

ISSN 2320-0758

PRICE ₹ 50/-

# MATERIALS MANAGEMENT REVIEW



Volume 19 - Issue 12    Date of Publication: 1-10-2023    No. of Pages 1-60    October 2023

## Sustainability in Logistics Towards Greener Supply Chains in India



## MANAGEMENT QUOTES

“Management is doing things right; leadership is doing the right things.”  
– *Peter Drucker*

“We all need people who will give us feedback. That's how we improve.”  
– *Bill Gates*

“If you can laugh together, you can work together” – *Robert Orben*

“The strength of the team is each individual member. The strength of each member is the team” – *Phil Jackson*

“A manager is a guide. He/She takes a group of people and says, 'With you, I can make us a success; I can show you the way.’”  
– *Arsene Wenger*

“The speed of the boss is the speed of the team.” – *Lee Iacocca*

“Instead of trying to be the best on the team, be the best for the team.” –  
*Unknown*

“Management must speak with one voice. When it doesn't, management itself becomes a peripheral opponent to the team's mission.” – *Pat Riley*

“There is no such thing as a self-made man. You will reach your goals only with the help of others.” – *George Shinn*

“We talk a lot about hope, helping, and teamwork. Our whole message is that we are more powerful together.” – *Victoria Osteen*

“Individual commitment to a group effort. That is what makes a team work, a company work, a society work, a civilization work.”  
– *Vince Lombardi*

“Don't be fooled by the calendar. There are only as many days in the year as you make use of. One man gets only a week's value out of a year while another man gets a full year's value out of a week.”  
– *Charles Richards*

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## *From the Desk of Chief Editor & National President*



In an increasingly globalized, complex and tech driven business landscape, supply chain excellence has become a critical factor for organizations aiming to remain profitable and competitive. Supply chain excellence is not just about cost reduction and increasing efficiency but it is a cumulative process which encompasses strategic thinking, innovation, and agility in the supply chain so as to meet customer demands efficiently, minimize risks, and seize new market opportunities.

The recent pandemic and war situations have brought an imbalance in the demand and supply of goods, giving a tough time to global business players to complete their supply chain processes, thus, affecting the entire global supply chain. At the same time, these appalling situations have also opened the doors of opportunities for companies to embrace tech-led supply chain management solutions so as to expect the unexpected, enabling demand forecasting and enhancing customer satisfaction.

Supply chain excellence cannot be achieved without integration of new and innovative technological tools in the supply chain space. For instance, by gaining access to real time data with the help of embedded sensors, RFID tags and other tracking technologies we can identify actionable data & areas, thereby, improving visibility on the inventories, transportation and other supply chain issues which can be negated by professionals involved in supply chain by taking well informed decisions in case of unexpected challenges.

Supply chains generate enormous amount of data which needs to be processed, analysed, interpreted and put to use in real world to gain intelligent supply chain insights. Machine learning & Artificial intelligence are the backbones of supply chain analytics. These technologies continuously study the data, develop algorithms and give human-like responses to manage the supply chains.

IoT constantly works in the background to collect & provide the raw data that is needed for the AI to work effectively. Digital twin & Control tower then together come into the picture for end-to-end management of supply chains. Control towers closely monitor all the functions of supply chain processes, identify the gap areas & suggest necessary corrective actions. (Digital twin, which is nothing but a virtual representation of the original process, shows how the recommended actions can bring overall benefit to the supply chain).

For keeping the supply chains in motion and making them the successful ones, technology is one part but other factors are equally important like new initiatives, policy changes, government support to improve the logistical infrastructure. In this regard, during recently concluded G20 Summit, India has announced, the landmark **India-Middle East-Europe Economic Corridor (IMEC)** which is expected to be a game changer for global supply chains. This will redefine the movement of goods and services across the three continents as it will bring down logistics costs and ensure quicker delivery of shipments. Investment in the transformative project will greatly boost economic activities, create jobs and most importantly help reduce carbon footprint and will make the global supply chain more resilient. It is high time that appropriate technology and tools are adopted by industry and supply chain professionals at the earliest.

A handwritten signature in black ink, appearing to read 'H. K. Sharma', with a horizontal line underneath.

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**Printed at :**  
Power Printers,  
4249/82, 2 Ansari Road, Daryaganj,  
New Delhi - 110002



# MATERIALS MANAGEMENT REVIEW

**Volume 19 - Issue 12**

**(October 2023)**

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**NO. OF PAGES 1-60**

**Edited, Printed & Published by :**

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*(Published material has been compiled from several sources. IIMM disowns any responsibility for the use of any information from the Magazine if published anywhere by anyone.)*

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# “ROLE OF SUPPLY CHAIN IN MAKING INDIA BEYOND USD 5 TRILLION ECONOMY BY 2025”

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**I**ntroduction : Supply Chain can definitely do a role play in take forward of Indian current GDP economy of 3.469 trillion dollar to 5 trillion dollar mile stone in 2025 - the high optimistic vision of PM Shri Narendra Modi.

## Efficient SCM - Key Critical Factors

SCM major role play to balance and bringing the consumer demand and supply chain cycle in more efficient way in the following ways.

- ✓ When GDP is growing towards 5 Trillion US\$, the consumer buying capacity and consumer market demand shall grow in exponential form.
- ✓ Middle income population shall cross more than 50% from current 31% (42 crore people monthly income from 5 lakh to 30 lakh CTC).
- ✓ Manufacturing (material source) of materials/products trend must grow in parallel mode to fulfill the demand.
- ✓ Infrastructure must be grown in parallel trend for seamless efficient logistics/freight/transportation services of material towards all corner of nation with global freight cost bench mark of below 10% GDP.
- ✓ Digital and technology transformation must support the services, communication and governance in more efficient and faster mode.
- ✓ Indigenisation, Free Trade Agreements, Ease of doing business score trend (current 43 global rank) must support and promote investment and business growth for easy sourcing of material in domestic market as well as effective & quick sourcing of material and service sourcing across global
- ✓ Sustainable and high efficient government banking, private financial and Insurance company services shall give effective financial and insurance support for business promotion.
- ✓ Food Production and its supply Chain must be more efficient for people food security, malnutrition and all basic fulfillment of people.
- ✓ Agriculture and allied products production and farmer income and their life style growth plan must be taken care with proper government policy from green revolutionary technology to mass storage of food grains in centralized warehousing for flawless domestic supply as well as export of surplus production across globe for hefty revenue generation with effective foreign trading policy, governance and control mechanism.

Data Analytic and statics to relate the above critical points with India major GDP transformation journey in the past decade in the following major sectors detailed as below.

Current(Feb 2023) 3.469 trillion dollar India GDP

categorized in the below three sector and its percentage role play data is as below

- I. Primary sector (comprising agriculture, forestry, fishing, and mining & quarrying)- 21.82 % - 0.758 trillion dollar
- II. Secondary Sector (comprising manufacturing, electricity, gas, water supply & other utility services, and construction) - 24.29 % - 0.843 trillion dollar
- III. Tertiary sector (services comprising of Financial, Real estate, trade, hotels and transport, communication and services) sector - 53.89 percent - 1.869 trillion dollar

Ideally all these 3 major sectors are well integral part of Supply Chain as briefed above, Lets see how the rational of these sector development and break through in the past decade with the statistics as below. I believe the below detailed data analytic and data statistics in these 3 major sectors shall reflect the reality of the critical points briefed in introduction session and we can clearly relate and understand how the transformation visualized SCM supply chain efficient contribution with the GDP growth journey of India.

## I. Primary Sector (Agriculture and allied) Vs SCM

Indian agricultural sector is predicted to increase to US\$ 24 billion by 2025. Indian food and grocery market is the world's sixth largest, with retail contributing 70% of the sales. Total food grain production in the country is estimated at 149.92 million tonnes for FY22. Rapid population expansion in India is the main factor driving the industry. The rising income levels in rural and urban areas, which have contributed to an increase in the demand for agricultural products across the nation.

Private consumption expenditure (at constant prices) was estimated at Rs. 80.8 trillion (US\$ 1.08 trillion) in FY22 against Rs. 75.6 trillion (US\$ 1.01 trillion) in FY20.

In terms of exports, the sector has seen good growth in the past year. In FY22 (until December 2021) and growth estimation by 2025 as below

- ✓ Exports of marine products stood at US\$ 6.12 billion and 2025 - US\$ 14.5 billion
- ✓ Exports of rice (Basmati and Non-Basmati) stood at US\$ 6.12 billion and in 2025 - US\$ 7.5 billion
- ✓ Agriculture and allied activities recorded a growth rate of 3.9% in FY 2021-22 (until 31 January, 2022)
- ✓ The processed food market in India is expected to grow to Rs. 3,451,352.5 crore (US\$ 470 billion) by 2025

Other essential major food products Exports are as of FY22 is as below

- ✓ Buffalo meat exports stood at US\$ 2.51 billion.
- ✓ Sugar exports stood at US\$ 2.78 billion.
- ✓ Tea exports stood at US\$ 570.15 million.
- ✓ Coffee exports stood at US\$ 719.95 million.
- ✓ India's agricultural and processed food products exports stood at US\$ 9,598 million in FY 2022-23 (April-July 2022), up by 30% YoY.
- ✓ The organic food segment in India is estimated to reach Rs. 75,000 crore (US\$ 10.73 billion) by 2025 from Rs. 2,700 crore (US\$ 386.32 million) in 2015.

Some major investments and developments in agriculture are as follows

- ✓ Recorded a sharp increase in investments with cumulative FDI inflow of US\$ 2,600.70 million between April 2000-June 2022.
- ✓ In 2022, the Government of India is planning to launch Kisan Drones for crop assessment, digitization of land records, spraying of insecticides and nutrients.
- ✓ PM Kisan Samman 2022 released PM-KISAN Funds worth Rs. 16,000 crore (US\$ 1.93 billion)
- ✓ In August 2022, a Special Food Processing Fund of Rs. 2,000 crore (US\$ 242.72 million) was set up with National Bank for Agriculture and Rural Development (NABARD) to provide affordable credit for investments in setting up Mega Food Parks (MFP)
- ✓ In August 2022, inaugurated Central Arid Zone Research Institute (CAZRI), which has been rendering excellent services for more than 60 years under the Indian Council of Agricultural Research (ICAR).
- ✓ From 2017 to 2020, India received ~US\$ 1 billion in agritech funding. With significant interest from the investors,
- ✓ India ranks third in terms of agritech funding and number of agritech start-ups. By 2025, Indian agritech companies are likely to witness investments worth US\$ 30-35 billion.
- ✓ Nestle India will invest Rs. 700 crore (US\$ 100.16 million) in construction of its ninth factory in Gujarat.

## II. Secondary Sector (Manufacturing) Vs SCM - Domestic and Global Easy Sourcing

Manufacturing Sector Growth Vision with following key category actions. It helps mammoth FDI (Foreign Direct Investment) flow in the past 8 years.

- a) Make in India
  - b) EoD - Ease of Doing Business
  - c) Free Trade Agreement (FTA)
  - d) Critical Material Production trend (cement, steel, power, real estate)
  - e) Digitization Vs MSME
- a) Make in India

Make in India, the flagship program of the Government of India that aspires to facilitate investment, foster innovation, enhance skill development, and build best-in-class manufacturing infrastructure, completes 8 years of path-breaking reforms on 25th September 2022. Major

breakthroughs are as below

- Ø 11% of defence import reduced
- Ø Annual FDI doubles to USD 83 billion.
- Ø Centre to focus on key sectors like semiconductors to achieve PM Modi's vision of an 'aatmanirbhar Bharat'
- Ø Reduction in compliance burden brings down cost and enhances ease of doing business in the country
- Ø Production Linked Incentive Scheme (PLI) gives huge boost to localized manufacturing with all 14 schemes being operational
- Ø India's export of toys registers tremendous growth of 636% in April-August 2022 over the same period in 2013
- Ø The Public Procurement (Preference to Make in India) Order 2017 boosts local industry by providing them preference in public procurement of Goods, Works and Services
- Ø 5G technology indigenisation initiative opens a high level transformation in india's spectrum technology
- Ø Year 2021-22 recorded the highest ever FDI at \$83.6 billion.
- Ø FDI has come from 101 countries, and invested across 31 UTs and States and 57 sectors in the country.
- Ø India is on track to attract US\$ 100 Bn FDI in the current FY. Recognizing the importance of semiconductors in the world economy, the Government of India has launched a USD 10 billion incentive scheme to build a semiconductor, display, design ecosystem in India
- Ø National Single Window System (NSWS) has been soft-launched in September 2021 to improve the ease-of-doing-business .
- Ø The Government has also launched programme for multi modal connectivity to manufacturing zones in the country, called the Prime Minister's Gatishakti programme. This will enable faster movement of goods and people, enhancing access to markets, hubs, and opportunities, and reducing logistics cost.
- Ø The One-District-One-Product (ODOP) initiative is another manifestation of the 'Make in India' vision for facilitating promotion and production of the indigenous products from each district of the country
- b) EoD - Ease of Doing Business (Current Global Rank - 43 out of 190 nations)
- Ø In Budget 2023 Finance Minister said that for enhancing ease of doing business, more than 39,000 compliance have been reduced and more than 3,400 legal provisions have been decriminalized.
- Ø FM added that for furthering the trust based governance, Government has introduced the Jan Vishwas Bill to amend 42 Central Acts.
- Ø India has emerged as an unrivalled market for goods and services. With a strong demographic dividend projected to last for decades, a healthy ecosystem of effective regulatory processes, sustainable and stable macroeconomic conditions, competitive factor markets, and growing domestic demand, India is the bright spot in the dismal global backdrop of sluggish economic growth.



