



Sailing through streamlined supply
SMART supply chain management

mazars



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Overview

An efficient supply chain is one that can withstand any test of time; it is embedded within the core value model, managed by skilled and equipped people, driven by multimodal channels and sustained with technological integration and R&D.

The past two years have been nothing short of a supply chain orchestral headway, with every industry falling under a production limbo. Even the most diverse and “integrated” value chains found it hard to sustain as global lockdowns and local restrictions halted operations.

These supply chain bottlenecks were further reflected in higher prices via increased freight costs and inadequate availability of raw material forming backward linkages, which then disturbed forward linkages in the product cycle – in short, a domino effect.

Within this, a mixed policy interplay and brewing inflation further exacerbated the music, calling for large-scale reforms.

Be it India or the rest of the world, this was not a one-time event that blew value chains down. Covid-induced problems came as a reality check that brought upon many long-standing gaps into the limelight.

While the initial years and waves brought about a whirlwind of chaos, the lessons learned toward managing futuristic operations have been invaluable.

This paper studies the supply chain story across India, analyzing it from both a macro and micro perspective.

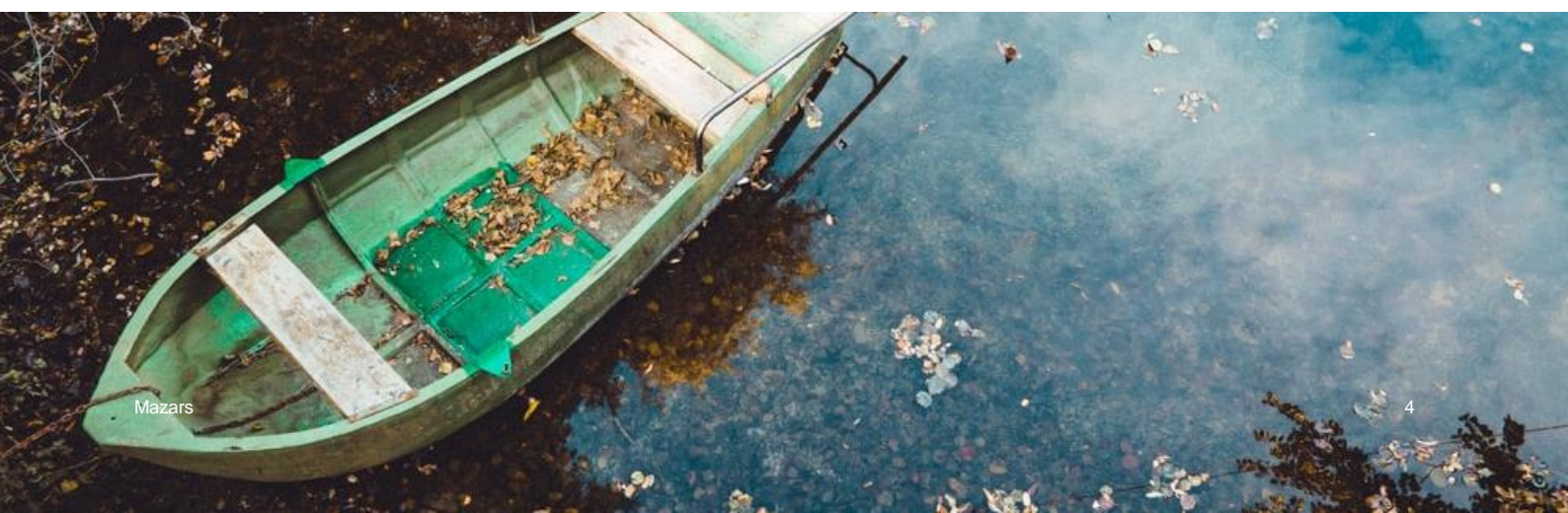
What exactly happened to industrial chains when covid hit? Why did the gaps occur? Could they have been negated? How were they ironed out? What else remains to be done?

Mazars believes that while a lot has been done to normalize operations within the first two waves, the long-run supply chain model requires streamlining a shock-absorbent network on both an intra- and inter-business front. This includes integrating the 5-layer supply chain management approach within businesses, as well as adopting risk-management tools like hedging and node-diversification across the value ecosystem. At the end, supply chain cannot be handled by one company alone; it requires proper coordination and cooperation among all stakeholders.

We hope the paper presents pertinent insights in shaping up a new supply chain era and welcome your feedback.



Ankur Malhotra
Director
Mazars in India



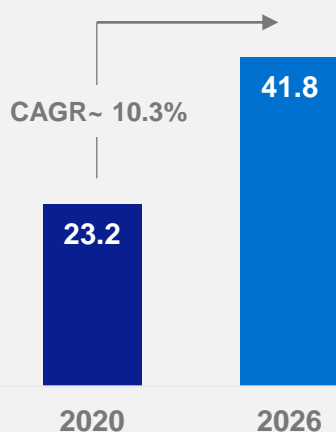


The big picture

The big picture

The advent of managing multi-tier supply chains has become the need of the hour, with the supply chain management (SCM) market catapulting radically from the pandemic. The post COVID-19 global SCM market is forecasted to almost double from USD 23.2 billion in 2020 to USD 41.8 billion by 2026, growing at a CAGR of 10.3%. The need for information transparency and flexibility in the value chain, amid digital integration and cloud-based migration, is creating new areas of demand across regions.

Global supply chain management (SCM) market (USD bn)



Source: MarketsandMarkets

- Geographically, while North America is estimated to hold the largest market size at present, a substantial growth up-take is expected in the APAC region. This can be attributed to a rising demand for SCM solutions, as well as streamlined opportunities in the transportation and logistics vertical.
- The cloud segment is estimated to grow significantly, from ~USD 3.3 billion in 2020 to ~USD 6.9 billion by 2026, at an approximate CAGR of 13.2%. Enterprises that are integrating cloud SCM solutions are witnessing a host of benefits such as better visibility, real-time information, scalability, and reduced delays. This is directly playing into reduce the total cost of ownership and other operational costs.
- There has been an increase in adoption of SCM software in Fast-Moving Consumer Goods (FMCG), retail, eCommerce, healthcare, and pharmaceutical companies.



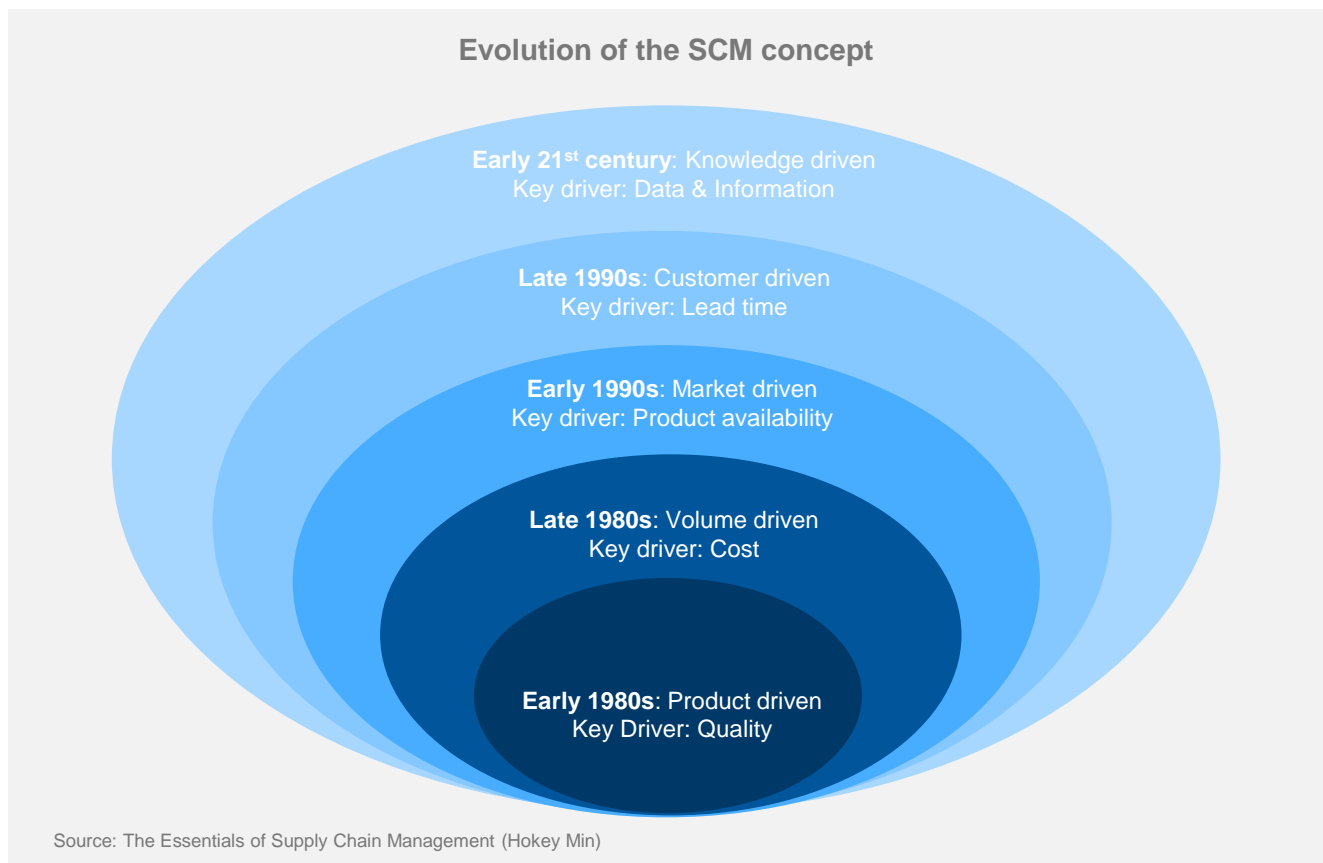
Sailing through streamlined supply

The big picture

The conceptual chain

From a conceptual framework, the notion of what a supply chain is has not been a new revelation; this has been a part of our lives since the invention of the wheel. However, the nature of how supply chains are perceived has gradually evolved over the years, starting from

an abstract and single-variable feature to a data centric philosophy and holistic approach that affects every business decision today.



