-19 curbing measures. Retailers, manufacturers, and end-users ultimately suffered due to the fragility of the global supply chain.

Figure 2: Global PMI Supplier's delivery times index

Chart 1 Global PMI suppliers' delivery times index



A firm's reputation is largely dependent on the resilience of its supply chain, as well as its sustainability and profitability. Therefore, a firm must consistently demand the highest of reputations through the extreme resilience of its supply chain.

The promise of big data analytics, the decentralisation capabilities of block-chain and the broader technological advancements surfacing are most deserving as the fourth major trend manifested by a post-pandemic world. Technology continues to be the most significant disruptor to traditional logistics processes, driving institutions within this industry to adapt. **These disruptive technologies include:**

- **Internet of Things (IoT):** provides unparalleled connectivity between devices, optimising the efficiency of supply chains, visibility, operations, and security.
- **Artificial intelligence:** AI-led automation which can be implemented as predictive instruments to execute tasks such as stock-taking in a warehouse, optimisation of stacking and fluctuations in demand, amongst many other, cycles to prevent inventory deficits and with unrivalled efficiency, speed, and accuracy.
- **Cloud logistics:** enables real-time solutions such as real-time transportation scheduling and real-time inventory and cargo visibility, coupled with RFID and IoT technologies.
- **Blockchain:** a complex decentralised ledger technology that has the potential to revolutionise the logistics sector. Through its scalability, risk-mitigation, and processing speed, it has the potential to cut costs and minimise the fraudulent activities that happen across the global supply chain.

South Africa has borne the brunt of some punishing supply chain disruptions in 2020/21. The tyranny to businesses caused by the nationwide civil unrest, the vandalism and thievery on our rail networks, the well documented Transnet IT-systems cyber-attack, are just some of these disruptions. All of these challenges amid a pandemic – not to mention the discovery of the latest virus mutation - the Omicron variant.

These adverse events dealt a hard blow to our economy and vastly tested the already fragile local supply chain. The costs of these delays run deep, affecting employment levels, GDP growth, foreign investment, and industrialisation of our logistics networks.

The UNCTAD indicated that in 2020, the ship carrying capacity to Durban suffered a 6.6% decline in the first quarter. Furthermore, the port lost 5% of liner shipping services, 6.2% of ship calls and 2.8% of the deployed capacity in the second quarter of 2020. Moreover, South Africa suffered the degradation of being ranked fourth out of the bottom five of the world's 351 competent container handling facilities early in 2021 by the World Bank's "*Container Performance Index*" (CPPI). Although being widely contested locally, the report places perspective on the ability of South Africa's ports to remain competitive and serve as the apex of our logistics network.

South Africa must, as a collective, call for decisive action. The road to prosperity requires a unified and collective effort to ensure that our logistics network is maintained and attracts the attention it deserves. Job creation and economic growth now, arguably more than ever, require precedence over policy, ideology, and long-term strategic objectives.

In conclusion, the fragility of supply chains has been made most apparent by the Covid-19 pandemic, catalysing a much-needed change in the industry. As a result, many trends have arisen that need to be addressed and adopted to safeguard sustainability moving into a new post-pandemic world. Technology, resilience, globalisation, and most importantly, the protection of our local supply chain and the broader economy require precedence to usher in a new era of logistics.

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