- ∅ In the last few years, the government has introduced several industry-friendly policies such as PLI schemes, Remission of Duties and Taxes on Exported Products (RoDTEP), PM Gati Shakti, India Industrial Landbank, the National Logistics Policy and the National Single Window System to project India as the most attractive destination, not only for investments but also for doing business.
- ∅ With the intention of fostering healthy competition at the sub-national level, the Department for Promotion of Industries & Internal Trade (DPIIT) initiated the Business Reform Action Plan (BRAP) exercise in 2014, one of the most dynamic reforms ranking all the States and UTs based on designated reform parameters.
- ∅ As a result of these efforts, India has improved substantially in the World Bank's Doing Business rankings from 142 in 2014 to 43 in 2023. It has progressed on seven out of the 10 parameters.
- ∅ The 10-digit Permanent Account Number, or PAN, will be used as a common business identifier for all digital systems of all specified departments of government agencies.
- ∅ An integrated system of unified filing processes at the central and state-level departments will be set up to avoid repeated submission of documents, ensure the authenticity of the same and lead to quicker processing of requests.
- ∅ A country's business regulatory environment is a particularly important and influential determinant in a country's economic growth levels.
- c) FTA (Free Trade Agreement)
  - ∅ The national logistics policy is a key priority area for the government as it will bring down logistics costs and the Prime Minister Gati Shakti programme will help in holistic planning for infrastructure projects.
  - ∅ The country's exports, now at around USD 400 billion, are expected to touch USD one trillion hopefully next year, and the government is negotiating with FTAs with a number of countries like the EU members, Australia and Canada.
  - ∅ The IBC introduced by the government is comparable to OECD countries. The Organization for Economic Co-operation and Development (OECD) has 38 countries across the globe as members.
  - ∅ The FTAs will open up the market for Indian goods and services abroad, she said adding that one thing Indian producers need to ensure is maintaining good quality and standards.
- d) Critical Material Production Trend Data
  - i. Cement Production Trend
 

In FY 2022, domestic production of cement stood at 356 million tons, up from 296 million tons in FY 2021. In terms of volume, cement consumption reached 355.46 million tons in FY 2022 and is expected to reach 400 million tons by the end of FY 2025.
  - ii) Power Production
    - ∅ The peak power demand met, which is the highest supply in a day, rose to 205.03 gigawatt (GW) in December 2022.
- ∅ The manufacturing sector contributes about 14.4 per cent and electricity about 2.7 per cent to India's GDP.
- iii) Real Estate Sector
 

The Indian real estate sector is predicted to be worth \$1 trillion by 2030, up from \$200 billion in 2021, and to contribute 13% of the country's GDP by 2025.
- iv) Mining Industry
 

The gross domestic product (GDP) contribution of the mining industry varies from 2.2% to 2.5% only but going by the GDP of the total industrial sector, it contributes around 10% to 11%.
- v) Steel Production
  - ∅ Steel industry can steer India towards \$5 tn economy by 2025:
  - ∅ As of FY21, India is the world's second largest steel producer with ~102.5 MT production and an installed capacity of 142.2 MT.
  - ∅ On the consumption front, India is the third largest steel consumer in the world and has a finished steel consumption of 94.9 MT in FY21.
  - ∅ Sectors that have emerged as leaders in using finished steel are — construction (62 percent); capital goods (15 percent); automotive (9 percent); intermediate products (6 percent); consumer durables (5 percent); and railways (3 percent) as of July 2021
  - ∅ India's crude steel production rose by 5.80 per cent to 124.45 million tonne (MT) in 2022, according to SteelMint.
  - ∅ Domestic production of specialty steel was able to meet 85 percent of India's demand in FY21,
- e) Digitization vs MSME Growth (domestic sourcing promotion)
  - ∅ Micro, small and medium enterprises (MSMEs) such as small manufacturers and retailers are the growth engines of India's economy, accounting for almost 30 percent of GDP, 40 percent of the workforce, and around 45 percent of total exports.
  - ∅ There are over 5.5 crore small business enterprises that boost our GDP through manufacturing, trading, exporting and importing. As per msme.gov.in, over 15 million people are employed in this sector per annum, .
  - ∅ 28 percent of MSMEs and startups witnessed a growth between 100-500 percent
  - ∅ Adoption of technology and establishing a digital presence is critical for streamlining the processes and drive efficiency.
  - ∅ Digitalization of small businesses will enable us to target skilling and handholding initiatives closely and also expose them to new market opportunities nationally and globally.
- III. Tertiary Sector (Services) Vs SCM
 

The following two sector transformation can create a high potential and high X impact on Supply Chain Management contribution towards Tertiary Sector portion to GDP growth.
- A) SCM Vs Agile Infra Transformation with Operational

## Excellence

### a) Roadways

- ü Roadways high agile transformation shall improve Domestic logistics and freight to more resilient and high efficient one,
- ü “FY 23-24 10 lakh crore budget for infra development shall accomplish the vision of Indian road quality standard to meet the quality of US road,” vision statement of Honorable Road Transportation and Highways Minister Mr.Nitin Gadkari.
- ü 60% of the India freight transportation is depends on road transportation and it is the backbone of India's supply chain world.
- ü Freight cost reduction from 14% of GDP to 10% of GDP by 2024- declaration by Sh.Nitin Gadkri shall create very positive impact on commodity prices become cheaper.
- ü Indian Roadway network is 62.15 lakh KM length which is second largest one in world 72.87% focused on rural area road development.
- ü India's roadways quality ranking rose from 87 in 2008 to 46 in 2019(latest).

### b) Railways

- ü Indian Railways total rail length is 68043 KM it is 4<sup>th</sup> largest in world ranking.
- ü 85% of total rail length is electrified as of today it is 58000 KM.
- ü Average speed of Indian Rail is increased to 43.2 KMPH in 2020.
- ü For freight train average speed hike is planned to 50 KMPH by 2024.
- ü This This shall improve our railway freight logistics efficiency with 10 to 12% further. The railway sector in India aims to contribute about 1.5% to the country's GDP.

In 2023 budget 2.5 lakh crore is allocated for railway infra, this investment shall impact GDP in the form more job creation, manufacturing sector growth and other major service sectors growth.

### c) Sea Cargo / Water Ways

The Port sector is a critical infrastructure segment, which plays a crucial role in the country's economic growth by ensuring better connectivity for global trade and helping in moderating the logistics cost.

The Government had been focusing on improving the Port infrastructure under programs like 'Sagarmala', approved in 2015.

- ü Coastal shipping traffic grows from 74.9 MMTA in 2014 to 133 MMTPA in 2022
- ü Clear and robust pipeline of 81 projects of more than Rs 42,400 crore to be awarded on PPP till FY25
- ü The Cargo movement on National Waterways recorded as 60.25 Million Ton in 2022
- ü India Sea Cargo Port handling capacity increased to 1,560.61 MTPA by the end of March 2021, .
- ü The average turnaround time at these major ports has

reduced from 62.11 hours in 2019-20 to 55.99 hours in 2020-21

### d) Air Cargo

The total international freight tonnage handled at Indian airports in year 2021 was at 2.5 million metric tons. There are more than 400 airports and airstrips in India.

Global SCM (import and export) shall create a very positive impact with support of Sea Cargo and Air Cargo infra agile and resilient transformation

### B) SCM vs Digital & Technology Transformation - 1 Trillion Dollar Economy feasibility

#### a) Major Achievements Made under Digital India Programme

- i. Aadhaar: Aadhaar provides 12 digit biometric and demographic based identity
- ii. Common Services Centres – CSCs - over 400 digital services are being offered by these CSCs
- iii. DigiLocker: Digital Locker provides an ecosystem with collection of repositories and gateways for issuers to upload the documents in the digital repositories.
- iv. Unified Mobile Application for New-age Governance (UMANG)
- v. e-Sign: e-Sign service facilitates instant signing of forms/documents online
- vi. MyGov – It is a citizen engagement platform that is developed to facilitate participatory governance.
- vii. Digital Village: MeitY has connected 700 Gram Panchayats (GPs)/Village
- viii. “Pradhan Mantri Gramin Digital Saksharta Abhiyan (PMGDISHA)” to usher in digital literacy in rural India by covering 6 Crore rural households
- ix. Unified Payment Interface (UPI) is the leading digital payment platform.
- x. FutureSkills PRIME. The programme is aimed at re-skilling/ up-skilling of IT professionals in 10 new/ emerging technologies - Augmented/Virtual Reality, Internet of Things, Big Data Analytics, Artificial Intelligence etc
- xi. Cyber security
- xii. Modified Special Incentive Package (M-SIPS): As on date, 315 applications with proposed investment of approximately Rs. 85,632 crore have been approved.
- xiii. Electronic Manufacturing Clusters (EMC)

By 2025, core digital sectors such as IT and business process management, digital communication services, and electronics manufacturing could double their GDP level to \$355 billion to \$435 billion.

**Conclusion :** All the above clearly reflect the exponential supply and demand growth and all action plan development of all three major sector of Infra - services, industry - manufacturing and agriculture in parallel manner. Good quality road, railway, sea way and air way infrastructure shall play a vital role of high quality logistics and optimized freight cost across nation. All the three major sectors collaborative growth shall help to accomplish resilient SCM with full of agile towards vision of 5 trillion dolla GDP.





# GENERATIVE AI: PAVING THE WAY FOR THE FUTURE OF SUSTAINABLE LOGISTICS

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**Introduction:** In the rapidly evolving realm of contemporary logistics, companies are perpetually in pursuit of fresh methods to optimize their processes, boost efficiency, and shrink their ecological impact. Among the cutting-edge solutions that have garnered significant attention in recent times is Generative AI. This formidable technology harbours the capacity to transform the logistics sector, empowering enterprises to confront the multitude of hurdles they encounter while simultaneously championing an eco-friendlier and more sustainable path forward.

**Artificial intelligence** is characterized as the emulation of human intelligence by machines. It encompasses systems designed to imitate, replicate, automate and over time to enhance human like cognitive processes. Over the last fifty years, several fundamental components of AI have been identified as crucial, including the capacity to perceive, comprehend, acquire knowledge solve problems and engage in reasoning. Artificial intelligence (AI) has a growing presence in our personal lives and is rapidly being applied by business to increase efficiency and create new values.



Figure 1: Rise of AI. Source: Lawrence D. Anderson, II

**Types of AI:** Weak AI or narrow AI: Narrow ai is a type of AI which is able to perform a dedicated task with intelligence. It cannot perform beyond its field or limitations, as it is only trained for one specific task.

**General AI:** is a type of intelligence which could perform any intellectual task with efficiency like a human. The idea behind the general ai to make such a system which could be smarter and think like a human by its own.

**Super AI:** Super AI is a level of intelligence of systems at which machines could surpass human intelligence, and can perform any task better than human with cognitive properties.

Artificial intelligence type-2 Based on functionality:

- **Reactive machines:** It won't store memories or past experiences for future actions. It only focusses on

current scenarios and react on it as per possible best action.

- **Limited memory:** It can store past experiences or some data for a short period of time.
- **Theory of mind AI:** It understand the human emotions, people, beliefs and be able to interact socially like humans.
- **Self-awareness AI:** it is the future of AI. These machines will be super intelligent and will have their own consciousness, sentiments and self-awareness.

**Difference between Robots and Cobots:** Collaborative robots are commonly known as cobots and possess the innate ability to work in tandem with humans, whereas traditional industrial robots work in place of humans. While collaborative robots are efficient Industrial IoT (IIoT) solutions, some projects may be better suited for traditional robotic technology. The ultimate considerations of selecting between a cobot or a robot for your automated solution are use case and application.

- **Industrial robots** are optimal for heavy manufacturing processes like those of automotive industries due to their inherent ability to handle larger materials.
- **Keeping employee safety in mind,** industrial robots are equipped with protective cages to separate employees from the workspace and provide a secure environment.
- **Cobots** are built with customization in mind with pre-engineered designs that can reduce time and cost surrounding tailored applications.

**Automation (RPA)** has given rise to a transformative technology known as cognitive automation. By synergizing AI and RPA, organizations empower their workforce to enhance productivity and precision. A notable application of this synergy is the automation of repetitive data-centric tasks through AI, particularly within back-office operations. This amalgamation of technologies proves invaluable for companies involved in supply chain management as it leads to significant time and cost savings. Moreover, cognitive automation has the potential to render certain job categories, such as accountants and human resources specialists, redundant. However, this shift also results in a reduced likelihood of human errors occurring.

**Generative AI:** Generative AI represents a specialized branch within artificial intelligence dedicated to crafting novel content, solutions, or concepts, rather than solely scrutinizing pre-existing data. It harnesses sophisticated

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machine learning methodologies like deep learning, reinforcement learning, and natural language processing to produce outputs that once demanded human creativity and knowledge, pushing the boundaries of automated innovation.

#### Types of Generative AI:

- **Variational Autoencoder (VAE):** A Variational Autoencoder (VAE) is a specific category of generative AI, frequently applied in the realm of image and video processing. Its fundamental operation involves taking an initial image, encoding it into a reduced-dimensional representation, and subsequently decoding it to generate an output image. Within logistics, VAEs find practical application in tasks like image recognition and object detection. For instance, VAEs prove valuable in the analysis of product images, enabling the classification of items based on characteristics like size, shape, and color.
- **Generative adversarial networks (GANs):** Generative Adversarial Networks (GANs) belong to the category of generative AI systems utilized to create fresh data samples resembling the ones found in the training dataset. GANs operate by training two neural networks concurrently: a generator network responsible for producing new data samples and a discriminator network tasked with discerning between genuine data and the generated counterparts. The generator network is trained to generate data that closely resembles the training dataset, while the discriminator network learns to accurately classify data as either authentic or synthetic. In the logistics domain, GANs find utility in tasks like demand prediction and optimizing supply chain operations.
- **Recurrent Neural Networks (RNNs):** Recurrent Neural Networks (RNNs) represent a subset of generative AI tailored for handling sequential data tasks like natural language processing and time-series analysis. RNNs function by sequentially processing data sequences, like words in a sentence or time-series information, utilizing the output from each step as input for the subsequent step. In the realm of logistics, RNNs serve valuable roles in operations such as demand prediction and anticipatory maintenance.
- **Long short-term memory networks:** Long Short-Term Memory (LSTM) Networks represent a specialized form of Recurrent Neural Networks (RNNs) tailored to manage extensive data sequences effectively. In the logistics sector, LSTMs play a pivotal role in tasks like predicting demand and foreseeing maintenance needs. These tasks often involve intricate and challenging data patterns that demand sophisticated analysis. LSTMs shine in such scenarios because they possess the ability to discern patterns within data spanning extended timeframes, rendering them exceptionally suitable for these specific logistics applications.

**Generative AI offers several significant benefits for logistics operations:**

- **Enhanced demand forecasting:** Generative AI can create realistic synthetic data, which can be used to augment existing datasets for more accurate demand forecasting. This can lead to better inventory management and reduced instances of overstock or stockouts.
- **Data Augmentation:** By generating additional training data, generative AI helps improve the performance of machine learning models, making them more robust and accurate in tasks like image recognition or natural language understanding.
- **Predictive maintenance:** Generative models can be employed to simulate equipment sensor data, enabling predictive maintenance algorithms to identify potential failures and reduce downtime.
- **Route Optimization:** Generative AI can generate alternative routes and scenarios for optimizing transportation and delivery routes, taking into account factors like traffic conditions, weather, and fuel efficiency.
- **Supply chain simulation:** Generative AI can create simulations of supply chain scenarios, allowing logistics professionals to test different strategies, anticipate disruptions, and optimize processes without risking real-world consequences.
- **Personalization and customization:** In logistics, generative AI can help create personalized delivery routes, packaging designs, or product recommendations for customers, enhancing the customer experience.
- **Anomaly detection:** Generative models can be trained to understand normal patterns of operation within a logistics network. Any deviations from these patterns can trigger alerts for potential issues, such as theft, fraud, or operational inefficiencies.
- **Natural language processing:** In customer support and communication, generative AI can generate human-like responses to inquiries and automate routine interactions, improving efficiency and response times.
- **Environmental impact reduction:** By optimizing routes and logistics processes, generative AI can help reduce fuel consumption and greenhouse gas emissions, contributing to sustainability goals.
- **Time and cost savings:** Generative AI can automate various tasks, reducing manual labor and operational costs while increasing overall efficiency.
- **Supply chain resilience:** Through scenario generation and stress testing, generative AI helps identify vulnerabilities in the supply chain, allowing for better preparation and risk management in the face of unforeseen events.
- **Continuous improvement:** By generating alternative solutions and evaluating their effectiveness, generative AI fosters a culture of continuous improvement in logistics operations.
- **Incorporating generative AI into logistics can lead**

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to smarter, more efficient, and more responsive supply chain management, ultimately benefiting companies through improved customer satisfaction, reduced costs, and increased competitiveness.