Supply chain management, or SCM, specifically deals with the planning, logistics, control of materials and flow of goods, services, and information – be it internally within the company or externally between companies.

It also deals with strategic inter-organizational decisions and relationship management between suppliers and customers.

Supply chain management makes business processes more resilient, agile, and competitive, thereby improving product and service quality.

Sailing through streamlined supply

The big picture

Holistically, the supply chain management process comprises of nine main components. These are essential touchpoints that must be executed to achieve customer satisfaction and meet business-wide goals.

9 touchpoints of effective SCM



Plan

One of the most critical stages that deals with checking the demand, viability, costing, profit, and manpower requirements of the business offerings in question, with the intent to create an optimal strategic blueprint. Planning helps identify demand and supply trends in the market and thereby creates a successful supply chain management system.



Information dissemination

Information is a dominant driver these days for every prospect of business. For a successful supply chain system, having a proper and timely dissemination of critical demand-supply related information is pertinent through various levels in the business.



Source

Activities associated with ordering, delivery, receipt and transfer of raw material items. Procurement of timely and cost-efficient raw material from suppliers is necessary for businesses to maintain product quality for the end user, avoid losses and gain a competitive edge.



Inventory

Keeping and maintaining inventory is critical in supply chain management as that is what ultimately drives meeting sales orders and demand in a timely manner. Businesses may adopt different inventory management methodologies (i.e., JIT, JIC etc.) that best fits their operating needs.



Make

Making, also referred to as production, is one of the most important aspects of the system, turning raw material into finished goods for the end user. For the process of production to start it is essential that proper planning and supply of goods, as well as inventory, are well maintained. This is then followed by testing, packaging and final preparation for delivery of finished products.



Location

The place where goods are manufactured should be strategically chosen. It is vital that businesses internalize what all inputs are of utmost necessity so that they are not too far from procurement, along with the requisite manpower requirement. A suitable location will also be one that is well connected to the target market.

Sailing through streamlined supply

The big picture



Transportation

The thin thread that runs through each touchpoint in supply chains is transportation. A timely, efficient and economical system of transportation is crucial for both carrying raw material to manufacturing sites, alongside delivering finished goods & services to market. A well-managed safe logistics system that ensures zero damage and minimal loss in transit, consists of flawless invoicing and facilitates real-time information exchange is essential.



Return

Among the various components that make up supply chain management is the creation of a facility for return of faulty/ malfunctioning goods, along with a highly responsive consumer grievance redress unit. It is true that occasionally products can be off the mark or imperfect. This is a risk that cannot be eradicated but precautions can be engineered to mitigate adverse impacts to a certain extent.



Enable

This is the binding factor that helps manage all the components in a supply chain. This step ensures that every team member in the chain complies by the rules. It reduces risk by thorough resource and risk management. Every element needs a force to connect it with others for optimal utility.

Source: Press Articles & Mazars' Analysis



Sailing through streamlined supply

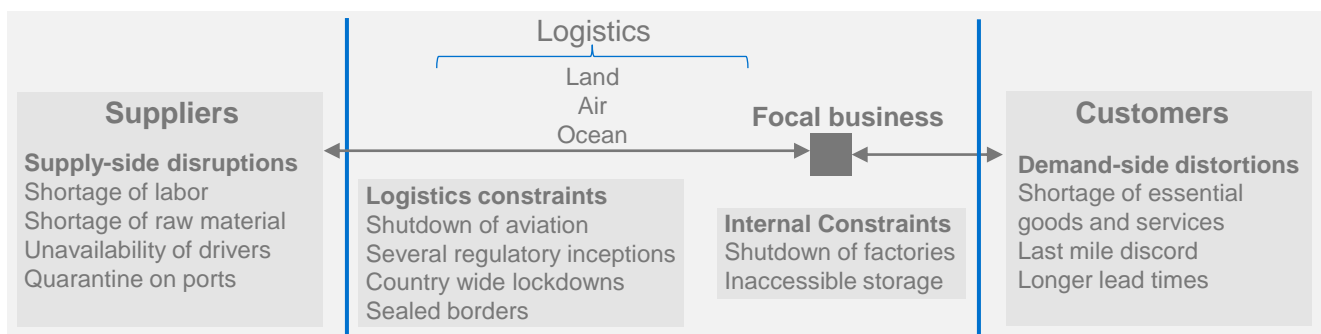
The big picture

Gaps in efficient management

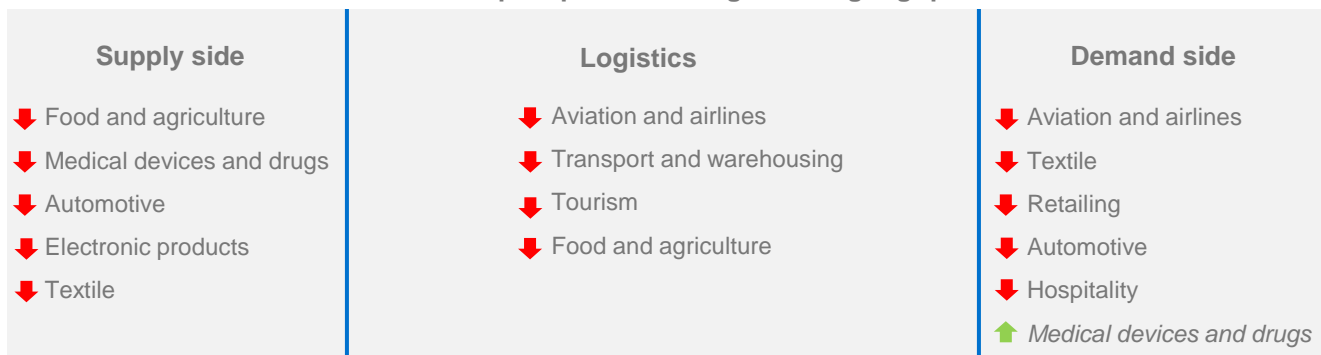
For managing an efficient supply chain, it is necessary to have a seamless forward flow of goods and a backward flow of information. Practically, this may not always be easy to maintain due to various internal and external shocks that affect businesses from time to time.

The past two years are a prime example of what became an orchestral headway for global supply chains across various industries and brought several shortfalls to the limelight. A sudden jump into cross-border restrictions led to many supply-side disruptions and logistical constraints, which then ended up affecting internal processes and further exacerbated the effect of demand volatility.

Core facets of supply, demand and logistical constraints



Core sectoral pain points coming under tight grips



Source: IEEE Engineering Management Review

However, COVID-19 has not been a one-off event. Supply chains have been disrupted in a lot of occasions prior to pandemic as well, such as during endemics like Ebola, Flu, or the Subprime Crisis of 2008. However, the relative magnitude of these disruptions was not significant enough to identify how critically a change was needed in SCM mechanisms.

For example, after the recession, people faced a major liquidity crunch, the effect of which spilled over on to the supply chain. Businesses ran out of inventory and faced working capital shortage with a lot of bad debt on the books. Their production levels fell, which in-turn eroded margins like ROA, ROE etc.

Sailing through streamlined supply

The big picture

Pre-COVID, companies were in a value-chain-bubble. While huge emphasis was placed upon locational advantages to design flexible and globally mobile chains – which in any sense is critical and optimal – a significant focus was also needed to make sure these chains were shock-resistant. A balance had to be made between cost-reduction and proximity-convenience. Further, while the adoption of models like “just-in-time” (JIT) brought much-needed efficiency and reduced obsolete write-offs in low-inventory turnover markets, it was also necessary to keep a buffer base of goods in the event of “Plan B.” At the same time, managing processes from procurement to production to final distribution had to be strategically dispersed yet locally contained, in a way to avoid chain bottlenecks.

All these issues were brewing on the backburner, which fell though like a domino wheel for many industries as soon as lockdowns struck.



Case of Suez Canal

Global supply chains’ distortion got amplified because of the Suez Canal blockage in March 2021. There were shortages of commodities like oil and gas that led to substantial price hike-ups. The manufacturing sector was also affected as it grappled with a shortage of supply in consumer and capital goods. The insurance sector came under tight grips as both individuals and corporates reached out for big-ticket claims. The total loss to the insurance sector, as per Fitch Ratings, is valued at USD 31 billion.

Sailing through streamlined supply

The big picture

Global scenario

While supply chains got caught up in a tight limbo on a worldwide level, with trade restrictions and border shutdowns being evident across the world, things started to resume back into action as countries got accustomed to dealing with bouts of covid waves one-after-the-other.

Empty shelves and paused production modes got back onto their feet as industries began to pivot and re-engineer their value chains.



CHINA

Being one of the world's largest trading nations, China faced a series of challenges from disrupted supply chains, with power restrictions and surge in raw material prices. Despite having adopted resilient practices beforehand, the impact upon critical sections of the chain prolonged the impact and its magnitude. In sectors like home appliances, for example, businesses had to turn down orders due to unprecedented pressure from not being able to absorb the cost of raw materials. Meanwhile, port congestion further exacerbated lead times. Many new strategies have been adopted in face of this, including the country's recent move to increase coal output and imports to ease power shortages.

While the relative impact on EU industries was short-lived due to reliance in lowering chain-dependency in time, the market saw a sudden shock when the biggest economic slump of Q2, 2020, was followed by a surge in GDP growth. Factors like stimulus packages, unspent savings and pent-up demand led to a sharp increase in consumption, which was underestimated by businesses. Input shortage, coupled with a grounded aviation sector and inadequate supply of global container ships led to price hikes and mismatched supply. Nevertheless, businesses continue to pivot toward resiliency with the EU applying a policy mix that aims to increase domestic capacity, diversify suppliers, and support the multilateral rules-based trade environment. A strong focus is placed toward reshoring or nearshoring.



EUROPEAN UNION

Sailing through streamlined supply

The big picture



INDIA

Multiple industries have grappled with demand-supply mismatch, with automotive, retail, electronics, chemical, etc., experiencing massive supply side shocks. Shortage of material and labor, bottlenecks in last mile connectivity, perception of scarcity and conducive panic buying were few of the many factors that further exacerbated the magnitude of disruption. A series of waves and strict lockdowns, coupled with fragmented coordination and data support led to inadequate resource allocation and empty shelves. However, over time, companies have begun to pivot their models by consolidating certain critical parts of the chain while a host of new players have emerged, especially in e-logistics, aiming to create a more streamlined and shock-absorbent flow of resources.

The evolution of the supply chain crisis has been complex, with various issues emerging across fronts. Businesses were affected due to factors like shortage of materials and workers, transport disruptions and price rises. With major shipping ports and manufacturing facilities in Asia being reduced/closed due to the delta variant, businesses were left with longer delivery times, especially in manufacturing and construction. Meanwhile shortage in staff, especially in the logistics sector, further exacerbated the transit of goods.

Specifically, the UK faced shortages in CO2, petrol and fuel, and semi-conductors, owing to both Brexit and the pandemic. A stream of government initiatives and business re-engineering has taken way over the last one year, with the intent to get all necessary input and finished goods across the chain, preventing circuit freeze downs.



UNITED KINGDOM



UNITED STATES

When outbreak first hit, businesses were stuck with billions of dollars in unsold goods, causing inventory-to-sales ratios to surge briefly before they liquidated these inventories. However, as the economy recovered and demand increased, businesses found it difficult to bring inventories fully back to pre-pandemic levels. Further, input shortages delayed activity-resumption in many sectors such as manufacturing, construction, retail trade, wholesale, accommodation and food services. Supply-chain disruptions also had a material impact on consumer prices, especially in the motor vehicle sector. How did businesses react in this scenario? Many resorted to working facilities at 100% capacity, streamlined offerings, reduced machine down-time and invested in distribution systems to get the most essential items across in a timely manner as possible.



The Indian supply side story

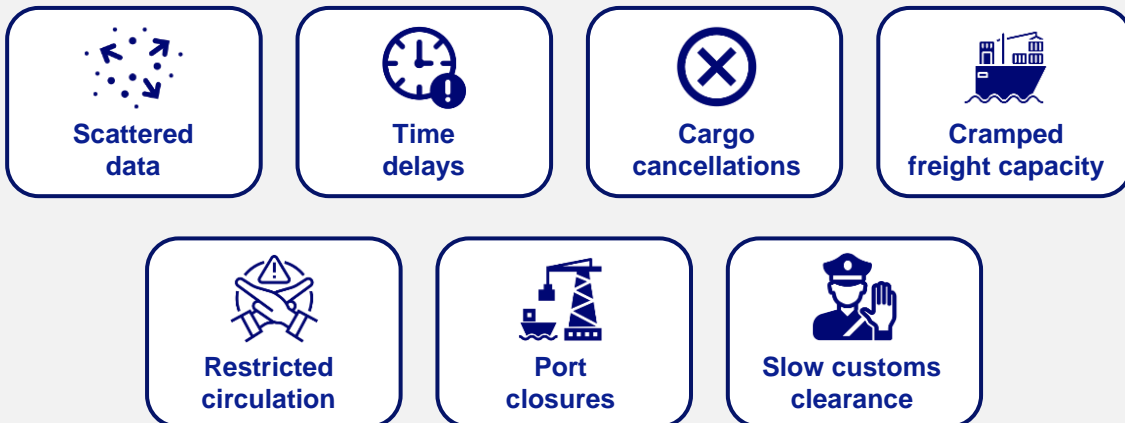
The Indian supply side story

In a large, demographically diverse and geographically sparse market like India that hosts a multitude of industries, the existence of extensive value chains with complex network webs is inevitable. Prior to the outbreak, businesses had been focusing on interconnected and lean supply chains to bridge lagging gaps, capitalize upon cross-country comparative advantages and promote greater efficiency in operations. However, all this came under tight grips with the onset of the first lockdown. While restrictions on commodity flows and global port transfers came early in the pandemic, the magnitude of impact upon Indian industries hit harder when local lockdowns eased, and operational processes resumed.

Firms were left with un-nerving demand but stunted supply, as input shortages and “stuck processes” spilled like a ripple across sectors.

Impact on freight movement

Academic studies in the aftermath reveal that a significant part of the Indian supply shock was concentrated upon disruptions in transportation and logistics services, which include factors such as:



Sailing through streamlined supply

The Indian supply side story



Muted transportation caused significant hiccups in the supply chain by hampering good flows and product mobility, which thereby led to operational delays, surge in freight costs, sales loss, late deliveries and service markdowns.

Statistically, travel restrictions led to a substantial contraction on both national and international freight movement in the early months of the lockdown, taking a toll on multimodal transport. Nevertheless, movement here has largely rebounded by the end of 2021, signaling the worst of transport woes are now over.

Ticking transport

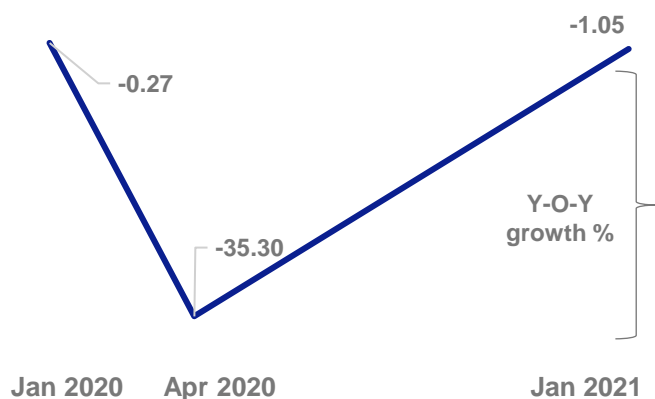


- Cumulative railway freight movement contracted by 1.05% year-on-year (y-o-y) in January 2021, compared to a contraction of 35% in April 2020.

- The pace of contraction has slowed down with freight volume being within striking distance of pre-COVID-19 levels.

- Meanwhile, in December 2021, freight loading of Central Railways was 7.21 million tonnes as against 5.87 million tonnes in December 2020, registering a whopping increase of 22.8%.

Cumulative railway freight movement (y-o-y growth %)



Source: Government of India & Press Articles

Sailing through streamlined supply

The Indian supply side story



- The air cargo industry was significantly impacted from covid in 2020-21 as air freight traffic during the period declined by 25.7% over 2019-20.
- However, things are steadily recovering with overall international freight traffic during April-September 2021-22 increasing 58% over April-September 2020-21.
- Similarly, domestic freight traffic during April-September 2021-22 has increased 72.1% over April-September 2020-21.



- Both overseas and domestic port cargo traffic flows showcased a negative trend during April to December 2019–2020 to 2020–2021.
- Overall cargo traffic registered a negative growth of 9%, while coastal cargo traffic declined sharply by 15.1%, in comparison to overseas cargo traffic. However, rebounds are steadily happening.



- In terms of road, freight availability declined sharply from the lockdown, leading to a decline in aggregate revenues by 18–20% in 2020–21, on a year-on-year basis. Over 50% of India's trucking fleet had been wrecked due to labor unavailability and disruptions in road transportation.
- However, movement here saw a significant recovery in the later months of 2021, as consumption improved across sectors.
- Transport of goods such as cement, mining products, steel and agricultural products saw the sharpest price increase from September to October 2021. The monsoon withdrew and consumption & infrastructure activity picked up.

Sailing through streamlined supply

The Indian supply side story

Fragmented logistics

From a logistical standpoint, logistics in India has till date been a largely fragmented industry, consisting of over 1,000 active players that include large scale domestic players, leading entities of global players, the express arm of the government postal service and emerging start-ups that specialize in e-commerce deliveries. Research estimates the Indian logistics market to be pegged at USD 215 billion, growing at a CAGR of 10.5%, with only 10-15% of the market to be owned by organized players.

Meanwhile, national logistics and supply chain costs are currently estimated to amount to a staggering USD 400 billion, up to 14% of the GDP in comparison to a global average of 8%, as per a report by

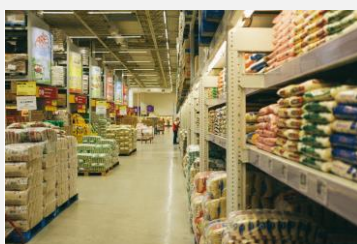
Arthur D. Little India in collaboration with the CII.

A greater uptake in streamlining logistics will be pivotal to boost efficiency of the entire supply chain network, which includes creating a structured multimodal ecosystem, utilizing digital platforms, building requisite warehousing and packaging hubs and ensuring last mile connectivity. A considerable progress here was made in response to the pandemic alone when a host of sectors kickstarted into contactless operations and delivery in a time-bound manner.