#### Future trends in GAI and logistics:

- **Autonomous Vehicles and Drones** With the development of self-driving vehicles and drones, generative AI can play a crucial role in optimizing routing algorithms and navigation systems. This will enable autonomous vehicles to travel more efficiently, reducing transportation costs and carbon emissions. Furthermore, AI-powered drones can be used for last-mile delivery, especially in remote or hard-to-reach areas, improving accessibility and overall customer satisfaction.
- **Smart Contracts and Blockchain Technology** Generative AI can be integrated with blockchain technology to create smart contracts that automatically execute when specific conditions are met. This can lead to greater transparency, trust, and efficiency in the logistics industry by automating processes such as payment, shipment tracking, and dispute resolution. In addition, blockchain's decentralized nature can help reduce the risk of fraud and data manipulation, ensuring a more secure and reliable supply chain.
- **Personalized Customer Experiences** Generative AI can help logistics providers offer personalized experiences to their customers by analysing their preferences, behaviour, and past interactions. This can result in tailored marketing campaigns, customized product recommendations, and individualized communication. By offering a more personalized experience, logistics providers can build stronger relationships with their customers and enhance brand loyalty.
- **Real-time Data Analysis and Decision-Making** Generative AI can process and analyse large volumes of data in real-time, providing logistics providers with valuable insights and enabling them to make data-driven decisions quickly. This can help in areas such as demand forecasting, inventory management, and transportation optimization. As a result, businesses can respond more effectively to changes in the market and better manage disruptions in the supply chain.
- **AI-driven Simulation and Modelling** Generative AI can be used to create realistic simulations of various supply chain scenarios, allowing logistics providers to test and optimize their strategies in a virtual environment. This can help companies identify potential bottlenecks, inefficiencies, and risks, enabling them to develop more effective and resilient supply chain strategies.
- **Robotics and Automation** The integration of generative AI with robotics and automation technologies will continue to revolutionize warehouse operations. AI-powered robots can efficiently perform tasks such as picking, packing, and sorting, while machine learning algorithms can

optimize their movements and coordination. This will lead to increased productivity, reduced labor costs, and improved safety in warehouses.

#### Risks of Generative AI in logistics:

- **Data Security and Privacy** The increasing reliance on data and AI-driven systems raises concerns about data security and privacy. Logistics providers must ensure that they have robust data protection measures in place to prevent unauthorized access, data breaches, and potential misuse of sensitive information.
- **Ethical Considerations** The use of AI in logistics may raise ethical questions, particularly around automation and its impact on employment. Companies need to consider the potential implications of replacing human labor with AI-powered systems and should explore ways to retrain and upskill their workforce to remain competitive in the evolving industry landscape.
- **Algorithmic Bias** Generative AI algorithms may inadvertently perpetuate or amplify existing biases in the data they are trained on. To minimize the risk of biased decision-making, logistics providers should actively work on identifying and addressing potential biases in their AI systems.
- **Legal and Regulatory Compliance** As the use of AI in logistics becomes more prevalent, new laws and regulations may be introduced to govern its application. rewrite in a high-level language

#### Conclusion:

Generative AI holds immense promise for transforming how logistics operations function. It has the capacity to revolutionize the industry by leveraging extensive data analysis and pattern recognition to empower businesses in making smarter decisions that ultimately result in superior results. Generative AI can be applied across various aspects of logistics, ranging from predicting demand to optimizing supply chains. It encompasses different categories, each with its unique strengths and weaknesses. By gaining a comprehensive grasp of these diverse generative AI types and their practical uses, companies can select the most suitable technology to address their precise requirements, leading to substantial advancements and achievements within their field.

#### References:

Generative AI in Logistics Market Size to Reach USD 8,070.0 (globenewswire.com)

Generative AI for Supply Chain Management and its Use Cases (xenonstack.com)

Implementing generative AI in supply chain - 4flow

The Limitations and Potential of Generative AI in the Supply Chain | SupplyChainBrain





## DEGLOBALIZATION: SUPPLY CHAIN MANAGEMENT CHALLENGES AND OPPORTUNITIES

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**Abstract :** This research article focuses on new shape / form of globalization (deglobalization). The benefits of globalization are highlighted. The meaning of deglobalization and the reasons for shifting from globalization to de-globalization globally are also discussed. The author has introduced a framework, i.e geographic scope of firms & geographic scope of disasters. The four important strategies are also highlighted. Deglobalization and it's economic, political and climate action impacts are also discussed. The business challenges generally and SCM challenges & specifically are also mentioned. Secondary data was used for discussion. The other issues like geopolitical, import tariffs, invasion & trade war between countries are also highlighted. Focus and opportunity areas are also highlighted. Further, empirical research should be conducted to support the discussion.

**Keywords:** Deglobalization, globalization, supply chain management challenges, opportunities

### Introduction :

**Globalization:** It is a movement towards increasing the interconnectedness and interdependence between nations and people worldwide. This process involves the free flow of goods, services, capital, and information across national borders. It promotes the removal of trade barriers and the establishment of free trade agreements, allowing countries to access larger markets and benefit from comparative advantages.

Globalization boosts international cooperation and collaboration on trade, finance, environment, and public health issues. It often involves the formation of international organizations and agreements. The process promotes cultural diversity and interconnectedness through increased travel, migration and communication.

Globalization is a term used to describe how trade and technology have made the world into a more connected and interdependent place. Globalization also captures in its scope the economic and social changes that have come about as a result. Figure 1 describes the meaning

of globalization.



Figure 1: Globalization meaning

### Benefits of globalization

Globalization allows people, goods, services, ideas, languages, information, and commodities to flow across national borders all the time. The effect of globalization is that the world is becoming increasingly smaller as we all become more and more connected.

Sourcing parts, components and raw materials from Detroit, USA and moving those inputs to India to built cars in their facility in Chennai and then exporting those cars to European markets. In this, materials flows, technology flows and then value flows.

Computer parts and accessories are manufactured in a foreign country and are sold in another country. Popular fast food chains like KFC, Starbucks, Dominos etc are based out of the USA, but have many branches around the world. Multinational companies like HSBC, Citi Bank, Deloitte etc have offices around the world.

A core element of globalization is the expansion of world trade through the elimination or reduction of trade barriers, such as import tariffs. Greater imports offer consumers a wider variety of goods at lower prices, while providing strong incentives for domestic



industries to remain competitive. Exports, often a source of economic growth for developing nations, stimulate job creation as industries sell beyond their borders. More generally, trade enhances national competitiveness by driving workers to focus on those vocations where they, and their country, have a competitive advantage. Trade promotes economic resilience and flexibility, as higher imports help to offset adverse domestic supply shocks. Greater openness can also stimulate foreign investment, which would be a source of employment for the local workforce and could bring along new technologies—thus promoting higher productivity (IMF, 2008).

Countries today are more connected than ever before, due to factors such as air travel, containerized sea shipping, international trade agreements and legal treaties, and the Internet. In the world of business, globalization is associated with trends such as outsourcing, free trade, and international supply chains.

**Deglobalization meaning :** Deglobalization is the process of reducing interconnectedness and interdependence among nations concerning business, trade, and investment. It promotes focusing on national interests and supporting national companies while eliminating foreign competition. The process involves shifting away from global integration and using a more self-reliant approach to building sustainable trade and commerce. Figure 2 explains the meaning of deglobalization.

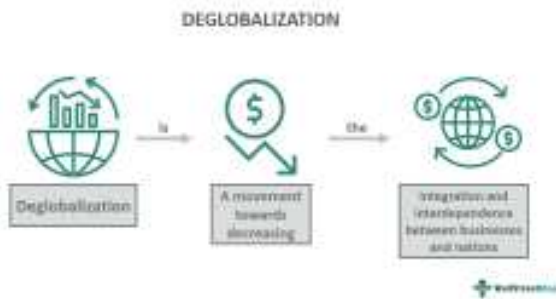


Figure 2: Deglobalization

**Reasons for Deglobalization**

The major reasons for deglobalization are:

- i. Covid-19 pandemic
- ii. Russian invasion on Ukraine
- iii. Trade war between United States and China
- iv. Industry 4.0 : Reshaping the global supply chain
- v. Aging population leads to secular stagnation
- vi. Tension between advanced economic and Emerging markets
- vii. Widening Income inequality, business resentment toward globalization

**Globalization Vs Deglobalization :** The globalization of

the world economy continued even through the COVID pandemic, but recent changes in government policy and public sentiment could herald a new era of deglobalization. Table 1 describes the outcomes of globalization and deglobalization

**Table 1: Globalization vs Deglobalization**

Globalization	Deglobalization
<ul style="list-style-type: none"> <li>• Interdependence of economies, Cultures and Population</li> <li>• Decreased interdependence</li> <li>• Increased integration</li> <li>• Better competitiveness</li> <li>• Cost control</li> </ul>	<ul style="list-style-type: none"> <li>• Shift away from integration</li> <li>• Less or no competitiveness</li> <li>• Increased cost of goods and services</li> <li>• Leads to monopoly or increased dominance in business</li> </ul>

According to Raghuram Rajan (2022), the key concerns are grouped under: Economic, Political and Climate action.

**Economic**

- Increases costs and reduces scale economies
- Reduces competition
- Could reduce resilience

**Political**

- Uncertain to limits long term investment
- Excludes countries that do not have stable democratic system
- Over dependence and isolate are equally prone to conflict
- Modest interdependence – Carrot and Stick policy

**Climate action**

- No. of global agreements needed, harder without broad exchange
- Rebuilding supply chains that run with take time through non-friends

Covid-19 pandemic has forced the economic around the world to be disintegrated and self-sufficient despite the immense scope of globalization. Figure 3 describes the geographic scope of firms and geographic scope of disasters.

		Geographic Scope of Firms	
		Low	High
Geographic Scope of Natural Disasters	Low	1 Avoidance (location choice, risk transfer)	3 Adaptation/Resilience (supply chain management)
	High	2 Prevention (risk management)	4 Organized intervention (integrative strategic planning)

Figure 3: Business paradigm shift in the International Business (Chang Hoou OG & Jennifer Oetzel, 2022).



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Many international companies have started building resilience supply chains rather than sustainable supply chains. Yellan, Secretary US said that 'our supply chains not secure and they are not resilient'.

### Current business scenario

- i. Cost of goods and services will increase / be more due to increase in import tariffs.
- ii. Increased logistics costs (20 to 40 percent increase in post covid-19 era).
- iii. Hike in import duties, can impact on landed price of certain goods.
- iv. Production Linked Incentives (PLI) of India in 14 sectors can invite foreign companies to India.
- v. The ratio of goods trade to world GDP has stagnated since 2008 at a high level.
- vi. Indian scenario, GDP is shifting inexorably from goods to services. The share of goods in trade is declining, but services exports are booming and digital exports are skyrocketing.
- vii. India accounts for only 1.5 percent of global exports, but over 4 percent of global service exports. The share of total trade in GDP has risen from 39.9 percent in 2019-20 to 49.4 percent in 2022-23.
- viii. Global investment flows keep rising. Migration is an increasing form of globalization.
- ix. Technology tools like ChatGPT are globalizing the use of Artificial Intelligence an astonishing achievement.

In view of the above, globalization is taking a new shape globally.

### Supply chain management challenges and opportunities

- i. Getting parts / items on time becomes difficult / take more time ( For example, recent incident, G20 Summit delegates from Canada could not go back as planned due to some issues in their airplane. Timely delivery or supply of items is related to supply chain problem.
- ii. It affects the competitiveness globally (cost, delivery, quality and after sales service).
- iii. Trade barriers will creep into International Business (IB).
- iv. Regional inequality / imbalance will be more.
- v. Geopolitical issues further will add fuel to the problem.

Lot of business opportunities are envisaged for India

- i. In certain sectors like semiconductor, electric battery (EV) supply chains, production linked incentive policy etc will fetch some benefits to India.
- ii. Foreign Direct Investment (FDI) will go through substantially.
- iii. India has already signed trade related agreements with UAE, Australia, Brazil, UK ( to be signed) and US. These FTAs will bring some benefits to India.
- iv. Digital service sectors will grow further and may go beyond manufacturing sectors.
- v. India's New Logistics Policy (NLP) will help to boost export opportunities.
- vi. Stable government will also facilitate for better results.

### Conclusion

Globalization is taking a new shape (avathar) due to technology, disaster either man made or natural, geopolitical reasons, socio-economic conditions of people and reasons related to advanced economic conditions of countries. Aging population, migration of people, political re-orientation of countries and leaders are also contributing for deglobalization. When, the geographic scope of firms is high and geographic scope of disasters is low, building resilience supply chains are essential. India has lot of opportunities to scale up its GDP and economic growth in chosen sectors like semiconductor manufacturing, digital services creation, creating logistics infrastructure, green energy and improving its global trade share. Emerging technologies like AI, Blockchain, IoT, 3D printing, AR & VR and Robotic Process Automation can be adopted to improve supply chain efficiency. Companies should create resilient supply chains.

### References

1. Globalization: A Brief Overview, IMF, 2008 Report.
2. Raghuram Rajan (2022). De-globalization?. The University of Chicago Booth School of Business.
3. Justin Paul & Sanjay Dhir (2021).Globalization, Deglobalization and New Paradigms in Business, Palgrave, Macmillan, Switzerland.
4. Chang Hoou OG & Jennifer Oetzel (2022). Multinational Enterprises and National disaster: Challenges and Opportunities for International Business Research. Journal of International Business Studies, January 2022.





# HOW TO TERMINATE A CONTRACT

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**Introduction :** A contract is a legally binding agreement between two or more parties that outlines their mutual obligations and rights. It typically involves an offer, acceptance, consideration, and a meeting of the minds, where parties agree to exchange something of value. When parties enter into a contract, they are legally obligated to fulfill their respective promises, and failure to do so can result in legal remedies or enforcement through the courts.

Failure to Perform the Terms Agreed to in a Contract can Result in a Breach of Contract.

**Termination of contract is an act that may occur wherein a contract can be Legally Terminated before the Contractual Duties have been Fulfilled.**

Termination of contracts is governed by contract laws, which means the law may vary according to your local state and jurisdiction.



Contracts can cover a wide range of transactions and relationships, including business deals, employment agreements, sales of goods or services, leases, and more.

## Termination of a Contract

Contract termination refers to the process of ending a legal agreement between two or more parties before the contract's originally specified completion or expiration date. When a contract is terminated, the parties are released from their obligations and duties outlined in the contract. Contract termination can occur for various reasons, including mutual agreement, breach of contract, failure of performance, change in circumstances, or the presence of specific termination clauses within the contract itself or other specified reasons.



In this article let's discuss "How to Terminate a Contract"

**Key Words:**Contract, Legal Obligations, Termination, Breach of Contract, Contract Fulfilment.

**Contractual Obligation:** A contract is a legally binding agreement between two or more parties that outlines the terms and conditions of their relationship, sets forth the rights and obligations of each party, and establishes the framework for their interactions. It creates a legal relationship that can be enforced by law if any party fails to fulfill its agreed-upon obligations.



Termination of a contract involves ceasing the rights, obligations, and responsibilities of the parties involved as stipulated in the contract terms.

The terms and conditions for contract termination are usually outlined in the contract itself or governed by relevant laws and regulations.

Terminating a contract can have legal, financial, and practical implications, so it's important to follow proper procedures and seek legal advice if needed to ensure that the termination is executed correctly and fairly.

It's important to note that contract termination should follow the terms and procedures outlined in the contract or according to relevant laws and regulations. In cases of dispute or uncertainty, legal advice might be sought to ensure that the termination is carried out correctly and fairly.



**Now Let us Discuss how to Terminate a Contract & understand Possible Circumstances leading to Termination a Contract.**

**1. Termination By Notification:** This method involves one party who wants out of the contract notifying the other party of their intention to terminate the contract as per the terms specified in the contract itself. The contract usually outlines the **notice period and conditions under which termination can occur.**

The Notice contains the Reasons & Terms under which you are Permitted to Terminate the Agreement.

A Notice of Contract Termination creates a record that you notified the other party about the cancellation and the end date.

This **Must be in Writing giving Advance Notice as per Contractual Terms** and **within a Certain Number of Days** from when they want to end the contract or when it will be automatically renewed.

**Termination clauses may generally include fees** for early termination. Be sure you are willing to pay the penalty before using the clause and terminating the contract.

Examples:

A company hires a contractor to build a website but later decides to terminate the contract by providing the contractor with a written advance notice as stipulated in the agreement.

A freelance writer giving two weeks' notice as required to a client before terminating the contract.

A lease agreement might allow either party to terminate the lease with 60 days' written notice.

A common termination clause says that the person who

wants out of the contract **must notify the others** involved of his intent to do so.

**2. Termination Due to Impossibility of Performance:** If it becomes objectively impossible for one or both parties to fulfill their obligations due to unforeseen circumstances, the contract may be terminated. Some contracts include force majeure clauses that allow termination if unforeseen events beyond the parties' control make contract performance impossible.

If one of the Parties **Unable to Perform** the obligations **due to some impossibility**, (circumstances that are beyond his Control) then that Party has a **Legal Right to Terminate** the contract.

For example, a company may hire and sign a contract to have a public speaker talk at a company event. Once the public speaker fulfills his duties agreed upon in the contract, it is called performance. However, if the speaker is seriously injured and no one could replace him, that would be **impossibility of performance**. Similarly In case of **death of a keyman** Musician who signed a contract to perform at a concert, now making impossible for the event to take place.

Another example, if you agree to sell your boat tomorrow and tonight a hurricane comes (**an unforeseen event**) and damages it beyond repair (**Force Majeure**), the **sale becomes impossible**, and **both parties can be excused from the contract.**

Some More example : Impossibility excusing one's obligations under a contract, where a party was contracted to paint a house, but the house burnt down before the party could perform.

Or a construction contract cannot be completed due to a natural disaster destroying the work site, the parties may be released from their obligations.

The site of Constructing a building subject to a contract is seized by Government before work begins, the contract could be terminated due to the impossibility of performing the agreed-upon task.

**3. Termination Due to Frustration of Purpose:** This occurs when unforeseen circumstances make the original purpose of the contract irrelevant or impossible; impractical or pointless. In such cases, the contract may be terminated. Frustration of purpose occurs when the **reason behind entering a contract goes away.** To be able to terminate a contract based on frustration of purpose, the purpose of the contract must be known by all parties involved.

For instance, if a person rents a venue for a wedding reception and the wedding is called off, the venue is no more required, the contract might be terminated due to the frustration of its purpose.

Some other examples : A Political Party leased 10 vehicles for 5 Days for Parade & Procession against certain grievances, but due to sudden changes in local laws, Procession in a particular route & area is not allowed due to regulations. The parade is cancelled. The purpose of the contract (Parade or Procession) is



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frustrated. The contract may be terminated.

Mr O - man in Oman enters into a Contract with Mr Bharat of India Two Years back to Pack Food Items in Aluminium Foils for a Period of Five Years. After two years into the Contract, now Omani laws are passed making it illegal to Pack Food Items in Aluminium Foils.

With the ban on Aluminium Foils, Mr Bharat no longer has a reason to continue with the Food Packing. The Contract can be Terminated.

#### **What effect does frustration have on a contract?**

If frustration occurs during the contractual relationship, the parties can be discharged from their agreement immediately. However, it is important to be aware, that the **contract is not terminated from the beginning of the agreement, but rather from the time of the frustrating event. It is good Practice to Specifically state in the Contract such Clause for termination due to frustration.**

The doctrine of frustration can also be imposed, when one of the parties has declared for **bankruptcy or due to death.**

Additionally, terms inserted into the contract which prevent the agreement from having effect, or a specific occurrence has transpired which causes the agreement to be terminated are also additional means in which the doctrine of frustration can be imposed.

**4. Termination Due to Breach of Contract:**In a Contract, both parties have a duty to perform in a contract.

Breaches may occur where one party fails to perform their duties as outlined in the contract, blocks you from fulfilling your duties, or when one party violates the terms of the contract;

Therefore, if a party fails to perform their contractual duties, then that Party is Breached the Contract.

If one party fails to fulfill his end of a contract, that lack of performance ie Breach by that Party may allow the Non-Breaching Party to Terminate his end of a contract.

When Breach Occurs, the non-breaching party may be able to recover losses caused by the breach.

This usually occurs after giving notice of the breach and allowing an opportunity to remedy it.

For example, if a supplier fails to deliver goods by the agreed-upon date and time is essence of the contract, the buyer might terminate the purchase contract.

Some other Examples : Consider a situation where a retail store contracts with a supplier to provide a certain quantity of electronic devices that meet specific quality standards. If the devices consistently fail to meet those quality standards, leading to customer complaints and returns, the retail store might decide to terminate the contract due to the supplier's breach of providing products of the agreed-upon quality.

Suppose, there is a Contract between A & B. The

contract stipulates that Company A shall make monthly payments upon the completion of each milestone. If Company A fails to make the agreed-upon payments for several consecutive months, Company B might consider this a material breach of the contract and could terminate the agreement due to the breach of the payment terms.

If someone was contracted to paint a wall, the other party was contracted to pay him for his service. If the painter fails to uphold his part of the contract (painting the wall), then the other party can legally terminate his side of the contract (to pay for the service) because the painting is a condition of the payment.

**5. Termination By Convenience or Mutual Agreement:** Parties may agree to terminate a contract for **reasons not related to breach or legal obligation.** This could be due to changed circumstances or a shift in priorities. This is often termed **"termination for convenience."**

The contract may have contained a **specific provision stating the conditions under which it may be terminated.** Such a provision is known as a "termination clause", and is enforceable if **both parties agree to the termination terms and may cancel the contract by mutual agreement** at any time.

For instance, Suppose a consulting firm is engaged to provide a six-month project for a client. However, midway through the project, the client's priorities shift or due to changes in business strategy, and the services now no longer required. Both of them decided to discontinue the project. The consulting firm and the client might decide to terminate the contract by mutual agreement, recognizing that the project's original objectives no longer align with the client's needs.

Another example, Imagine a situation where a business rents office space under a lease agreement for a duration of two years. After one year, the business experiences significant changes in its operations and decides to downsize its office space requirements. The business and the landlord might mutually agree to terminate the lease early without any breach of contract. This benefits both parties, as the business can reduce costs, and the landlord can find a new tenant sooner.

**6. Termination for Instances of Mistake, Fraud, or Misrepresentation:**

If a contract was formed under conditions involving mistake, misrepresentation, or fraud, the contract **may be terminated**, since it was not formed according to sound contract principles;

**Fraud** – a deceptive or fraudulent contract is not legal and will not be upheld in the court.

**Mistake** – if a mistake is made within the contract, it may be dismissed.

**Misrepresentation** – like fraudulent contracts, agreements cannot be based on misrepresentation. For instance, one party cannot fail to state all terms within the contract.

**Void contracts** are **unenforceable by law**. Even if one party **breaches** the **agreement**, you cannot recover anything because essentially there was no valid **contract**.

If one party enters into a contract based on false information, mistake, or misrepresentation by the other party, the injured or aggrieved party might have grounds for terminating the contract.

For instance, if a car dealer misrepresents the condition of a vehicle being sold, the buyer could terminate the purchase contract.

Another Example, imagine a scenario where a house owner is selling his house and advertises it as having a Two Car Parking & Garage provisions. However, upon purchasing the property, the buyer discovers that there is only one garage, not Two as promised and advertised. The buyer may have grounds to terminate the real estate contract due to misrepresentation of the property's features.

### 7. Bankruptcy or Insolvency:

Bankruptcy or insolvency can significantly impact a party's ability to fulfill its contractual obligations, which may necessitate the termination of the contract to protect the interests of the non-insolvent party. If one party goes bankrupt or becomes insolvent, it might lead to the termination of contracts involving that party. The legal implications and procedures for contract termination due to bankruptcy can be complex and may vary depending on the jurisdiction and the terms of the contract.

Imagine a manufacturing company that relies on a key supplier to provide essential raw materials for their products. If the supplier declares bankruptcy and is unable to fulfill its obligations, the manufacturing company might have to terminate the supply contract due to the supplier's insolvency.

Another Example. Suppose a business rents commercial space from a landlord under a lease agreement. If the landlord goes bankrupt and the property comes under the control of a bankruptcy trustee, the business might need to terminate the lease agreement due to the change in ownership and management.

**8. Death or Incapacity:** If a contracting party passes away or becomes incapacitated, the contract might be terminated since they can no longer fulfill their obligations.

Suppose a partnership agreement exists between two individuals who run a successful consulting firm. The agreement stipulates that the partnership will dissolve in the event of the death of either partner. If one of the partners unexpectedly passes away, the partnership contract might be terminated automatically, leading to the winding down of the business.

Another Example: Imagine a scenario where a famous musician is contracted to perform at a music festival. The contract includes provisions specifying that if the artist becomes incapacitated and unable to perform,

the contract can be terminated. If the artist suffers a serious injury that prevents them from performing, the festival organizers might have the right to terminate the contract based on the artist's incapacity.

**Please Note that If the Performance is Fulfilled as per Contract or on the Expiration of the Contract Term, the Contract comes to natural end.** Once both parties have fulfilled their obligations, the contract is considered as closed. When the contract has a predetermined end date, it closes automatically at the end of that term. For example, a one-year service contract ends after one year. **These are generally not Treated as Termination.** There is no need for termination procedures to follow.

Remember that the specific terms and conditions set out in the contract itself, as well as the governing laws under the applicable jurisdiction, will play a significant role in determining how a contract can be terminated. It's always advisable to consult legal counsel when considering terminating a contract to ensure you're following the correct procedures and protecting your rights.

### What Happens When a Contract is Terminated?

When a contract is terminated, it initiates a series of actions and **legal consequences** that vary based on the terms of the contract, applicable laws, and the circumstances of termination. If a contract has been terminated, generally **one party has legal recourse against the other party that breached the contract, unless the parties agreed to terminate the contract and release one another from their duties.**



Here's a point-wise brief on what typically happens when a contract is terminated:

- 1. Notice of Termination:** The party initiating the termination usually provides written notice to the other party, indicating the reasons for termination and referencing the specific contract clauses that justify the termination.
- 2. Legal Review & Rescission :** Both parties might review their legal rights and obligations upon termination, considering potential legal consequences, and assessing whether the termination was done in accordance with the contract terms and applicable laws. Rescission is a remedy utilized by the courts to terminate a



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contract when the parties enter into a contract because of mistake, fraud, undue influence, or duress. Rescission is also referred to as the “**cancellation**” or “**overturning**” of a contract;

3. **Return or Settlement of Goods and Services:** Depending on the contract terms, any goods or services provided up to the termination point might need to be returned, settled, or compensated for, as per the contract terms or negotiation between the parties. If any property, assets, or materials were exchanged or borrowed or used during the contract as part of the contract, the terminated parties might need to return these items to each other, as specified in the contract or through negotiations.
4. **Financial Settlement:** Financial matters related to termination, such as outstanding payments, refunds, or compensation for work completed, **compensatory damages for Non-performance or punitive damages**, are addressed. Any amounts owed by one party to the other are typically calculated and settled.
5. **Property and Information Exchange:** If applicable, the parties might need to exchange property, data, intellectual property, or confidential information that was shared during the course of the contract.
6. **Cessation of Performance & Termination of Obligations:** Cessation of Performance means both parties cease performing their obligations under the contract. This includes stopping the delivery of goods, provision of services, or any other obligations outlined in the contract. The contract might also outline specific obligations upon termination, such as return of confidential information, removal of branding, and other post-termination responsibilities.
7. **Dispute Resolution:** If there are disputes arising from the termination, parties might engage in negotiations or follow the dispute resolution mechanisms outlined in the contract, which could include mediation, arbitration, or litigation.
8. **Restitution and Remedies:** If one party breached the contract, the non-breaching party might seek remedies, restitution, or damages as outlined in the contract or by applicable laws.
9. **Reformation:** Reformation occurs when a court reforms or changes a contract to correct any inequities. Reformation is utilized by courts to rewrite an otherwise inequitable contract, instead of setting aside the entire contract; or
10. **Specific Performance:** Rarely a court might order specific performance, meaning that one party will have to perform their duties under the contract. Often, specific performance will only be ordered **where money damages are not adequate to compensate the innocent / non-breaching party.**
11. **Liability and Indemnification:** The parties might

need to clarify any liability arising from the termination, including potential indemnification for losses suffered due to the termination.

12. **Effect on Subcontracts:** If the terminated contract is part of a larger project involving subcontractors, the termination might trigger corresponding actions in those subcontracts, depending on the relationships outlined in the contracts.
13. **Post-Termination Clauses & Transition Planning :** Contracts often include clauses that continue beyond termination, such as confidentiality, non-compete, or non-solicitation clauses. These clauses might still apply after the contract ends. In some cases, contracts might require the parties to work together during the termination process to ensure a smooth transition. This could involve sharing information, assisting with the transfer of responsibilities, or helping with the handover of projects.
14. **Final Documentation:** Both parties might sign an agreement or document confirming the termination and settling any outstanding matters. Proper documentation of the termination process, including notices, communications, and actions taken, is important to mitigate any potential legal disputes in the future.
15. **Lessons Learned:** Parties might review the reasons for termination and the events leading up to it to learn from the experience and avoid similar issues in the future.

It’s important to note that the specifics of what happens when a contract is terminated can vary widely based on the type of contract, its terms, the jurisdiction’s laws, and the negotiations between the parties. Legal counsel and proper documentation are essential during the termination process to ensure that rights and obligations are upheld appropriately.

**Conclusion :** Contract termination marks the end of a contractual relationship and should be carried out in accordance with the terms specified in the agreement or applicable laws. It’s essential to ensure that all outstanding obligations, payments, or deliverables are completed before concluding the termination process. Clear communication between the parties involved is crucial to avoid potential disputes or legal consequences.

Additionally, parties should consider the possibility of any post-termination obligations or liabilities that may arise and address them adequately in the termination agreement. Finally, documenting the termination process with a written agreement or notice can provide legal protection and serve as a record of the parties’ intentions to terminate the contract.

The details also can be Viewed @ <https://youtu.be/yb8dr3EuX5E>

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# “ROLE OF SUPPLY CHAIN IN MAKING INDIA BEYOND USD 5 TRILLION ECONOMY BY 2025”

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(3rd PRIZE WINNERS - IIMM ARTICLE COMPETITION WRITING 2023)

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## Indian Economy-A brief

India is the fifth largest economy in the world as per World GDP Ranking 2023 list with United States of America, China, Japan, Germany economies ahead of it. India has been able to maintain its fifth position, lead over United Kingdom with growing domestic demand, strength of macroeconomic fundamentals, high saving rates and commendable fiscal discipline and is expected to grow at a rate of 6.5% in 2023-24. With a population over 1 billion and economic contributions mainly from agriculture-traditional as well as modern, handicraft industry, technology services, the rise of India as a highest population based economy is significant. GDP or “Gross Domestic Product” being the monetary value of all goods and services produced in a nation during a given year having a GDP of 3.4 trillion dollars indicates that the India is an emerging financially powerhouse growing at a stable and fast rate.

## Factors driving Indian Economic Growth

Indian government has taken various initiatives & bold economic initiatives to have an aggressive economic growth in the past decade. Some of the initiatives have resulted in need of gradual development of robust supply chain mechanisms. Propagating strong ecosystem of startups across the country has played a key role in the economic development initiatives of states and the country has more than 92000 recognized startups all across the country. The visionary leadership of Prime Minister Shri Narendra Modi, combined with his idea of Sabka Saath and Sabka Vikas along with India’s presidency of G-20 nations has made an enabling environment for showcasing potential and opportunities of various states to global platforms to attract mutually beneficial growth partnerships. The government initiatives to prioritize focus on technology growth, modernization, infrastructure development, space research, defense indigenization, educational reforms, health reforms, cashless transactions, transparency have propelled the Indian economic growth engine at faster pace like never before..