This has in-turn catapulted the speed of acceleration, catalyzing growth across several parameters.



The **road logistics market** in India is expected to touch **INR 25,152 billion by 2025**, growing at a CAGR of 8% during 2020-2025.



The **Indian warehouse market**, which touched INR 676 billion, is **projected to grow at a CAGR of 9.1%** during 2021-2026.



The **cold chain market** reached ~INR 1,285 billion in 2020 and is **expected to grow at a CAGR of 14.3%** from 2022 to 2027.

Sailing through streamlined supply

The Indian supply side story

Supply disruptions in India have been like a double-edged sword which, albeit the catastrophic breakthroughs, have given a fresh impetus toward contemporary practices. Even the smallest and most unorganized players were “pushed” to streamline their networks in a bid for market survival.

The new Kirana identity

While the influx of e-stores and hypermarkets had gained much prominence pre-COVID, when the first lockdown struck, local next-door kirana shops became a critical resort for many in terms of necessary supplies.

This new facet of demand encouraged these smaller players to pivot into more structured and flexi-processes, as they vowed to keep a stable supply of goods.

Kirana owners started adopting smart-stock management, building healthy supplier relations across the chain, as well as adopting digital modes of payment.

One of the most important developments here has been the rise of UPI payments, which has enabled kirana shops to get a strong footing among customers in the new age of contactless shopping. A move into organized supply here may never have been possible without a massive shock.



Agri-quick on its feet



Agriculture and allied industries were one of the least-stricken industries by pandemic restrictions. They are estimated to grow 3.9% in 2021-22 on top of 3.6% and 4.3% respectively in the previous two years.

While logistical constraints and limited movement had an initial frenzy setting in for agri-produce, the industry was quick to rebound on its feet, owing to steady production levels, favorable weather conditions, streamlined government policies and steady procurement. One of the critical pillars here was a faster and steadier recovery of supply-related gaps, which led a faster recovery of the overall sector.

Sailing through streamlined supply

The Indian supply side story

Supply chain management – from macro to micro and back up again

Supply chain management is not just driven upon individual industrial value chains; its aggregate effect also spills onto national production and supply, driving trade dynamics and maintenance of healthy current accounts. Being able to strategically balance the import-export profile and steer into a healthy domestic profile is much sought after and highly possible for a diverse and large country like India. Keeping strong buffer nets and pioneering reliant assembly chains can keep severe hiccups at bay.





Tackling supply from the macro backdrop

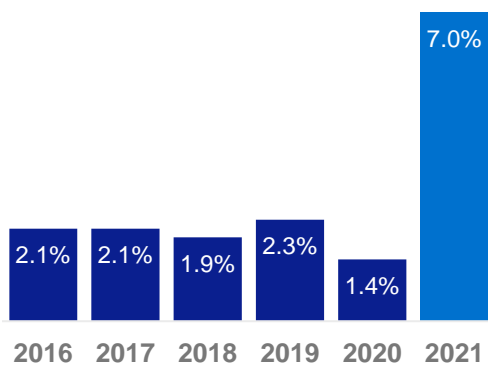
Tackling supply from the macro backdrop

Inflation's inflammatory disruptions

Over the last two years, inflation has cornered a lot of attention in India as well as in other major countries. This includes bouts of price hikes in countries like the US, Germany, China, and Japan. As an example, the producer pricing index in Japan is at a 40-year high, according to Bloomberg. Since May 2020, retail inflation in the US has been steadily increasing. The annual rate of inflation increased to 7.9% in February 2022, the highest since January 1982, standing in line with market predictions. For the US, not only is this the highest year-over-year growth in three decades but a drastic jump from the Federal Reserve's aim for 2% inflation. However, the rise in consumer price inflation is not limited to the US. In November 2021, the OECD's CPI inflation rate stood at ~6%.

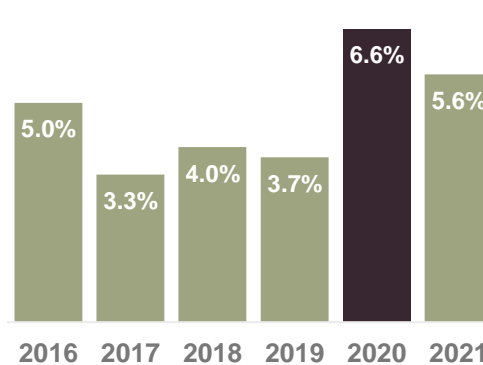
While most other economies were caught off guard by a surge in prices during the pandemic, India was one of the few large nations where high inflation preceded the outbreak. Since late 2019, retail inflation has repeatedly been beyond the Reserve Bank of India's (RBI) comfort zone — between 2% and 6% — for a sustained length of time.

Inflation in the US (%)



Source: US Inflation Calculator

Inflation in India (%)



Source: Macrotrends

Given this, inflationary pressures in India can accentuate from global price hikes, spilling onto expensive import costs, as well as tighter interest rates. As inflation pushes global central banks to adopt stricter monetary policies, there will be key consequences for the Indian economy.

It will be more expensive for Indian companies to raise funds outside of India, which can eventually lead to supply side disruptions in global value chains.

- The RBI will have to coordinate its domestic monetary policy by increasing interest rates.
- Net exports will become volatile amid fluctuating costs and uncertainty.

Sailing through streamlined supply

Tackling supply from the macro backdrop

India's net exports have become negative in the first half of 2021-22, compared to a surplus in the same period in 2020-21, with the current account showing a slight deficit of 0.2% of GDP. On the contrary, India's exports (both commodities and services) have been extraordinarily high in 2021-22. Despite a spike in trade expenses due to global supply restrictions such as fewer operable transport boats, exogenous events such as the blockade of the Suez Canal and emergence of COVID-19 in a port city of China, merchandise exports exceeded USD 30 billion for eight consecutive months in 2021-22. Professional and management consulting services, audio visual and allied services, freight transport services, telecommunications, computer, and information services have all increased significantly within net service exports.

Building a strong national channel and buffer of supply-side operations, on the macro level, is thereby becoming critical. While it is just to design global chains and network modes across countries, being able to alter the chain "closer to home" in the event of global volatility is also necessary.

Taking a supply side reform approach

A host of programs and initiatives have been taken so far to steer India's economic recovery in the aftermath of lockdowns and restrictions. Amid this, are a series of initiatives specifically geared toward restoring supply shocks, for both the short and long term, with the objective to build shock-absorbent chains. While some of these measures are more direct toward mitigating procurement, operational and logistical lags, some measures are rather holistic toward the entire economy, which will eventually create positive spillovers on supply chains too.

These supply-side initiatives include deregulation of a variety of industries, process simplification, and the elimination of legacy issues such as "retrospective tax," privatization, and production-linked incentives, among others. Even the government's substantial rise in capital spending, which provides infrastructural capacity for future growth, could well be understood as a demand and supply response.



Sailing through streamlined supply

Tackling supply from the macro backdrop

Key governmental reforms

Production linked incentive (PLI)

Production linked incentive (PLI) schemes were introduced in India in March-April 2020, targeting three industries initially – large scale electronics manufacturing, pharmaceuticals (critical key starting materials/active pharmaceutical ingredients), and medical device manufacturing. This concept has since expanded to multiple sectors, with the intent to boost India's domestic manufacturing capabilities and encourage export-oriented production. PLI schemes aim to develop capacities in the local supply chain, introduce new downstream operations, and incentivize investments into high-tech production. At present, PLI covers 14 significant sectors of the economy involving a total outlay of INR 3 trillion. The scheme is estimated to attract a capex of approximately INR 4 trillion for the next five years and has the potential to generate employment for over 3 million in India, as per ratings agency ICRA.

Revised definition of Micro, small and medium enterprises (MSMEs)

In a large and vibrant market like India, the role of MSMEs is critical. They have the power to become integral pillars in large-scale value chains. The government's latest revision to the definition of MSMEs during the COVID-19 outbreak had three key elements: raising the investment limit, adding an additional criterion for turnover and removing the distinction between the manufacturing and services sector. This move has provided a more robust playing field for smaller-scale business to grow and develop, helping them link to larger parts of the industry. Meanwhile, undertaking cluster-wide infrastructural interventions through schemes like SFURTI and MSE-CDP are creating new pathways for MSMEs to boost economies of scale and widen their export outreach.

PM Gatishakti National Master plan

Union Budget 2022 has placed a substantial focus on boosting logistical connectivity and seamlessness. Within this, the PM Gatishakti Master plan specifically encompasses the seven engines for economic transformation, seamless multimodal connectivity, and logistical efficiency. Focus will be on planning, financing (including through innovative ways), use of technology, and speedier implementation. Apart from building innovative infrastructural frameworks in a scaled manner for the movement of people and goods, the movement of information will also be handled in a streamlined manner. All mode operator's data will be exchanged using the Unified Logistics Interface Platform (ULIP), which is designed for application programming interfaces (API). This will allow for the efficient movement of goods across several modes, lowering logistical costs and time, supporting just-in-time inventory management, and removing time-consuming paperwork across the supply chain. Most significantly, all stakeholders in the supply chain would have access to real-time data, which will increase international competitiveness.

Sailing through streamlined supply

Tackling supply from the macro backdrop

Key governmental reforms

New law on Special Economic Zones (SEZs)

The administration has proposed in the Budget to repeal the existing law governing special economic zones (SEZs) and replace it with a new law that would allow states to collaborate on the "Development of Enterprise and Service Hubs." This will apply to all big current and new industrial ones across supply chain enclaves in order to maximize the use of available infrastructure and improve export competitiveness.