India is a diverse country in all aspects with unique characteristics and regional strengths that needs to be synchronized to overall national growth with the government playing a lead role in spreading the development phase to each nook and corner of the country. Connectivity of India by the various modes of transportation has changed and enabled the flow

pattern of people, goods, services and development to all corners of the country with growth indicators turning to upward trend. Focus on building strong and resilient communication networks, telecommunication and mobile networks have linked and unified the nation and the Indian economic juggernaut is moving at an incredible speed forward. Incumbent government focus and primary objective to boost economic growth and ensuring fiscal consolidation has been a key factor in India’s resilient economic growth after the Covid turmoil on most economies of the world. The conviction of the Indian leadership to supply the Covid vaccine to world while handling India’s Covid battle efficiently has given impetus to the world accepting Indian doctrines of growth leadership and foresight.

Indian government has made a clear plan to enable Indian growth focusing on balanced growth of all sectors. Initiatives like reoriented focus of agriculture growth from production-centric to income-centric is delivering gains to the agricultural dependent populace of the country. Enabling agricultural produce fair prices, storages etc is making the agricultural sector more growth oriented and many industries and supply networks have mushroomed out it enabling employment opportunities too. Income focused expansion of various sectors have led to development phase of various sectors with the new Industrial Policy 2018 is creating platforms of enabling growth and sustenance of a modern, sustainable, globally competitive and inclusive Indian Industry. The growth plans of Indian economy to reach a five trillion economy is based on focus of ,agriculture & allied services, manufacturing & services sector growth .

By year 2026 as per projections India is going to have world’s largest working age population and Indian government plans initiatives to address the need by Skill India, Make In India is enabling growth of a well-developed Indian human capital in form of engineers, researchers, actuaries, doctors, programmers and next generation global leaders which in turn is also springing economic growth.

Indian governments focus on nourishing digital revolution has already started returns in form of accelerated economic growth. With massive cross country fiber optics networks, Wifi enabling even in villages, development of ecommerce platforms, communication networks, technology up

gradations, speedy mobile networks has subscribed to a massive digital revolution in India. India being the world's second largest internet market, massive smartphone users and broadband users base the world of communication connectivity is branching massive services sector employment, nourishing the social strata all across the country with access to government services. With buildup of national biometric database like Aadhaar and links to medical records, bank accounts, government services, along with speed of services, employment potential, transparent and fast services being enabled digital India is becoming the bedrock of supply chain growth in India. With government focus on Institutions & infrastructure strengthening the economic growth is enabled by stable policy decisions and putting robust supply chain infrastructure the India economic potential of growth seems robust.

### Supply Chain Contributions to Economy



For the growth of any nation's economy a strong supply chain industry is an integral requirement. Effective supply chain system has many advantages as it improves business ease, reduces production costs, enhances consumer satisfaction, helps in balanced rural and urban growth distribution, increased market accessibility to customers, varied choices, etc. In a country like India spread across vast geographical, regional, political, language, religious, diversity the complexity of providing a strong supply chain necessitates huge and strong data-driven solution to build strong supply chain management. As we can see in the fig .1 of Supply Chain Management the cycle of flow across various partners of the chain needs to be concrete, dependable, unbreakable, well-oiled for the economy to grow to expected planned levels..

Fig.1 : Supply Chain Management

**Enhancing Supply Chain dependability :** Disruptions today due to the variety of crises (viz. economic, social, political, financial, ecological, natural) have made researchers' focus to the need to researching robustness and resilience function of supply chain to

sustain the crisis. During the COVID 19 crisis, with the outbreak of the pandemic, the majority of all global supply chains and very few supply chains only sustained. Again with the Ukraine- Russian war crises are brewing in many supply chains. Providing a mechanism for ensuring and enhancing Sustainable Supply Chain Survivability (SSCS) in black swan events like pandemic, war has become the challenging issue for the materials management function. Sourcing and procurement are key areas to focus in any company's efforts to drive to sustainability function. Businesses are now attempting to improve the system for sustainable supply chain (SSC).

Now global supply chains are dependent on the traditional, digital as well as non-digital modes of existence to expand their presence and to be competitive in the industry sector. Many Studies point out that the supply chain's inventory control characteristics gives the distributor access to actual inventory data, forecasting, and order specifics, which in turn helps the upstream distributor. Many areas like additional platforms provisions, associations, value-adding, co-creation, optimization techniques of distribution and pickup options, omni channel supply chains, balancing management capacity, order fulfillment, embracing digital applications, and crowd and capital management are all areas where the supply chains are focused. Hence investigation on the substantial aspects for the survival of SSC and maintaining the relations of buyer and supplier becomes an area of renewed interest. In the chaos induced conditions like the pandemic the companies which focused on market delivery resiliency, data-driven market delivery, stability, order fulfillment strategies, and supplier cooperation were successful in survival & growth. As consumers increasingly were forced or adopted contactless or online order solutions based on fear of transmission in public spaces during the Covid pandemic and as social distancing was the norm, the supply chains changes were based on new interfaces of the human-machine ratio, use of hybrid models and operational processes to create collaborative, integrated, and supply chain sustainability. During the pandemic the companies that neglected customer support faced the risk of losing business and ultimately extinction.

The main drivers for businesses to succeed and thrive in pre-and post-COVID-19 circumstances are viability, resiliency, order fulfillment ability just-in-time, stability of supply etc. For businesses to survive the areas of data analytics, teamwork, convergence, demand forecasting, and real-time intelligence needs to be strengthened and innovated. Engaging distributors and other stakeholders in an inclusive and accountable supply chain model development helps & promotes improve the long-term business progress for all in the supply chain. For infusing resiliency into supply chains it should be designed across proper demand

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scheduling, monitoring, distribution network, supplier meetings, supplier cooperation, and realistic & scientific predictions of the impact of economic and social conditions on business health. Increasingly in the unstable world the Risk management is getting significant focus in materials management teams right now. Building supply chain resilience will give businesses a competitive advantage in their sectorial field and make decision making more pragmatic. Supply change resilience concept seems simple but the various factors role in building resilience in supply chain is however complex. Supply chain resilience looks different depending on the industry in which the business operates and the stakeholders involved in the business operations.

#### **Focus on supply chain risk management strategy**

The following steps in general are needed to build a resilient supply chain:

- Identification of vulnerabilities & redundancies in supply chain
- Communication with supplier networks and agreements on expectations and metrics
- Identification of buffers of “safety stock” to avoid shortages
- Distributing physical inventory across multiple locations
- Supply chain network diversification
- Investment & Scaling right technology solutions to build & to measure, monitor, and optimise supply chain resilience.

#### **Risk & Resilience management.**

Identifying vulnerabilities in supply chain is vital and significant in understanding the value chain. Vulnerabilities can be different like a lack of transparency traceability & visibility of business supply chains, relying on suppliers from economies or business where pricing is dependent on trade wars. Supply chain are also vulnerable if digitization, ERP packages and artificial intelligence (AI) like tools are not incorporated. Supply chains also lack resilience if too much relying is placed on a particular supplier or distributor only. Risk assessment studies to understand the most significant vulnerabilities & tolerable redundancies in the supply chain will help build resilience and mitigate supply chain risk. Supply chain resilience also depends on relationships with suppliers & communication connectivity is a significant aspect needed to be focussed at all times to reduce significant risk. Anticipation of demand is a critical factor in deciding stock positions. Distributing inventory also helps improve supply chain resilience perspective and also helps in alternatives scouting in times of chaos in a particular area. Diversifying the entire supply chain

network, ensuring that procurement is multi sourced, near- shoring is viable & multiple carriers are used in logistics & transportation. Technology is the foundation to build resilience like having access to real-time which helps analyze suppliers performance against agreed metrics and standards, sustainability and product lead times. Technology also helps in giving effective “early warning system” for governance bottlenecks and also helps review partner ecosystem to understand the SWOT within the existing supply chain. Risk and resilience Management in building Supply Chain Sustainability is going to be a real challenge of emerging times.

#### **Supply Chain Role in making Indian a Five trillion dollar economy**

Covid -19 pandemic had hit the Indian Economy hard as the economy contracted 6.6% in fiscal 2021 staging a mild recovery in fiscal 2022, when it grew 8.7%. The covid impact was varied across the states and analysis of pandemic impact on the macroeconomic landscape, viz., growth, inflation and fiscal health across highlights that Agriculture did cushion the pandemic’s impact on growth across states and hence the focus on agriculture and allied services is of utmost importance to Indian economic growth. It was seen that sharp rise of Covid did mirrored in rising inflation hence management of inflation control by strict financial discipline is one of the factors for stable growth impetus.

As seen that the pandemic related inflationary impact & rising input costs and supply chain disruptions amid rising demand and a tight labour market will yield upward pressure on inflation hence the strategy of government to ease inflationary pressures, increasing employment opportunities by Skill India, Entrepreneurship development startups, MSME buildups etc will be strategic in giving necessary strength of Indian economy to march ahead. Political alliances to build robustness of Supply Chain of fuel to India in the war background, Presidency of G-20

nations are clearly insulating Indian economy from facing tumults of recession prone world economic predictions.

Government Plan to invest substantially in Infrastructure based on National Infrastructure Pipeline (NIP) integrating with the Gati-Shakti master plan will help realize benefits of inter- sectoral linkages of infrastructure and strengthening of Supply chain Management in India and will give the necessary boost to economic growth. Indian economy is expected to normalize unlike other economies in FY 2023 but would have to address emerging global oil price shock fluctuations along with an accentuation of supply-side bottlenecks. Recent geopolitical developments may also play a role in supply chain wreckages hence India is diplomatically giving lead to ensure non-breakage of supply chain networks leveraging it’s current economic



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and political strength for enabling stable and sustained Indian growth.

The combination of stable political environment and significant government investments in infrastructure and digitalization in supply chain management are fostering a positive environment for economic growth. Supply chains are also being transformed into flexible, granular, and accurate systems with the new developments of digital world like AI, big data, analytics etc. Real time end-to-end transparency and enhanced automation of manufacturing and delivery processes are enabling tremendous growth of e-commerce platforms. Customers now expect shorter delivery times and increased service levels, highlighting need to adopt newer digital supply chain technologies. E-commerce provides strong impetus for consumption growth across the country and the demand market is ensured enabling massive economic transformations to meet the needs. Advent and implementation of GST Network has enabled tracking and transparency in growth of economic activity. Forecasting demand, optimized inventory and minimized right number of the right items at wholesale and retail points stockings, enhanced service levels, predictive shipping details with data analytics will improve supply chain robustness. With internet penetration the reach of effective supply networks will increase gross merchandise movement across India and boost e-commerce which will help developments of opportunities to small manufacturers and logistics players. India's economic growth is in the process of successful withering of pandemic-induced contraction of the global output, the Russian-Ukraine conflict leading to a worldwide surge in inflation based on the strength of developed supply chain robustness. Indian economic growth is propelled by increased private consumption and capex allocation by government to substitute imports thereby growth of Make

in India generating employment avenues too. India's ability to vaccinate the vast Indian population during Covid times is another example of need of a robust supply chain mechanism for sustenance during critical times.

**Conclusion :** The scale of disruption caused by Covid Pandemic along with recovery lag in major economies of world are evident, but Indian economic growth in a way being kept a bit insulated due to robust financial policy discipline and also the presence of massive local market demand and supply loops, the economic growth of Indian economy to a 5 trillion dollar economy is quite a normal sequence. The sudden shrinkage of job employment by the major economy industries in the current scenarios is changing the landscape of human capital availability in India too. With current focus on shift towards localization, digitization of economy, streamlining of logistics by infrastructure development, stable governance, cash conservation, building supply

chain resilience and innovation only will help transform the Indian businesses to tread a new path in this uncertain environment. With missions support of AtmaNirbhar Bharat, economic packages generating employment provision measures under Pradhan Mantri Garib Kalyan Rojgar Abhiyaan and increased allocation under MGNREGS, credit guarantee and equity infusion-based relief measures for MSMEs and NBFCs and regulatory and compliance measures are resurging the economy.

Along with its new PSU policy, deregulation in agricultural sector, packages for MSMEs, commercialization of coal mining sector, increased higher FDI limits in defense, space sector, development of Industrial Land/ Land Bank, improved Industrial Information System, Funding scheme for building social infrastructure, changed power tariff policy and incentivizing States to undertake sector reforms is transforming the business and economic landscape. Holistic approach to strengthen healthcare with focus on three areas- Preventive, Curative, and Wellbeing, with National Health Mission, Mission Poshan 2.0, Universal Coverage of Water Supply, Urban Swachh Bharat Mission 2.0, Clean Air, Scrapping policy, etc. is visionary changes mooted by India. Reinvigorating Human Capital with qualitative strengthening of schools colleges under National Education Policy is improving human capital not only for the country but for the world. Indian government positive and long term vision in sharing Covid vaccines with many countries helped gain strength not only Indian leadership across the world but also strengthened the logistic support chain to Indian businesses from world economies. Indian economic growth focus on Food & Agriculture, Telecommunication sector, Infrastructure & transportation sector, pharmaceutical sector, energy sector, IT sector is creating demand and supply scenarios of scales and the economic business activity is booming along with catering to export needs from various affected economies of world helping India grow at a fast pace. Building a strong, steady business oriented professional climate with polity decisions that strengthens and ensures supply chain stability even at happenings of global shaking events is also nurturing growth and India seems all set to reach above the targeted 5 trillion dollar economy. Minimum Government and Maximum Governance policy pursued by the Indian government is all set to make Indian economy jump by leaps to the top of world economies.

Note :

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- *The article is original in nature and authored by the authors.*

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# SUPPLY CHAIN FOR MONEY!

- WHY NOT -

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**M**y subject may disturb - or even shock - many of our industry professionals.

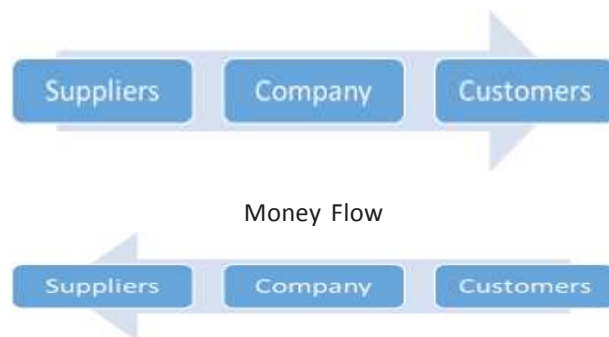
We have often talked, read and discussed about the Supply Chain or Value Chain concept for various industry resources – namely material, manpower, machine. Although money is also one of the foremost important industry resource; but we rarely talk and discuss and debate about the Flow of Funds.

We often take for granted the Assured and Confirmed availability and flow of funds/money.

In reality it is not the case.

My present article duels on the supply-chain like aspect for money too.

**Supply Chain Revisited :** We know that in any industry value chain; materials and/or services move from suppliers to company to customers. Similarly, the money moves from customers to company to suppliers.



We all would have discussed in-detail about the 1<sup>st</sup> link related to Materials Flow.

However, do we discuss in-detail about the 2<sup>nd</sup> link related to Money Flow too, with similar seriousness.

Let us discuss.

Because Money Flow impacts us in far more serious and varying ways.

**Money & Materials Flow :** We all should consider and accept that the way Materials Flow is driven by both internal and external factors; similar internal and external factors play their role in Money Flow too.

While assessing the supply lines for materials, we understand and accept that many of the factors are not entirely in direct control of any company.

We should and need to accept that similar level of uncertainties and external business environment also

impacts flow of money.

We all work on intensively to identify various factors impacting the supply lines for materials and services; we work on scenario generation for problem solving; we work on solutions to mitigate those problems; we coordinate intensively with supply chain partners to have early warning signs of unforeseen problems.

We should do all the above for Money Flow too.

**Delays :** What do we do when the scheduled delivery of material or services is delayed. Do we put penalty ! (very rarely). And the follow up conversations are although in firm and assertive tone.

However, when the payment gets delayed, the follow-ups are immediate and more intense. And the language and tone of conversations are more on the “abrasive and offensive” side.

Why is it that the conversations for material follow-ups are always in positive territory; while similar follow-ups for money is almost always negative.

Does this mean that material availability is less important than money availability.

Or does it mean that we ourselves give more importance to money vis a vis material/service.

For a business, both material/service and money are equally important; and both need to be given equal weightage.

**Disruptions:** Now, we shall analyze and compare the disruptions caused by material/service vis a vis money.

Both represent the resources required for the running of a business entity. And both are a must. Further, both are inter-dependent.

The relationship between material/service and money is same as that of chicken & egg. We can endlessly debate about who came first, chicken or egg. And similarly with which is required first - material or money.

If that is so; then why and how we are more concerned with disruptions on account of money and less due to disruptions on account of material.

**Penalty Clauses :** We all would have seen and noticed the “standard clauses” for late payment on almost every invoice for material/service. The clause shall be in fact pre-printed, either on the main page of the invoice or

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on the back/2<sup>nd</sup> page of the invoice. The clause shall state that the penalty for late payment shall be 2% per month or such similar condition.

However, have we ever noticed such a “standard clause” on Purchase Order for non/delayed delivery of material/service. In capital items case, there may be some such clause. And such a clause shall never be in pre-printed form way.

Why do we have such different treatment for penalty for material and for money.

**Business Impact :** Some of us may argue that once material/service is delivered, the supplier has already invested and/or incurred his money. In such a situation, the impact on the business of supplier is high. And, so supplier has every right to be “more assertive and forthcoming” while asking for payment.

However, the point is to be noted is that when a customer issues formal Purchase Order for material; then the customer also commits his own supporting resources for taking delivery of the material. Customer has engaged his resources (man, material, money and management) in the upstream and downstream value chain of his own company. The delayed delivery of material/service may result in customer’s machines going idle, manpower remaining non-productive, cancelled orders, etc.

In nutshell, the impact on customer’s business for delayed delivery of material/service is equally severe; if not less than that of supplier for delayed payment.

**Force Majure :** In a similar way, we would have noticed the Force Majure clause in any of the major contracts

for material or service. However, the Force Majure clause shall only identify and describe the condition for material/service and the back-up activities for such situations.

But such Force Majure clause shall never identify and describe the condition for non/delayed payment situations.

Is it that only material flow is foreseen to be disturbed, and not the money flow.

We need to understand and accept that if material flow can get impacted due to unforeseen situations, so is the case for money flow too.

**End-Note :**

Thus, we should and have to re-balance the equation between material and money.

If money flow is important, so is the material flow.

And, if supplier expects their customer to be accommodative, understanding and sensitive to their problems regarding delay in material supply.

So, the supplier should also be accommodative, understanding and sensitive towards the customer regarding their problems pertaining to delays in payment.

If the discussion and interaction between supplier and customer for material delay remains in positive territory. So, the discussion for payment delay also needs to remain in positive territory, rather than be abrasive and accusive.



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## HOW TO MAKE INDIAN SMES DIGITAL-READY

SRINIVAS PINGALI, KIRAN PEDADA  
AND S. ARUNACHALAM

**G**overnments, academia, and the media are guilty of paying less attention to SMEs than large companies or start-ups

The primary challenges faced by Indian SMEs are similar to those in other emerging markets.

The role of small and medium enterprises (SMEs) in nation-building is indisputable. In India, around 63.4 million SMEs employ around 12 million people, including a significant rural workforce. Additionally, SMEs are important in achieving the “Make in India” targets and have been the focus of recent government policies. However, SMEs often suffer from neglect and

fall victim to the “middle-child syndrome.” Governments, academia, and the media are guilty of paying less attention to SMEs than large companies or start-ups.

To address this critical issue, we studied over 350 SME owners to determine their top challenges and how they leveraged digital tools to transform and remain competitive in the fast-changing business landscape. Unsurprisingly, the primary challenges faced by Indian SMEs were similar to those in other emerging markets, including financial stress, lack of growth, inability to attract talent, global competition, and challenges in navigating the digital landscape.

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Many of these challenges are interconnected, and a low level of digital preparedness was a key reason for the inability of Indian SMEs to be future-ready. To enable SMEs to become digitally ready, we developed the concept of “Digital Readiness.” The study proposes three key elements of digital readiness. The first driver, technology sensemaking, is how SMEs become aware of digital transformation and digital technologies. The second driver, agility, is how quickly SMEs can react to the information and adapt their mindset based on this information. The third factor, technology implementation, is how ready and skilled SMEs are to implement these changes. Additionally, it identified several factors contributing to SMEs’ digital readiness, including leadership, strategic focus, resource availability, and customer-related, and market-related factors.

It provides several managerial implications for the digital transformation of SMEs, as shown in the graph below.

**Implications for SMEs :** First, the significant role that leadership factors play in the digital empowerment of SMEs. It suggests that SMEs led by millennials are more digitally ready and can adopt emerging digital technologies more quickly. Therefore, entrusting the reins to the next generation can help SMEs accelerate their transformation.

Second, to achieve digital enablement, SMEs should identify data sources and implement systems of records (e.g., ERP) and systems of engagement (e.g., customer portals), with a dual focus on enhancing efficiencies and providing better customer value. Since financial flexibility is a crucial driver for the digital readiness of SMEs, they should prioritise investments that increase cost savings that can support digital rollouts.

Third, it demonstrates their strategic priorities drive the digital readiness of SMEs. SMEs that target millennial customers and rural markets have been quicker at rolling out digital investments. Additionally, customer readiness to use digital technologies is another important driver, especially since most SMEs focus on other SME business customers. Therefore, SMEs should identify user-friendly technologies that offer personalised experiences to their customers.

**Implications for Digital Vendors :** The study offers important insights for digital vendors. First, many vendors have struggled to engage SME decision-makers who fail to appreciate the criticality and value of digital investments. It indicates digital vendors could initially focus on engaging with small firms led by millennials, who are more likely to understand and embrace emerging digital technologies.

Second, it highlights the importance of digital technologies that support operational efficiencies, as the business case of these are more obvious. To boost adoption, digital vendors could provide financing options, as small firms are challenged by financial constraints.

Third, vendors could prioritise digital offerings that cater to their expansion into rural markets. These technologies should be low-cost and adaptable to markets with limited telecom networks. Finally, digital vendors should support small firms with change management skills and provide training for their legacy employees to enable a smooth transition to digital technologies.

**Implications for Policy Makers :** Government and financial institutions have important roles in ensuring SMEs are prepared for the digital era. First, ready for digital change, SMEs are seeking knowledge and implementation partners. Policymakers need to design and provide an ecosystem that will support such transformation. Second, institutions should provide training programs and incentives in areas such as quality management and certification to help SMEs enhance their digital capabilities. Third, one of the most important determinants of digital readiness is financial flexibility.

Financial institutions should provide financial aid, including low-cost loans, to support and increase the digital readiness of SMEs. Fourth, they could provide subsidies to SMEs that aim to expand into rural areas. Finally, the importance of improved clarity on government policies to enhance SMEs’ digital readiness significantly. Therefore, government institutions should roll out guidelines for small firms-related policies, ensure transparency, and crack down on speed money among officials dealing with small and medium enterprises.

SMEs have the potential to undergo a successful digital transformation with the right inputs and resources. Also, SMEs that have embarked on their digital transformation journey have been more successful in the fast-changing business landscape.

(Srinivas Pingali is Professor of Practice, Mahindra University School of Management; Kiran Pedada is Assistant Professor and F. Ross. Johnson Fellow, Asper School of Business, University of Manitoba; S. Arunachalam is Assistant Professor, Rawls College of Business, Texas Tech University; and Sumanta Singha is Assistant Professor, Rawls College of Business, Texas Tech University)

**Source: Fortune India**



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# INDIA'S SUPPLY CHAIN PUSH

*Start-ups have a big role to play in this story*

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India's manufacturing PMI in May hit a 31-month high while China's manufacturing PMI fell to a five-month low.

It is not just the domestic demand that is pushing India's manufacturing PMI up, but a strong push from international partnerships.

A recent Global Operations Benchmarking survey revealed that 87.9 per cent of the CEOs surveyed are looking at India as their primary alternative to China.

The current geopolitical situation has created a unique opportunity for India to emerge as a major player in the global supply chain and leverage the 'China plus one' strategy.

Despite the challenges posed by the pandemic, India has shown resilience and has emerged as a preferred destination for global companies looking to diversify their supply chains.

With India reaching its best-ever rank at 38 in the World Bank's Logistics Performance Index, it is poised to be a big player in the global supply chain. There are a few factors that contribute its current position and future growth:

## **Government initiatives**

Production Linked Incentive (PLI) schemes were introduced in sectors such as automobile, electronics, medical devices etc. to not only incentivise multinational enterprises to set up production in India but also incentivise domestic manufacturers to expand their manufacturing output and global exports.

Other important initiatives including the PM Gati Shakti Plan, the National Logistics Policy, etc. aim to create world-class infrastructure and improve capabilities to lower the cost of logistics from the current value of 13-14 per cent of GDP to less than 8 per cent.

To be a role model in managing complex supply chains, a country must create an ecosystem that fosters collaboration, innovation, and entrepreneurship and encourages the growth and development of all stakeholders. Especially, MSMEs need to be empowered to supply products and services available at the last-

mile to the diverse population of the country.

Unified Payments Interface (UPI) has nudged even the street hawkers to adopt digital payments. Open Network for Digital Commerce (ONDC) is another initiative to bring more e-commerce power to small-scale firms providing various goods and services.

## **Supply chain start-ups**

To solve some of the intricate supply chain problems, several supply chain start-ups have mushroomed. While there are many e-commerce start-ups that cater to consumer needs, some supply chain start-ups such as Moglix and Udaan are helping solve some of the upstream supply chain problems.

Agricultural supply chain start-ups such as DeHaat and Ninjacart are using tech-based solutions to solve the 'farm-to-fork' problems by eliminating the middlemen and providing fair and just payment to farmers. Logistics start-ups such as Rivigo and BlackBuck are making logistics more humane using the relay logistics model.

Robotics start-ups such as GreyOrange and Unbox Robotics are providing enterprise solutions with AI and cloud-enabled warehouse automation robots.

Although the policy push to make India a manufacturing hub with efficient logistics is undoubtedly important, it is equally crucial that we focus on leveraging our inherent strengths to offer tailored solutions to the challenges that the global supply chain industry faces.

India has a track record of delivering innovative solutions which have proven to be successful even at a large scale. By building on our strengths and expertise, we can continue to offer bespoke technical solutions that meet the unique demands of the ever-evolving global supply chain industry.

This will not only help India fortify its position as a key player in the supply chain industry but also pave the way for sustainable growth and development.

Source: businessline





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# CHARTING INDIA'S PATH TO SUPPLY CHAIN EXCELLENCE: CHALLENGES, OPPORTUNITIES, AND STRATEGIES

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**C**XOToday has engaged in an exclusive interview with Nick Vyas, Executive Director of the USC Marshall Center for Global Supply Chain Management

**Q1.** What is India's current standing in global trade growth, and how can it capitalize on its strengths, particularly by actively involving the MSME (Micro, Small & Medium Enterprises) sector?

India has surpassed China as the world's most populous country and its growth is critical for the global economy. For the next several decades, India will be a substantial contributor to the global workforce. By 2030, its GDP is predicted to reach 7.3 trillion USD. With this rate of economic growth, India's GDP will surpass that of Japan by 2030, making India the Asia-Pacific region's second-largest economy. Over the past ten years, India has demonstrated impressive growth in global trade, particularly in sectors like information technology, pharmaceuticals, textiles, chemicals, and automotive. The steady rise of foreign direct investment inflows into India during the last decade underlines the Indian economy's high long-term growth prospects. But challenges like regulatory constraints, infrastructural inadequacies, and market access issues have limited the overall potential. To overcome these hurdles, the MSME sector, which contributes to 45% of total industrial employment, 50% of exports, and 95% of all industrial units, could play a pivotal role.

Implementing these strategies effectively can unlock a new growth phase for India in global trade:

- Encourage MSMEs to embrace digitization and technology upgrades. This can increase productivity, lower operational costs, and improve quality, allowing them to compete more successfully on a global scale.
- Reduce regulatory barriers, simplify the tax system, and streamline import and export procedures to create a favourable business environment.
- Improve MSMEs' access to financial services. Collaboration between the government and financial organizations could help to solve the credit availability problem.
- Provide skill development programs and training to improve the capabilities of the workers in the MSME sector.
- Encourage innovation by encouraging and motivating MSMEs to create one-of-a-kind products and services.
- Ensure improved market access through favourable trade agreements with other countries and assist MSMEs in establishing connections with foreign customers and investors.

**Q2.** What are the key strategies and policies that India can implement to effectively maximize its position in the global supply chain, with a

specific emphasis on empowering and integrating MSMEs? To strengthen India's position in the global supply chain and empower the MSME sector even more, the country should consider pursuing the following initiatives and policies:

- **Strengthening Infrastructure:** Infrastructure is the foundation of a well-functioning supply chain. Increased investments in road, rail, port, and digital infrastructure can boost India's desirability as a supply chain partner. For MSMEs to participate in the global digital economy, a strong digital infrastructure is essential. Infrastructure development can enhance India's Logistics Performance Index (LPI), a benchmarking tool created by the World Bank for identifying trade logistics obstacles and opportunities.
- **Enhancing Regulatory Framework:** Easing regulatory complexities, streamlining bureaucratic processes, and improving the overall business environment can help Indian and international enterprises run more smoothly. This is important for MSMEs that are having difficulty navigating the regulatory landscape. With an enhanced regulatory environment, the international community will experience a more inviting business climate.
- **Promoting Digital Transformation:** Encouraging digital transformation within the MSME sector can be transformative. Providing technical training, access to digital tools and technologies, and fostering digital literacy and innovation can equip these small and medium enterprises for participation in global supply chains.

- **Developing Human Capital:** Investing in supply chain management education and training might result in a more competitive workforce. This investment is particularly important for the MSME sector. Partnerships with academic institutions, both domestically and globally, could be beneficial in this effort. High-level programs, like USC's M.S. in GSCM, serve as a good model for such initiatives. Furthermore, beyond focusing on higher education, some of the ongoing initiatives from the Ministry of Skill Development and Entrepreneurship can synergize with USC Kendrick Global Supply Chain Institute to offer certifications for life-long learning and professional development opportunities.
- **Fostering Innovation and Entrepreneurship:** Encouraging innovation and entrepreneurship, particularly within the MSME sector, can lead to unique solutions for supply chain challenges. This could involve funding support, facilitating incubation programs, and creating a supportive regulatory environment for startups.
- **Improving Access to Finance:** Streamlining access to finance for MSMEs can significantly aid their growth. This could involve simplifying lending norms,

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encouraging venture capital investments, and offering financial incentives for businesses that successfully integrate into global supply chains.

**Building Resilience:** Given recent global supply chain disruptions, building resilience is a strategic goal. This process can be supported by promoting supply chain risk management strategies, encouraging diversification, and building crisis management capabilities.

**Promoting Sustainability:** With global supply chains increasingly focusing on sustainability, India must ensure the sustainability of its supply chains. This includes supporting ecologically beneficial behaviours, encouraging the use of renewable energy, and enforcing stringent environmental regulations. When implemented effectively, these strategies could help India boost its standing on global indices such as the LPI and the World Bank's Doing Business ranking; not only would this signal a more attractive and conducive business environment, but it would also enable India's MSMEs to effectively integrate into global supply chains, thereby driving India's growth and prominence in the global supply chain ecosystem.