Ease of doing business 2.0

Ease of Doing Business (EODB 2.0) and Ease of Living will be introduced for the Amrit Kaal. The government plans to roll out the concept of 'trust-based governance' in an effort to improve the productive efficiency of capital and human resources. This new phase will be guided by an active participation from states, the digitization of manual processes and interventions, the integration of central and state-level systems via IT bridges, a single point of access for all citizen-centric services, and the standardization and elimination of overlapping compliance. Such an ecosystem can become a key breeding ground for promoting domestic value-added manufacturing and services in-house, helping eradicate large supply-chain and networking gaps.

Atmanirbhar Bharat – the overarching umbrella

Almost all current and futuristic programs are entwined within the overall goal of the government toward "Atmanirbhar Bharat" or a self-reliant India. The term AtmaNirbhar refers to making India a larger and more involved part of the global economy, promoting policies that are efficient, competitive, and robust, as well as policies that promote equity and are self-sustaining and self-generating in nature. All programs under the Atmanirbhar Bharat Abhiyan are geared toward making India a trustworthy global supply chain hub.

Source: Government of India & Press Articles

Sailing through streamlined supply

Tackling supply from the macro backdrop

A focus on local does not remove global

While a host of new policies and programs are in play to encourage domestic production and manufacturing, it does not dilute the notion nor importance of having globally dispersed value chains. Building upon locational connections and comparative advantages, as well as specializing in the multilateral and multimodal flow of goods and services, will remain key in the coming time. The essence here is to not dilute strategic collaboration with operational dependency; pairing large global chains with multi-network nodes (including local process centers) will ensure the right blend of competitiveness with lower volatility and higher sustainability.





Bridging supply from the micro angle – cases

Bridging supply from the micro angle – cases

Accentuating automotive



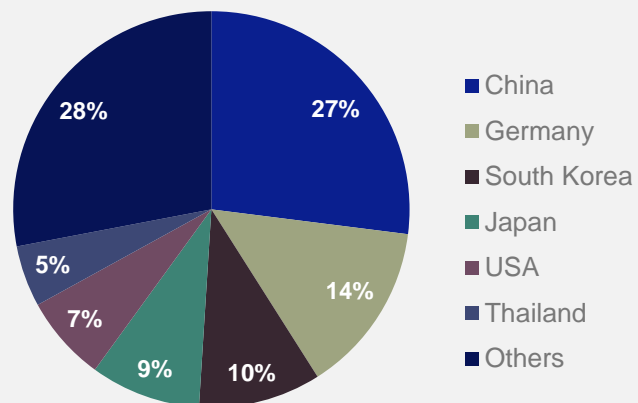
The automotive industry contributes 7.1% to the total GDP of India. According to IBEF, the estimated market size of the automotive industry (including component manufacturing) is expected to reach INR 16.16-18.18 trillion by 2026.

COVID-19 exposed weaknesses in automotive's globalized yet non-linear supply chain. Vast import dependency, which stems from cost efficiency in offshore

manufacturing, resulted in disrupted supply during worldwide restrictions. India's largest import dependency lies in China, accounting for 27% of auto component imports, followed by those from Germany and South Korea, respectively. Imports for multi-product categories here meant that OEM operations came under grips as procurement slippage exacerbated in the lockdown.

Share of India's auto-component import dependency (%)

China accounts for 27% of India's auto component imports valued at USD 4.8 billion.



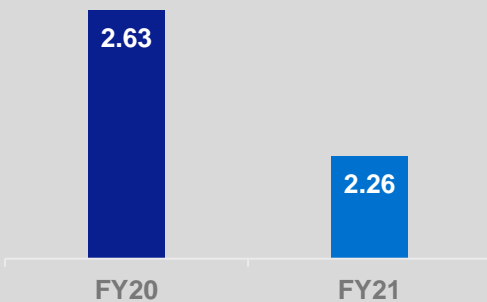
Sailing through streamlined supply

Bridging supply from the micro angle – cases

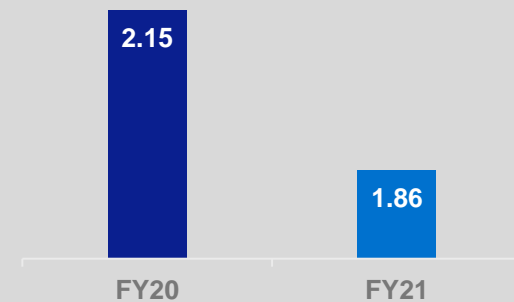
Accentuating automotive

The automotive industry comprises of thousands of suppliers involved at every step of the value chain. This creates volatility in production volumes that can exponentially hike by a single default in supply at any level.

Automobile production (in units cr.)

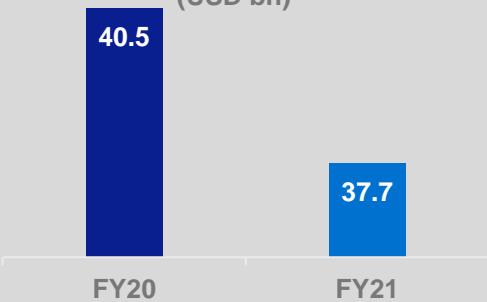


Automobile domestic sales (in units cr.)

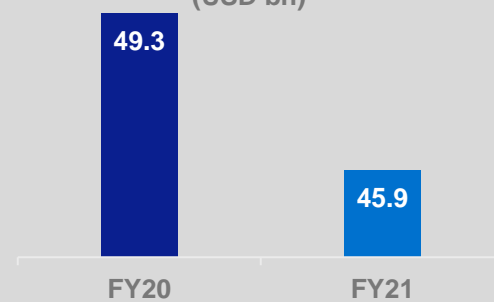


Source: SIAM

Auto component supply to OEMs (USD bn)



Auto component industry turnover (USD bn)



Source: ACMA

In March 2020, the industry incurred an estimated cost of INR 6,080 crore because of disruptions in the supply chain. According to SIAM, the production of all vehicles fell ~14% in FY21 as compared to FY20, and domestic sales fell -13.5%. Auto component supply to OEMs witnessed a degrowth in market size from USD 40.5 billion in FY20 to USD 37.7 billion in FY21. Overall industry turnover plummeted -7%.

Sailing through streamlined supply

Bridging supply from the micro angle – cases

Accentuating automotive

How did some of these companies react?

	Maruti Suzuki India Ltd.	Mahindra & Mahindra Ltd.	Tata Motors Ltd.
What impact did supply chain disruptions have on players?	Unavailability of manpower, shortage of components, US polar vortex etc., shifted bargaining power to component suppliers.	Shortage of industrial oxygen & supply constraints of micro-processors, as well as surged commodity prices.	Increased commodity prices, dependency on single source procurements, force majeure of supplier contracts, local decree to prohibit to operate.
How did they pivot to not only sustain but extend operations?	Locating alternative suppliers, focusing on localization, undertaking temporary increase in component inventory, hiring buffer manpower, shifting production to alternative plants.	Undertaking cost-reduction with value engineering activities, getting involved in commodity risk management to limit inflationary impacts, as well as enhancing SCM by automation.	Engaging in proactively with suppliers to mitigate potential disruptions, building safety stocks, finding alternate localized sources, undertaking product reconfiguration.

Source: Company Annual Reports, ResearchGate & Press Articles



Sailing through streamlined supply

Bridging supply from the micro angle – cases

Accentuating automotive

Understanding chain mechanics

Automotive supply chains quintessentially begin from “raw material suppliers” that provide intermediate goods and auto components. These suppliers are small vulnerable parties that bear proportionately larger risk due to both heavy grunt work in unsafe environments and even lesser margins on products sold. They are consequently unable to adjust to demand changes and price fluctuations. Since their value addition is crucial to every touchpoint in the chain, a minor disturbance borne by these suppliers can create a bullwhip effect to the entire supply chain. Rubber, steel, aluminum and silicon are some of the many crucial materials required in the manufacturing of components that are necessary for vehicle production. When these materials go scarce, the entire industry goes into a whirlwind.



Natural rubber

Procurement of rubber becomes a challenge since the market comprises of small-scale producers that are prone to insolvency. During the pandemic they were unable to meet the demand and price fluctuations and hence there was an unavailability of rubber. In March 2020, tire manufacturers faced acute shortage of natural rubber because the flow of rubber into the market was not steady.



Aluminum

In October 2021, a power crisis in China led to a scarcity of magnesium that is a composite of aluminum alloy used in crucial auto components, accounting for 2-3% of total production. Global aluminum prices increased rapidly, creating further challenges for procurement.



Steel

OEMs such as Maruti Suzuki, Hyundai, M&M, Tata Motors and Kia Motors source their steel from Posco's (South Korean steelmaker) steel plant situated in Pune, Maharashtra. In March 2021, due to internal conflicts and protests, Posco's production was seriously affected and caused supply chain disruptions. According to SIAM, production activities for all large companies came to a standstill.



Silicon

Silicon based semi-conductor chips used to achieve improved emissions and engine efficiency came under massive shortage. Every vehicle producer shared a brunt of its scarcity. Overdependency on production from Taiwan for semi-conductors turned out to be an adverse approach that costed the Indian auto industry an estimated loss of over INR 20,000 crore.

Sailing through streamlined supply

Bridging supply from the micro angle – cases

Accentuating automotive

How are things shaping up?

- **Structural supply chain re-engineering** will go a long way to make disruptions infrequent and predictable. This can be methodically achieved by analyzing the vulnerabilities in the global supply chain of the industry using 5 given dimensions:
 - planning and supplier network
 - transportation and logistics
 - financial resiliency
 - product complexity
 - organizational maturity
- The **larger players should remain proactive in absorbing disruptions** through undertaking investment and assisting the vulnerable parts of the chain.
- Being a product-driven industry, firms should plan for **supplier diversification and capacity redundancy** to reduce the risk of disruptions during unprecedented calamities. Backup sources of procuring spare parts and raw materials locally, as well as across geographies, must be maintained. Capacity redundancy, which means flexible sources, are beneficial to strengthen production according to new requirements.
- **Key lower-tier suppliers are impartially more vulnerable to disruptions;** therefore, they must be addressed prima facie to reduce the time taken to implement mitigation measures. Visibility and responsiveness should be enhanced to make sure chains are adaptive and resilient.
- **Proactive contracts:** A lot of companies witnessed force majeure, meaning unfulfillment of contracts even when agreements were in place. Hidden inefficiencies and unrealized advantages became very much the norm in such a crisis. Therefore, “proactive contract renegotiation” is a systematic and efficient procedure that will protect the firms from getting “victimized.” Resource procurement teams need to strengthen their resources and integrate more reliable suppliers, negotiating for enhanced flexibility. This will minimize risk and maximize both operational and financial performance.
- **Information technology** can facilitate in increasing visibility to cope with complexities and aid decision making by proactively delivering deeper insights. Enormous data from suppliers, both organized and unorganized, can be modelled to optimize decisions and provide agility to supply chains. Precise forecasting of supply chain risks through data-driven policies can allow firms to develop more resilient practices.

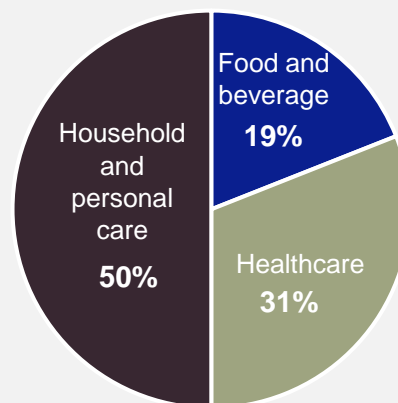
Bridging supply from the micro angle – cases

Fast-tracking FMCG



FMCG is the fourth-largest sector in the Indian economy, standing at USD 110 billion in 2020, and is expected to touch USD 220 billion by 2025. Growing awareness, changing lifestyles and internet presence are driving the growth of this industry, with India expected to become the fifth largest FMCG market by 2025.

FMCG breakdown



Source: IBEF

FMCG also faced the brunt of the pandemic when large-scale lockdowns and restrictions halted supplies across the chain, especially with many such goods being essential items that saw an influx in demand.

What was the impact?

- Most production units and warehouses had to deal with reduced labor availability, which became as low as 30-40% of typical levels in some situations. Many distribution workers were also quick to migrate back to their villages in wake of being “locked-in” within cities without work and high expenses. Hence, for manufacturers, even if production could be increased to meet rising demand, getting those products on actual shelves for the end consumer became challenging.
- Demand became highly erratic, especially for essential commodities such as food, personal care and hygiene items. Panic buying, as consumers began to hoard onto products in anticipation of heightened lockdowns, shortage of manpower, restricted movement, social distancing and static inventory management all added to supply side woes.

Sailing through streamlined supply

Bridging supply from the micro angle – cases

Fast-tracking FMCG

How did businesses pivot?

- Players were steady to overcome these hurdles by ramping up production, sustaining operations in certain places by getting workers closer to factories, investing in worker safety and well-being to facilitate retention, as well as ensuring last mile connectivity with better e-commerce integration.
- Over the last two years businesses have pivoted their business models to better streamline their operations, especially when it comes to managing supply chains. Companies have begun building requisite inventory to avoid abrupt commodity disruptions, investing further in workplace safety & hygiene, as well as integrating largely in digitally accelerated platforms.
- When it came to witnessing the third wave during Omicron, FMCG players were much more prepared to handle panic buying and volatile demand, even in the events of unplanned lockdowns. Learning from the previous outbreaks, manufacturers had maintained sound communication across the chain, including with their distributors and retailers and had asked them to hold an adequate stock of inventory and prevent “empty shelves.” Meanwhile, factories were told to keep an extra stock of raw material “just in case” of abrupt supply chain and logistical constraints. Production should not stop, nor should supply, became the motto. At the same time, an adequate number of supplies were ensured at each channel member level.
- Manufacturers also equipped their units with Oxygen Concentrators, ramping up emergency preparedness and safeguarding the health of employees.
- During production, a higher emphasis was given on staple items that generally saw a larger demand during lockdowns. This included ready-to-eat and ready-to-cook packaged foods, processed foods like biscuits/cakes, packaged milk and milk products, as well as hygiene essentials like repellents, floor cleaners, disinfectants etc. Larger quantity packets were assembled to facilitate serving bulk orders.
- Logistically, e-commerce players received much traction on boosting last mile connectivity for large retailers during lockdowns and ensuring timely delivery. However, they were not the only ones to pivot. Most brick-and-mortar retail chains and local modern format stores/supermarkets strengthened their e-presence, given the reluctance of people to physically visit stores. This ensured a smoother transition among bouts of covid-waves and resulted in much lesser panic during the month-long peak of Omicron.

Sailing through streamlined supply

Bridging supply from the micro angle – cases

Fast-tracking FMCG

Zoning into F&B

Within FMCG, the food and beverage (F&B) industry came under tight grips, owing to a rapid hike in home deliveries (of both daily ration and takeaways) as dining services, stores and malls shut down.

Players like Dabur, Emami, ITC, Marico, Parle, among many others, rushed to operate essential operations amid a shortage of workers, as demand for comfort food – i.e., biscuits, instant noodles, staple bakery etc. – shot up, both for internal consumption as well as for distribution among relief camps.

How did some of these companies react?

	Dabur Ltd.	Parle Products Pvt. Ltd.
What impact did supply chain disruptions have on players?	Faced material-related issues, lack of availability (or distribution) of its essential products. Inflationary pressures and volatile production saw great frenzy, especially in the early part of covid.	Grappled to get products on shelves due to lack of manpower (as workers shifted to their villages), as well as faced inflationary pressure on inputs.
How did they pivot to not only sustain but extend operations?	Dabur extended the Ayurvedic segment to tap onto the growing demand for health-related products and this setoff the effect of muted demand in other discretionary items. It has further ramped up product supplies and increased pipeline inventory, with a view to further streamline operations.	Parle is making use of the hybrid cloud, security, and AI capabilities, as well as focusing on technology-centric solutions. This will assist Parle in bringing its products to market at the appropriate time and in the right place, such as its further dissemination of Parle-G biscuits.

Source: Company Annual Reports & Press Articles

Sailing through streamlined supply

Bridging supply from the micro angle – cases

Fast-tracking FMCG

How are things shaping up?

COVID-19 has been a game changer for FMCG, given that demand here saw bouts of volatility across the pandemic's cyclic waves. While businesses have been quick to adopt and pivot their strategies to meet changing needs, a further streamlining of operation can be expected as players across the FMCG spectrum – both upstream and downstream – continue to focus on the following areas:

- **SMART-tech adoption**

Integrating technologies like cloud computing to connect supply chain dots, bring agility and facilitate a faster flow of information. It also means integrating AI for sales forecasting and predictive analytics (especially on near time demand), which will enable players to reduce supply chain errors, manage long-term inventory flows, adopt apt pricing strategies and product placement, as well as boost consumer engagement. Having a better idea on upcoming demand trends can also help manufacturers expand their product portfolio at the right time, supplying the correct products at the same time – i.e., the trend for immunity enhancing and hygiene products that showed a drastic uptick in the early part of the pandemic.

- **Global and local alliances**

Partnering with both upstream and downstream stakeholders, in order to ensure sound coordination amid volatility. Entering into fixed and contingent contracts with both global and local players can help companies overcome risks linked to market dynamism and make chains more shock absorbent. Taking special care of the more vulnerable players in the chain can help bring even greater stability into the ecosystem. Hedging and diversification become especially important here.

- **On-ground, flexi-warehousing systems**

Given the criticality of meeting demand across all parts of the country (i.e., Tier 1, 2 and 3 cities, across the rural and urban divide) having factories and warehouses closer to consumption hubs can help overcome huge logistical overhauls and ensure delivery downstream.





Streamlining a shock-absorbent network

Streamlining a shock-absorbent network

Supply chain has inevitably been one of the hardest hit areas in the pandemic, with the magnitude of impact varying from industry-to-industry. Be it India or the rest of the world, this was not just a one-time event that blew value chains down. Rather, covid-induced problems came as a reality check that brought upon many long-standing gaps into the limelight.

Businesses have taken their own route to pivot post the chaos, trying to get operations normalized as quickly as possible, while the government has come up with a stream of initiatives and programs to ensure a more robust supply chain management framework in the coming time. The aim is to spur up the scale of domestic operations and make India a supply nerve center in all kinds of global chains.