**Q3. How has the post-pandemic supply chain crisis reshaped the priorities and strategies of industries in terms of supply chain management? Businesses all throughout the world have encountered significant challenges because of the post-pandemic supply chain crisis. Lockdowns, transit restrictions, labour shortages, and increased demand for specific goods and services, among other issues, have created economic interruptions. These difficulties have had a significant impact on the supply chain management priorities and strategies of various sectors. The global shift in supply chain strategy because of the post-pandemic crisis presents numerous opportunities for India. Now, let us concentrate on growth enablers, which would have a significant impact on all economic sectors and help fuel the growth engine.**

- Foreign Investment Attraction:** India, with its sizable labour pool and expanding economy, might provide an attractive option to other manufacturing hubs as businesses diversify their supplier bases to lower risk, particularly for sectors like textiles, pharmaceuticals, auto components, and electronics.
- Regionalization and Nearshoring Opportunities:** Regionalization trends may prompt more South Asian and Middle Eastern companies to consider India a closer and more viable supply source. Additionally, this could stimulate intra-regional trade and strengthen regional supply chains.
- Digital Adoption and Innovation:** India's IT sector is renowned worldwide. As global supply chains become more digital, India can provide innovative AI, blockchain, and IoT solutions. This could increase service exports and position India as a leader in digital supply chain management.
- Sustainable and Ethical Practices:** With the increasing global emphasis on sustainability, India's traditional and environmentally friendly practices in textiles and handicrafts can gain more value. Moreover, it compels Indian industries to adopt more sustainable and ethical business practices, enhancing global competitiveness.
- Inventory Management:** Indian companies can take advantage of the shift away from lean inventory models. By offering reliable and flexible production capabilities, they can support global companies

looking to maintain safety stocks or buffer inventories.

- Collaboration Opportunities:** Increased collaboration in global supply chains could allow Indian businesses to form strategic partnerships with foreign companies, opening new markets and gaining access to advanced technologies and practices. Again, to fully capitalize on these opportunities, India must continue to strengthen its infrastructure and business climate, cut down on red tape, invest in talent development, and guarantee ease of doing business. Supporting digital transformation and sustainability practices in the MSME sector may also be essential for taking advantage of these shifting dynamics in the global supply chain.

**Q4. How does the MSME sector contribute to India's supply chain, and what potential does it hold for fostering inclusive growth and driving innovation within the industry? Removing friction from various segments of the supply chain is critical to redefining post-pandemic supply chain management techniques. Here is how addressing these frictions can benefit industries:**

- Regulatory Burdens:** The flow of products and services might be hampered by complex and restrictive restrictions. To enable better trade and supply chain operations, industries and governments may collaborate to reduce rules, eliminate needless bureaucracy, and adopt harmonized standards.
- Corruption Mitigation:** Corruption in the supply chain can result in inefficiencies, higher costs, and lower quality. Transparency and accountability measures, as well as anti-corruption regulations, can help to mitigate these risks.
- Information Sharing and Visibility:** Improved information exchange and data transparency can help organizations predict interruptions, enhance inventory management, and make informed decisions. Technologies such as IA, ML, IoT, and blockchain can be used to secure and communicate data among supply chain partners.
- Compliance and Quality Assurance:** Ensuring compliance with regulations and maintaining high-quality standards is critical. Industries may invest in rigorous quality control processes, certifications, and auditing to enhance product integrity and consumer confidence.
- Digital Transformation:** Embracing digitalization can help remove friction from manual processes and improve supply chain efficiency. Automated workflows, real-time tracking, and digital documentation can minimize delays and errors.
- Supplier Collaboration:** Collaborative relationships with suppliers can foster open communication and trust, reducing the likelihood of disruptions caused by non-compliant or unreliable partners.
- Risk Management and Contingency Planning:** Industries can develop comprehensive risk management strategies that address potential issues arising from regulatory changes, compliance failures, or quality-related challenges. Contingency plans can help businesses respond quickly to unforeseen events.
- Training and Education:** Industries may invest in training programs for their supply chain workforce to improve knowledge and understanding of compliance requirements, quality standards, and ethical practices.
- Sustainable and Ethical Sourcing:** Addressing regulatory and compliance issues can contribute to more sustainable and ethical sourcing practices, promoting social responsibility and environmental stewardship throughout

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the supply chain. By resolving these frictions, industries may build more efficient, transparent, and resilient supply chains that are better prepared to face future difficulties. Furthermore, concentrating on reducing barriers and boosting compliance and quality can improve industries' overall reputation and reliability in the eyes of consumers and stakeholders. Q5. What factors are driving the inspiring trend of Indian students embracing globalization in their pursuit of supply chain studies? How does the exposure to diverse supply chain ecosystems through international education contribute to India's readiness to actively participate in the global supply chain? The University of Southern California's (USC) Master of Science in Global Supply Chain Management (MS GSCM) program has made significant contributions to the field of global supply chains. The program, which has been ranked number one by U.S. News & World Report for the last five years, has been shaping the future leaders of supply chain management, including many students from India. The USC MS GSCM program offers a comprehensive, end-to-end curriculum that covers all aspects of supply chain management. The curriculum is aimed to provide a thorough understanding of the intricacies and problems of global supply chains through a combination of theoretical knowledge and practical experience. One of the program's distinguishing characteristics is its focus on spearheading live projects with top industry partners. This helps students to apply what they have learned in the classroom to real-world business operations, honing their critical thinking abilities and comprehension of practical challenges. Our MS GSCM program is categorized as a STEM degree. This is a significant benefit for international students, particularly those from India because it allows them to work in the United States for up to three years after graduation under the Optional Practical Training (OPT) extension. This extended term allows for a more in-depth immersion in the US supply chain ecosystem, allowing students to gain significant professional experience and in-depth knowledge of the operations, challenges, and innovations prevalent in one of the world's most advanced supply chain settings. Given the fast-paced nature of supply chain management, which is fueled by variables such as technology, data analytics, and globalization, this practical job experience is priceless. It provides students with firsthand experience with cutting-edge technologies, best practices, and the skills to handle large-scale supply chains and their complexities. They will also get the opportunity to engage with various teams, learn the complexities of cross-cultural communication, and develop global professional networks, all of which are critical skills in today's interconnected business world. When these students return to India, they bring with them a wealth of information, advanced skill sets, and global perspectives gained throughout their studies and professional experience in the United States. They may use this knowledge to capitalize on opportunities in India's expanding supply chain sector, dramatically shortening the industry's learning curve. By efficiently sharing acquired best practices, innovative methodologies, and practical experiences within India's local supply chain

landscape, these students improve India's supply chain competitiveness. They operate as a vital link between India's regional supply chain initiatives and global best practices, actively contributing to India's readiness to succeed in the global supply chain ecosystem. Another unique value of the USC MS GSCM program is the Industry Network Connect event (INC). INC supports students to engage and learn from industry professionals, gaining valuable insights, understanding trends, and developing key relationships that can lead to exciting career opportunities. Finally, the program involves experiential trips to global trading hotspots such as Singapore and Vietnam. Students' perspectives on international trade and supply chains are broadened by these educational travels, which expose them to a variety of corporate environments, methods, and cultures. They also offer a thorough awareness of these countries' position in the global supply chain, as well as their unique challenges and innovative solutions. Q6. Could you provide insights into the USC Marshall GSCM (Global Supply Chain Management) program? How does it stay at the forefront of the industry, offering the latest trends and best practices in global supply chain management? Certainly! As the Founding Executive Director of USC Marshall's MS Global Supply Chain Management (GSCM) program and the Kendrick GSCM Institute, I am excited to share insights on how we have developed and continue to sustain our industry leadership. Through Networks, Education, and Advanced Research (NEAR), we hoped to connect the world. When we launched the MS GSCM program, we understood the critical importance of combining academic instruction with real-world experience. While our top research institution can provide challenging classroom instruction, we believe that a strong industry connection that provides practical experience for the remainder of the week is essential. This conviction has influenced our program to emphasize academic knowledge while also providing our students with an industry-oriented learning experience. The generous endowment that enabled the establishment of the Kendrick GSCM Institute solidified our commitment to providing industry-relevant education. The Institute is a strong platform for research, innovation, and global outreach. Our professors are recognized experts in their domains, and they interact with industry partners and deliver world-class research to keep up with the latest trends and best practices in global supply chain management. These findings are integrated into our curriculum, ensuring that students acquire the most current and relevant information. Our vision has been a significant aspect in driving the success of our program. We recognize the value of worldwide exposure in today's interconnected world, particularly in supply chain management. We have been working hard to broaden our global influence, particularly in emerging markets such as India. These factors contribute to the ability of USC Marshall's GSCM program to keep ahead of industry trends. We are deeply committed to preserving this momentum by assessing and upgrading our curriculum on a regular basis, developing our industry partnerships, and expanding our global reach. I am glad that our students have the knowledge and abilities

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needed to navigate and lead in the complicated world of global supply chain management. Q7. Could you provide some insights into the upcoming Global Supply Chain Summit at USC Marshall and its significance in fostering dialogue and collaboration among industry leaders, academics, and students? How does this summit contribute to shaping the future of global supply chain management and addressing the challenges of today's interconnected business landscape? This year's Annual Global Supply Chain Excellence Summit theme, "Reprogramming Global Supply Chain DNA: Driving Strategies, Technologies, and Human Capital in a New World Disorder", is both timely and significant. Over five hundred industry professionals gather to discuss best practices and micro/macro trends in global commerce and supply chains. It represents the tremendous transformations and uncertainties that are transforming the global supply chain landscape and highlights the importance of new strategies, technology, and human capital development. I have written about "The New World Disorder," which implies that global supply systems are becoming more complicated and unpredictable. From the COVID-19 pandemic to geopolitical conflicts and the ramifications of climate change, these complexities necessitate rethinking and reprogramming existing supply chain tactics. At the 11th Summit, top industry executives and academics will explore novel solutions to improve supply chain resilience, agility, and sustainability.

Attendees learn strategic initiatives, exchange perspectives, and help shape the future of global supply chains. The technology's fast development is significantly impacting supply chains. AI, blockchain, and IoT are revolutionizing supply chain operations, providing more efficiency, transparency, and flexibility. The 11th Summit will delve into these technological developments, investigating how a triple-bottom-line mindset may be used to reprogram the global supply chain DNA and navigate the new world disorder. The 11th Summit will yet again emphasize the importance of supply chain management education and skill development in nurturing a capable workforce. This year's powerhouse panel sessions will help students understand the growing demands of the industry, encourage them to innovate, and become well-equipped future leaders in the global supply chain sector. Finally, our incoming cohort of 130+ students from around the world will engage in intellectually stimulating conversations and network with industry experts throughout their first week of orientation. Q8. Lastly, what are some of the key challenges and opportunities that lie ahead for India as it continues its journey toward becoming a key player in the supply chain industry? With the wind in its sails, India continues its journey toward becoming a prominent player in the global supply chain industry. In less than a decade, the country is becoming the world's third-largest economy, a tribute to its tremendous economic growth and vast potential. Global trust in India's potential to play a key role in the global supply chain ecosystem is at an all-time high. However, some of the following issues must be addressed:

- Infrastructure: Despite considerable progress, the need

for additional logistics and transportation infrastructure development remains difficult. Investing in road, rail, and port infrastructure, as well as modernizing customs and import-export procedures, are crucial if India is to fully realize its potential.

- Regulatory Environment: The complexity of regulations and bureaucratic hurdles can still slow progress. Continued reforms to simplify business regulations and create a more conducive environment are essential to attract domestic and international businesses.

- Technology Adoption: While India has a burgeoning tech industry, applying advanced technologies like AI, IoT, and blockchain in supply chain operations remains limited, especially in the MSME sector. Enhancing technical skills and infrastructure is crucial.
- Sustainability and Ethical Challenges: In an era where businesses worldwide are prioritizing sustainability and ethical practices, Indian companies need to ensure their supply chains are compliant with these standards, which may require concerted efforts and investments. While I discussed the challenges, let us highlight some of the opportunities:
- Diversification of Supply Chains: As global businesses seek to diversify their supply chains following the disruptions caused by the pandemic, India is positioned as a compelling alternative. Its burgeoning workforce, fast-growing economy, and strategic geographic location make it an attractive hub for businesses looking to mitigate supply chain risks.

- Digital Transformation: With its robust IT and digital services sector, India is well-placed to drive the digital transformation of supply chains, providing innovative solutions using AI, IoT, blockchain, and more.
- Rising Domestic Consumption: With its rapidly growing middle class and increased consumption levels, India is evolving into a significant end market in global supply chains. This trend extends beyond the traditional view of India as merely a source of inexpensive labour or raw materials.
- Government Initiatives: Government initiatives, such as 'Make in India' and 'Atmanirbhar Bharat' (Self-Reliant India), can bolster India's position in global supply chains, highlighting the country's manufacturing capabilities and fostering self-sufficiency.
- Robust Economic Growth: India's projected ascendance to the position of the third-largest economy increases global confidence and optimism. This economic momentum is a huge opportunity for India to assert its role in the global supply chain landscape. While there are limitations, India has numerous opportunities to play a key role in global supply chains. India is well-positioned to become a strong player in the global supply chain industry with strategic planning, ongoing investment, and a focus on maximizing its capabilities. I believe that with sustained growth, strong global confidence, and continued focus on major initiatives, India is poised to become the world's third-largest economy in the coming decades and establish itself as a significant global power beyond the service sector.

Source: [www.cxotoday.com](http://www.cxotoday.com)





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# FREIGHT IN FOCUS: THE ART OF PRECISE TRACKING AND MANAGEMENT

*Consignment tracking transforms logistics with real-time visibility, security and operational efficiency, thus overcoming challenges.*

**PRAJAKTA KARNIK**

Logistics is one of the most complex industries and yet plays a pivotal role in the economic growth of any country. Not just that, having a robust logistics and supply chain mechanism in place is essential for the success of other industries. In the last few years, the world of logistics and transportation has undergone a significant transformation, largely driven by technological advancements. One of the areas which is constantly evolving is tracking of consignments right from the source to the destination.

## Why is tracking important?

In today's uncertain global economic scenario where disruptions have become the order of the day, it is important to have complete visibility of the entire supply chain. With the rise of global trade and the increasing complexity of supply chains, it is essential for businesses to have visibility into their operations to ensure that they are able to deliver goods and services to their customers in a timely and efficient manner. This can be achieved through tracking of the consignment right from the source till it reaches the destination.

According to industry experts, it is critical for a supply chain manager to know about the shipment's location, the estimated time of arrival (ETA), and any possible disruption or current and past status of the shipment to manage and control their fleet, orders, and goods. Thus, tracking is essential as it provides real-time visibility into the movement of assets, ensuring their security and safety in potentially volatile regions. This can help them to identify bottlenecks or delays, and take corrective action to ensure that their operations are running smoothly.

Additionally, it aids in risk mitigation by allowing organisations to adjust routes and schedules in response to geopolitical developments, such as trade disputes or border closures, minimising potential disruptions and losses. For example, if a shipment is delayed at a port due to a customs issue, a business can use tracking information to quickly identify the problem and work with the relevant authorities to resolve it.

"Tracking is one of the most crucial aspects in the supply chain ecosystem. In the chemical industry, it becomes even important to have an efficient tracking mechanism

in place to avoid mishaps. We, at Indofill, use GPS tracking for our full truckload shipments, particularly for high-value goods moving between plants and warehouses. However, there's no central tracking system. We obtain tracking information from our third-party logistics providers (TPLs) or platforms. This data is crucial for ensuring shipment safety, managing incidents like accidents or pilferage, and providing real-time visibility to our sales teams when needed," Sandeep Baxla, Sr Vice President Supply Chain, Indofill, said.

**Advantages of tracking :** Tracking and tracing is a vital part of logistics and supply chain management. It helps businesses to ensure that their products are properly accounted for at every stage of the shipping process and can help reduce losses due to damage or theft. Here are a few advantages of tracking:

**Real-time visibility :** One of the primary advantages of consignment tracking is the unprecedented visibility it provides into the supply chain. Logistic companies can now monitor the exact location of shipments, the route taken, and estimated arrival times. This visibility allows for better planning, improved resource allocation, and efficient problem-solving in case of delays or disruptions.