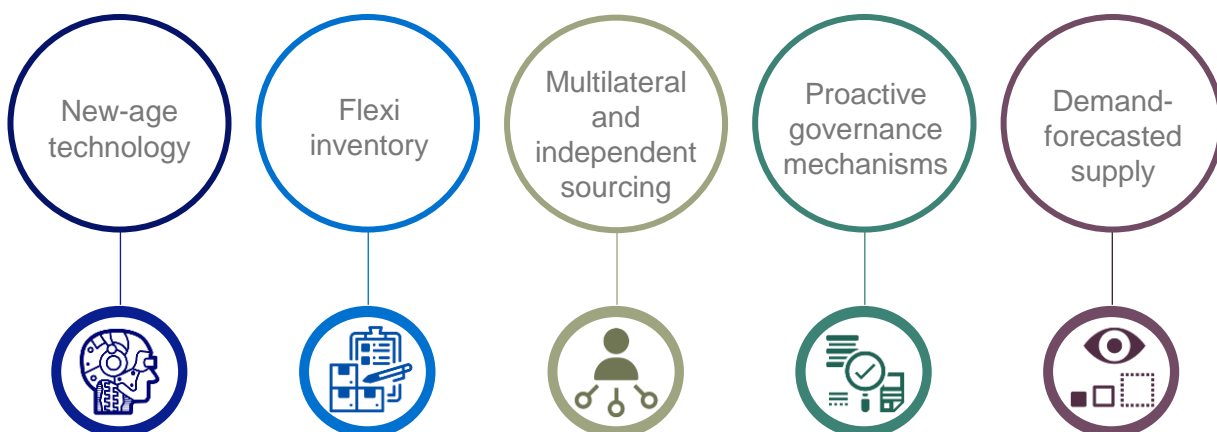
While a lot has been done till now, a lot remains to be tackled and implemented as well ahead, as industries do-away with pandemic after-shocks and delve into a new era of growth in 2022.

Mazars recommends the following key actionable areas that can facilitate businesses – big or small – to craft a supply chain strategy that is not only shock-absorbent but the right fit for their own unique processes.

SCM within the business – 5-layer approach

Managing the supply chain network within the organization – from sourcing to procurement to manufacturing to distribution – requires agile processes that are tightly-knit yet decentralized and experientially conventional yet experimentally up to date within contemporary platforms. This must be done in the backdrop of an accepting organizational culture and business model, which is crafted to account for uncertainty and change.

An effective SCM in-house requires sound strategic decision-making along the following 5 metrics:



Source: Mazars' Analysis

Sailing through streamlined supply

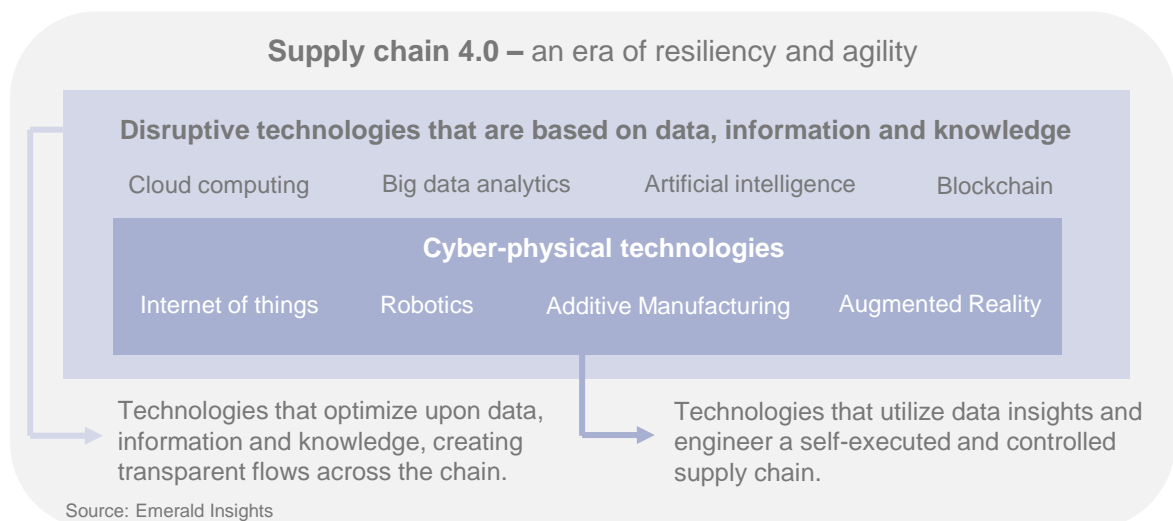
Streamlining a shock-absorbent network



New-age technology

By adopting a data-driven approach, businesses can standardize the SCM process with greater transparency and visibility, allowing for a more efficient management system.

Such an approach can be harnessed by the power of technology, especially with accelerators like AI, automated sorters, IoT, blockchain and cloud computing. These can help ramp up process speeds, ensure information transparency and flexibility and enhance cost-efficiency from one part for the chain to another.



While India has acknowledged the critical role of technological platforms, only around 25% of enterprises have deployed AI solutions thus far. Factors like limited understanding, un-skilled resources and/or lack of access for smaller players have acted as barriers to large-scale adoption. Greater investment and participation are needed from both the public and private sectors to encourage greater awareness and action.

Initiatives like introducing AI into the curriculum (as per NEP 2020) are key foundational blocks that will help instill tech-centric education from the start. Meanwhile, action plans proposed in Budget 2022 – especially those around the Gatishakti Master Plan and Unified Logistics Interface Platform – are pertinent to disseminate platforms for large-scale use among industry players.

It is also recommended for small-scale enterprises, specifically MSMEs, to migrate into cloud-based platforms where they can have a more centralized and transparent data repository and record-keeping system. Information asymmetry and fragmentation is one of the leading causes of operational delays and inadequate monitoring for small enterprises, which often still rely on hand-written notes and vendor slips. Providing them with awareness, training and proper help in migrating to cost-efficient data management systems should be of key priority.

Sailing through streamlined supply

Streamlining a shock-absorbent network



Flexi Inventory

As organizations battle with volatile external shocks, they should aim for designing a more flexible inventory management within their value chains. This mitigates the risk of an adverse impact on the supply chain from catastrophic events and makes businesses more resilient to changes in a dynamic environment. Just like a “Just in Time” (JIT) inventory model is needed to cut back on losses from obsolete goods, a “Just in Case” (JIC) inventory method is needed to prevent losses from lack of supply. JIC should be inculcated within business models, in which companies buy extra raw material to maintain “safety stocks” toward contingent disruptions. If not wanting to buy out extra material due to perishability or expensive warehousing (such as cold chains), companies can also consider tying up with “Plan B” vendors closer to their production lines, which can offer buffer support in times when procurement from dispersed suppliers comes to a halt.

Over the past two years, one of the most popular strategies in India has emerged out to be “on-demand warehousing”. This is a convenient and cost-effective method to outsource order fulfillment to third party fulfillment companies. It offers flexibility to D2C sellers who witnesses seasonal increases in demand and must seek out affordable spaces within the nick of time. Stretching this area out into the core business model for contingency operations can prove to be very helpful in times of unforeseen events. Businesses can establish contingent contracts with fulfillment suppliers, which will materialize upon meeting certain conditions.

Sailing through streamlined supply

Streamlining a shock-absorbent network



Multilateral and independent sourcing

Similar to warehousing and inventory, a shift in the sourcing strategy is also needed. Instead of considering only cost advantages for multi-product chains, it is also necessary to analyze geopolitical and social ramifications. This calls for designing multiple sourcing options through flexible contracts amid a multi-network node of suppliers.

During international and domestic travel restrictions with strict quarantine norms, having a 'Plan B' in close proximity became the lifeline to solve production woes. Since then, diversification in the supply chain has gotten even more limelight. Companies having sole procurement dependency in China have begun to branch out their sourcing to the Europe or Japan as well, without incurring a significant rise in costs.

Alongside diversification, supply shocks have reiterated the importance self-sufficiency across countless industries. Self-sufficiency, although always not comparatively advantageous, does make supply chains resilient to external shocks to a great extent. The drive toward "Atmanirbhar Bharat" or "vocal for local" has thereby gotten much acclaim during this period, with industries like pharmaceutical, steel and electrical equipment having already reduced their dependency upon other countries such as China, Taiwan, Japan, etc. It has become more than necessary to balance global networks amid local reach.

India aims to become the global nerve center of a multinational supply chain in the coming years, with the 2022 Union Budget laying out several programs for the same. Helping industry players grapple this new model becomes paramount, which can be highly advantageous in a vast and geographically diverse country like India. It may be possible to spur raw material production in many overlooked industries or, where a certain level of import is necessary, shifting value-added services in-house can help players gain more control over operations.

Sailing through streamlined supply

Streamlining a shock-absorbent network



Proactive governance mechanisms

Partaking in sound skill-development and governance across processes and manpower is not just a “nice-to-have” but a necessity for operational sustainability. Apart from streamlining business activities, it is important to increase the pool of trained workers in the organization who will be well-equipped to operate within these processes. A core focus on talent acquisition and retention will become key, alongside undertaking regular skill-development of employees within the company. Given India’s brewing demographic dividend that hosts a wide working class, the adoption of sound “people” techniques (training and management) cannot be overlooked. It can become one of those key assets that provide domestic firms with a comparative advantage and help them sail through tough times.

However, benefits here should not just be limited to the “talented class.” Linking blue-collar workers to necessary schemes such as employment pension plans and accommodation options is necessary to boost their productivity by giving them proper job security. Every worker, regardless of the role, has a role to play in any value chain. Curbing out attrition for a managed workforce is essential.

With flexible working norms, the governance framework must also pivot to become more pliable and proactive, leveraging upon information technology. Providing strong oversight across key parts of the value chain, alongside giving management independency, must be carefully balanced. This can be done through cutting out “wired structures” with multidisciplinary network teams, which engage in self-management toward overall objectives, from bottom to up. Aligning interests and reinforcing goals can be done through interactive collaborative systems, moving onto “adaptive governance.”

Flexibility in the supply chain has not been a new concept, with the design of flexible processes – from product development to manufacturing to sourcing to logistics and IT – becoming essential with the start of mass customization. The need can now very-well be understood to be driven by mass stability in a volatile environment.

Sailing through streamlined supply

Streamlining a shock-absorbent network



Demand-forecasted supply

Supply is not just about meeting current demand but being ready for future demand as well. Hence, the maintenance of an efficient and seamless supply chain also requires industry players to be privy about expected customer demand. Demand forecasting is an empirically feasible method to reasonably estimate the amount of material that will be necessary to meet the expectations of consumers over the next five years, such that all requisite products and offerings can be delivered within an appropriate stipulated time.

However, this method is not widely adopted in India, with over 95% of companies still not engaging in demand forecasting. There is an unavailability of tertiary level data (distributor to retailers) which makes lead times longer to estimate demand. On the other hand, the handful of Indian players that have incorporated demand forecasting have been able to create a monopolistic presence in their industries with one of the largest market shares (i.e., Asian Paints). Dissemination of this technique across various organizational scales and structures can help companies become more “future-aware” and “future-ready”, being able to control price and resource volatility to a large extent.

Demand forecasting is only one of such “smart” supply chain management methodologies. Conducting greater research and development (R&D) across various parts of the supply chain can also help companies realize the potential for innovation in their own personalized value chains, steering the requisite strategy for growth.

Sailing through streamlined supply

Streamlining a shock-absorbent network

SCM across the business ecosystem – Networked, branched and hedged

Supply chain management cannot be handled solely within a company alone. Ultimately, it requires proper support and coordination from all stakeholders – vendors, procurers, warehouses, distributors etc. – for the chain to work seamlessly despite bouts of unexpected disruptions.

Whenever such an adversely volatile event happens – be it COVID-19 restrictions, Suez Canal obstructions etc. – it creates a huge, waded ripple across any large supply chain. Certain systems in the chain get impacted more than others, which then spill onto each other exponentially. How to minimize this domino effect? Creating a supply chain ecosystem that is not linear but rather built on a network node model. That is, having each part of the chain branched out toward multiple channels and partners, in order to diversify the risk of an overall breakdown. Each node may not necessarily have to be involved at all times; dealings with some branches may only be reserved in contingent times, at a slight premium.



Sailing through streamlined supply

Streamlining a shock-absorbent network

SCM across the business ecosystem – Networked, branched and hedged

The risk of impact, or the magnitude of impact, can further be lowered by hedging volatility, especially among smaller players that operate in unorganized, fragmented markets. No matter how large or organized an industrial supply chain is there are always some parts of the operation that are governed by small-scale players that cannot afford to bear the brunt of volatility or catastrophic events in comparison to larger counterparts.

For example, taking the automotive industry, which itself is expansive and highly organized, there may be certain informal enterprises operating as raw material suppliers (i.e., rubber, metal, resin etc.) that operate and sustain by day-to-day operations. When an unexpected event like COVID-19 happens, where the magnitude of impact remains equally distributed among all players, the small ones are the first to collapse; this then eventually leads onto a greater blow on the entire chain. The small members cannot take volatility in price or order volume and fail to keep up with operations in the coming time. Fixing both these factors through derivative instruments like futures contracts for example is one of the many ways to protect small-scale vendors from collapsing and pass on the risk to larger players that have more buffer to absorb volatility. This will help prevent a larger blow to the entire industrial value chain, making these chains more shock-absorbent. At the same time, having a fixed supply of goods guaranteed can also give larger players more impetus to grow their operations.

The use of these hedging instruments is not uncommon and has become a key strategy to manage supply chain across industries. However, widening their scope and presence is even more pertinent now, as businesses look toward creating more operational certainty amid uncertain events. Even those players who do not have access to OTC markets need to design routes with stakeholders to get secured. Adjoining smaller enterprises collectively as clusters can help in this regard.

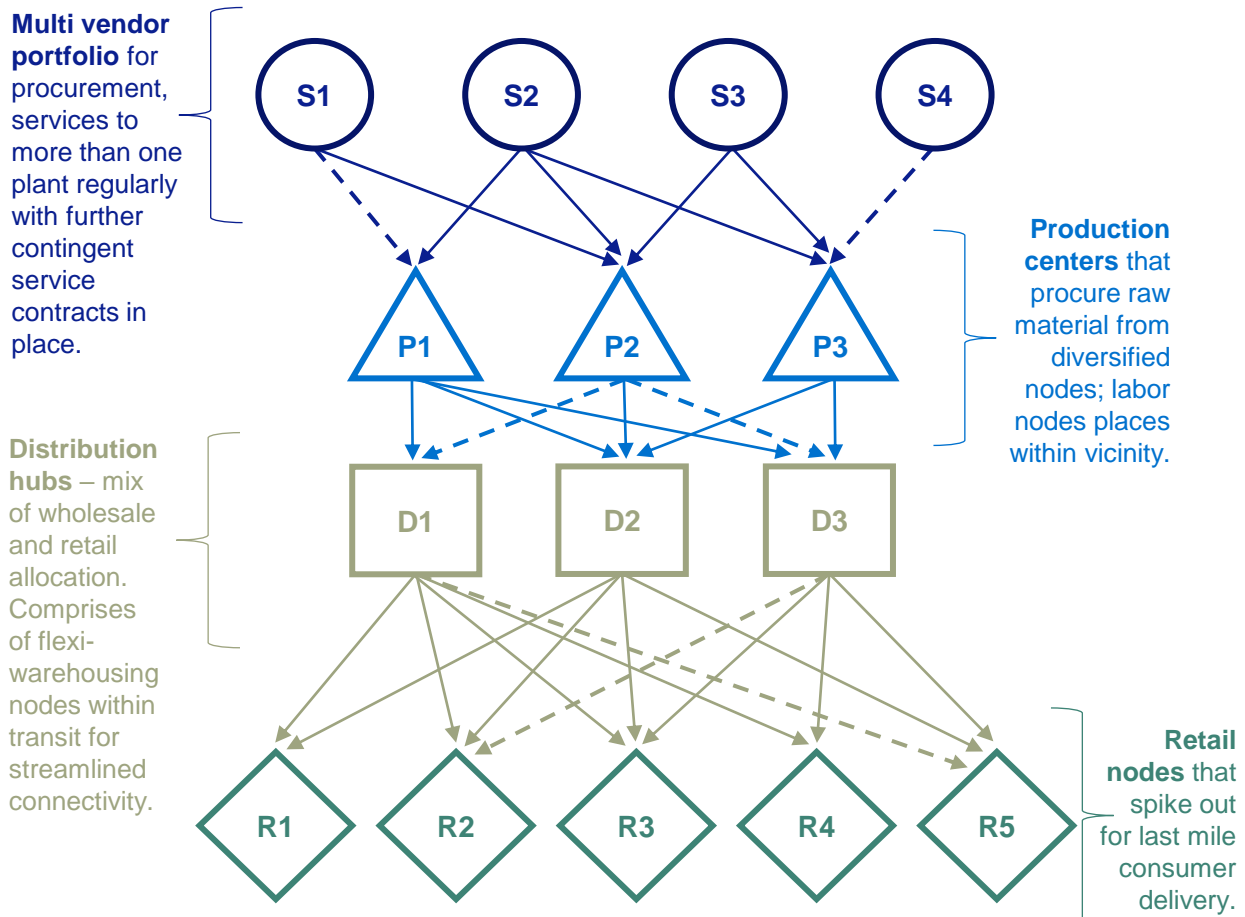
One important thing to manage here will be quality checks, especially with agri-products, edible goods and pharmaceuticals, which operate amid stringent regulatory norms. Leveraging technology here proves to be very efficient for overseeing and meeting mass quality norms.

While macro movements like inflation may pose certain challenges for contractual markets from time-to-time, the ability for these derivatives to manage the risk for volatility – especially for small, fragmented players – can be critical to bring stability in the overall ecosystem. The key is to help the smaller players get access to hedging.

Sailing through streamlined supply

Streamlining a shock-absorbent network

Multi-network node supply chain



Source: Mazars' Analysis

Key parameters

- Every raw material is branched out to as many vendor nodes as possible, with a mix of both regular and contingent contract nodes. i.e., apart from a core supplier that supplies to multiple production nodes, there will be select suppliers in place standing on contingent contracts for special circumstances. Contracts may be at a fixed premium. (indicated by dashed lines)
- Hedging will be utilized to fix order price and amount at certain parts of the chain.
- Information delivery would be robust across all levels of the chain to ensure transparency and accountability across the process.
- Greater spokes need to be connected at multimodal logistics hubs, especially to ensure last mile connectivity to the end consumer.



The road ahead



The road ahead

Just as any aircraft is vulnerable to facing bouts of turbulence amid clear, cloudy skies, businesses are exposed to facing unexpected pitfalls and volatile winds, no matter how operationally sound or established their processes are. COVID-19 has been a perfect example to showcase how systematic frameworks can fall apart in the split of a second, bringing out even the tiniest of gaps to the forefront. Having agile and resilient models has thereby become a sustenance mechanism across industries and practices.

Supply chain, or effective supply chain management, is one of those core facets that is undergoing radical change. Companies are re-engineering their globally-dispersed chains to account for global volatility as well, bringing certain features in “closer proximity.” Shock-absorbency and disaster-responsiveness are at center stage here, with a view to undergo “business as normal” when circumstances become anything but normal.

While technology is a core enabler to help businesses design such strategies, given that digital platforms played a vital role in bridging work when people were isolated at homes, tech-adoption alone cannot change the tables. A sound supply chain model 4.0 requires designing agile functions that are made up of people, processes, platforms and overarching strategic objectives, with the intent to not just sustain but also extend operations in times of a revolutionary shift.



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