"According to the report published by Forbes and KPMG International, lack of visibility across the extended supply chain is one of the biggest challenges for companies. Therefore, track and trace in logistics are essential to increase transparency across every step of the supply chain. The current technological advancements have enabled manufacturing sites, e-commerce businesses, and warehouses to track and trace shipments over their complete life cycle," JP Mishra, Country Manager India, Newland AIDC, said.

**Improved customer experience :** Consignment tracking has become an essential tool for enhancing customer experience. Real-time updates on shipment status enable companies to provide accurate delivery estimates, reducing customer anxiety and frustration. Customers can also proactively manage their inventory and distribution, leading to higher satisfaction levels.

"A robust tracking system instils trust – the bedrock of any lasting relationship. This trust ensures drivers, stakeholders, and customers are always on the same page, eliminating the guesswork and ensuring seamless

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operations. In a nutshell, tracking and tracing fortify the supply chain against disruptions, making it resilient, reliable, and ready for tomorrow's challenges," Nishith Rastogi, CEO and Founder, Locus said.

**Increased security :** Tracking technology has significantly increased the security of consignments. Companies can monitor shipments for potential theft or tampering, and the ability to pinpoint the exact location of goods helps in deterring theft and recovering stolen items. This added layer of security boosts confidence in the transportation of valuable or sensitive goods.

Besides, it also ensures safety of drivers carrying the goods from one location to another. "While everything boils down to cargo safety, it is important to provide vehicle safety and driver safety to ensure that the consignment safely reaches its destination. Initially, when the GPS was introduced, there was a resistance from the driver community. But later, as they realised the benefits of it, especially during any incident or calamity, it has been widely accepted. Thus, tracking not only helps in safety of consignment, but has improved the working conditions for drivers," Ramesh Kumar, an industry veteran who has been working for the welfare of the drivers said.

**Efficient resource management :** Tracking consignments facilitates optimisation of resources such as vehicles, labour, and fuel. Companies can analyse data collected from tracking systems to make informed decisions about route planning, load distribution, and maintenance schedules. This results in reduced operational costs and a more sustainable logistics operation.

"Tracking system has evolved from GPS to ultrahigh frequency systems, which is similar to FASTags. These devices are used for tracking and managing assets, inventory, or products. Operating within the UHF spectrum, typically around 860-960 MHz, these tags offer distinct advantages in asset tracking and inventory management. Due to their high-frequency range, UHF tags enable long-range reading, often up to several meters, making them exceptionally suited for applications where rapid and non-contact data capture is essential," Ravindran Natarajan, Former Director, Business Development, Trimble, said.

He further said that using UHF streamlines inventory checks, reduces errors, and expedites the unloading process. "In fleet management, UHF tags helps in tracking vehicles, optimising routes, and ensuring compliance with schedules and regulations. This technology enhances operational control, minimises idle time, and boosts fuel efficiency. This ultimately leads to cost savings, improved accuracy, and timely deliveries, benefiting both businesses and customers," Natarajan added.

**Proactive issue resolution :** Consignment tracking

allows companies to identify issues and bottlenecks in the supply chain in real-time. This proactive approach to problem-solving minimises disruptions and reduces the impact of unexpected events, such as weather-related delays or accidents.

"Staying informed about inventory levels throughout the supply chain strengthens inventory management and planning. With the help of track and trace, we can improve our inventory management and reduce the time it takes to locate goods and perform manual inventory checks. In this way, employees can perform other essential tasks," Rastogi added.

**Role of control towers in tracking:** Control towers are emerging as indispensable tools for 3PLs and businesses. Beyond tracking goods, they facilitate real-time inventory management, optimising stock levels and reducing carrying costs. Their predictive analytics capabilities foresee disruptions in the supply chain, allowing proactive measures to minimise risks.

Decision-makers can access comprehensive, up-to-the-minute data through these control towers, enabling quick, informed responses to issues like weather events or transportation bottlenecks. This agility enhances customer service and cost-efficiency. In an era where supply chain resilience is paramount, control towers are the linchpin, equipping 3PLs and businesses with the foresight and control needed to thrive in dynamic markets.

However, these control towers need to be integrated with various businesses such as warehousing, transportation – primary or secondary, distribution. "Control towers help in providing visibility to our customers about the movement of the inventory as well as the fleet. However, there are certain semi-automated processes which have to be aligned to a control tower which help in identifying the vehicle which has to be deployed to ensure optimum utilisation of the vehicle, route planning, road planning, etc.," Karan Vir Puri, CSO, ProConnect Supply Chain Solutions, said.

**Challenges in consignment tracking:** While tracking and tracing have many benefits, there are also several challenges that need to be addressed in order to fully realise their potential. Here are a few challenges:

**Cost :** One of the main challenges of using supply chain track and trace is the cost. This system requires a significant investment in hardware and software, which can be expensive for some businesses.

**Process delay :** Among the challenges in logistics, process delays are a prominent issue. These delays stem from tracking systems encountering errors or lag, disrupting operations and potentially affecting customer satisfaction and delivery schedules.

**Labelling constraints :** Another issue that the industry is currently grappling with is labelling constraints.

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Errors or constraints in labelling can lead to misidentification, shipment rerouting, and delays. Proper labelling is paramount for accurate tracking and streamlined operations, making it a standout concern in the realm of logistics challenges.

**Relative nature of supply chain vendors :** The relative nature of supply chain vendors is a distinctive challenge in logistics tracking. It arises from the diversity of vendors, each with unique tracking systems and data formats. This fragmentation can impede seamless tracking and necessitate complex integration efforts, making it a standout concern in the logistics industry.

**Data privacy and security :** With the increase in data collection, there is a growing concern about the privacy and security of consignment tracking data. Companies have to ensure that customer and shipment data is protected from potential breaches or misuse.

**Regulatory compliance :** Different regions and industries have specific regulations regarding the tracking of consignments, especially for hazardous or sensitive materials. Companies must stay up-to-date with these regulations to avoid legal issues and penalties.

**Need for technology improvements :** Even today, a large number of businesses depend on GPS system for tracking goods. This is largely because many businesses have made it mandatory for fleet owners/ operators to deploy only GPS-enabled vehicles. Small businesses, which have limited exposure to latest technologies, are relying on 3PLs or local transporters with minimal access to tracking.

According to a study by Here Technologies, the pandemic has exposed the vulnerabilities of manual interventions in the global supply chain. Yet, a significant number of Indian logistics firms surveyed are using asset tracking and shipment monitoring software in combination with manual inputs to track assets, shipment, and cargo.

Manual processes have a higher chance of creating gaps and vulnerabilities within supply chains, and this shows that a large number of companies still do not have a resilient infrastructure in place. Real-time and automated tracking solutions on the other hand provide opportunities to accelerate innovation and tackle disruptions promptly, it stated.

Given the growing uncertainties and introduction of newer technologies coming in, it is important that tracking and tracing evolves. Newer technologies such as IoT, AI, robotics, warehouse automation, and Blockchain are the top five most promising technologies that are boosting innovation in logistics.

According to experts, adopting advanced technologies such as Blockchain, Big Data, cloud computing, and digital twins can help transform the future of the Indian logistics sector.

“Using AI, businesses can proactively and continuously analyse logistics KPIs. When it comes to tracking consignments, AI empowers logistics stakeholders to accurately identify if a consignment will breach the committed SLA and also access auto-generated historical-data-powered corrective measures. This helps businesses safeguard customer experience, reduce the chances of logistics failures from occurring and ensure rapid resolution of logistics issues,” Soham Chokshi, CEO & Co-founder, Shippy, said.

He further stated that AI-powered route optimisation is critical to reducing logistics costs, especially in the middle and last mile. “It auto-allocates orders to riders and logistics partners based on business requirements like ‘most economical’ and ‘fastest.’ It ensures that more tasks are completed in a single journey without compromising SLA commitments. Then, using AI-driven territory and workforce optimisation, businesses can accurately determine the right mix of freelance and full-time couriers needed to achieve high levels of cost-efficiency without impacting the customer experience.”

Echoing similar views, V Rajesh Gowrinath , Senior Vice President – Sales, Gati, observed that tracking is a cornerstone of modern supply chains as it provides transparency, builds trust with customers, and streamlines our operations. “By monitoring shipments from pickup to delivery, we can swiftly address issues as they arise. We rely on technologies like GPS and transportation management systems (TMS) to boost efficiency and reduce costs. GPS enables precise tracking, while TMS optimises planning and execution across different transportation modes,” he said.

Gowrinath further stated that new technologies are helping in improving load planning and route optimisation and making the operations more efficient and intelligent. IoT and blockchain hold promise for the tracking industry in the future. With real-time information, security, and dependability in supply chain management, these technologies are ready to provide comprehensive solutions.

**Conclusion :** The logistics sector has been in the spotlight since the Covid-19 pandemic, and it is expected to grow significantly in the coming years. Consignment tracking has become a cornerstone of modern logistics and transportation, offering a wide array of benefits that positively impact efficiency, customer satisfaction, and security. However, it also poses challenges related to initial costs, data security, and regulatory compliance. To fully leverage the advantages of consignment tracking while mitigating these challenges, companies must invest in robust systems, prioritise data protection, and stay informed about evolving regulations. In doing so, they can create a more efficient and seamless transportation network that benefits both businesses and consumers alike.

Source: [logisticsandscm.com](https://logisticsandscm.com)



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# FUTURE OF INDIAN SUPPLY CHAIN AND EFFECTIVE LOGISTICS: HERE'S A LOOK AT 2023 TRENDS AND BEYOND

*India, with its huge scale, varied market, purchase patterns, and industries, offers massive opportunities for companies to expand and experiment in online commerce*

**SHAILESH KUMAR- FOUNDER AT CABT LOGISTICS**

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The growth of e-commerce and the demand for seamless customer experiences have led to many changes in supply chain management and effective logistics. The development of an omni-channel presence requires evolved logistics strategies. Retailers are integrating online and offline channels, offering options like buy-online-pick-up-in-store (BOPIS) and same-day delivery.

Logistics providers will need to continuously adapt to meet the changing demands of these evolving sales channels. The future of the supply chain and effective logistics is expected to undergo significant transformations in the coming years. These will be driven by technological advancements, changing consumer demands, and global trends. Here are some key trends to consider for 2023 and beyond.

## **Rise in E-commerce, Q-Commerce, and Social Commerce**

India, with its huge scale, varied market, purchase patterns, and industries, offers massive opportunities for companies to expand and experiment in online commerce. The consumer today expects swift and convenient deliveries. Used to rapid doorstep deliveries at the time of their choosing and, more often than not, in the shortest period possible, consumers are now accustomed to seamless logistics. In light of this, the supply chain and logistics sectors will need to adapt and evolve.

**Sustainability** : Accelerated growth in logistics is a direct result of the boom in Q-commerce and E-commerce. While digitisation has evolved how the industry works and opened new avenues and markets for retail, it has also increased the use of non-renewable sources of energy, which can lead to climate degradation. With thousands of vehicles in use for logistics, the industry needs to figure out sustainable solutions and a greener approach to reduce its carbon footprint. Reducing carbon emissions is not an option anymore but rather a crucial step to ensure our planet's survival. Working towards sustainable solutions will not only help the planet but also create opportunities for exciting partnerships. Besides this, adopting an eco-friendly approach builds rapport with consumers, who are now more appreciative of sustainable practises. This includes EV adoption for fleets. EVs allow for connectivity and end-to-end visibility. The electrification of fleets will help businesses reduce global greenhouse gas emissions.

**Technological advancement** : One of the major bottlenecks in logistics today is route optimisation

which often leads to excessive use of resources. As of now, once an order is placed and the customer enters their address, there is no technology in place to help the rider figure out the shortest route for delivery. This gap is leading to energy waste and delayed deliveries. Technology can optimise delivery routes and save energy. Currently, there is no algorithm to decipher the shortest route for delivery. Technological advancements in route optimisation will be one of the biggest trends in supply chain management.

**Blockchain** : A Blockchain is like a digital ledger. Every transaction via blockchain is recorded on a block and across multiple copies of the ledger that are distributed over many nodes. Managing today's Logistics operations is extraordinarily complex. IT involves multiple stakeholders, spans hundreds of steps, multiple verification processes, a multitude of locations, both domestic and international, and is often extended over months of time. Blockchain helps find order in this chaos with improved visibility, traceability, increased security, reduced costs, and preventive measures. Blockchain is a boon for the logistics industry. It can assist businesses in supply chain management by increasing efficiency and security and reducing costs and inconveniences. By playing a crucial role in collaboration and optimisation, blockchain will further increase the efficiency of transactions.

**Robotics and Drone Deliveries** : The logistics industry is witnessing an influx in robotics. Companies will continue to experiment with drone deliveries. The increased use of robotics and drones will advance hyperlocal delivery, especially for rapid deliveries without putting the riders' lives at risk.

**Data Analytics**: The availability of large volumes of data combined with advanced analytics tools allows for better demand forecasting, inventory management, and risk mitigation. Predictive analytics can help identify potential disruptions and bottlenecks, enabling proactive decision-making to optimize the supply chain. The evolving supply chain landscape will require innovative solutions to leverage emerging technologies and manage complex logistics operations.

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Source: ABP News





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# HOW AI IS TRANSFORMING LOGISTICS, SUPPLY CHAIN MANAGEMENT

**A**I is revolutionising the industry by automating processes, providing predictive insights, and optimising the entire supply chain

The logistics and supply chain management industry is rapidly changing and adopting new technologies to streamline processes, increase efficiency and reduce costs. One of the most significant technological advances in recent years is the integration of artificial intelligence (AI) into logistics and supply chain management. AI is revolutionising the industry by automating processes, providing predictive insights, and optimising the entire supply chain. In this article, we will delve deeper into how AI is transforming logistics and supply chain management.

**Automated Warehouses and Distribution Centers :** AI-powered robots and automated systems are transforming warehouses and distribution centers by streamlining operations, improving efficiency, and reducing human error. With AI-powered robots, companies can automate the entire process of picking, packing, and shipping products. These robots can work 24/7 without getting tired, improving the speed and accuracy of the entire process. AI-powered machines can also optimise the layout of the warehouse, reducing the time it takes to pick and pack products. By analyzing data from previous orders, AI-powered machines can optimise the location of products in the warehouse, making it easier and faster for workers to pick and pack products.

**Predictive Analytics :** AI is also transforming supply chain management by providing predictive analytics. Predictive analytics is the practice of determining the likelihood of future outcomes based on historical data by employing data, statistical algorithms, and machine learning approaches. With predictive analytics, companies can forecast demand, optimize inventory levels, and reduce waste. For example, AI-powered systems can analyse data from previous orders and forecast future demand for a particular product. This information can be used to optimise inventory levels, ensuring that the right amount of products is available at the right time and not overstocked or understocked. This can also help reduce waste by ensuring that excess inventory is not produced, and products are not overstocked.

**Real-time Tracking and Monitoring :** AI-powered systems can also provide real-time tracking and monitoring of products throughout the supply chain. This information can be used to optimise routes, reduce transit time, and improve delivery accuracy. With real-time tracking, companies can ensure that products are delivered on time and in good condition, improving customer satisfaction.

These systems can also monitor the condition of products during transport, ensuring that they are not damaged or spoiled. For example, AI-powered sensors can monitor the temperature and humidity of products during transport, ensuring that they are stored in the right conditions required to maintain their efficacies.

**Optimising Routes and Reducing Costs:** AI-powered systems can optimize routes and reduce costs by analysing data from multiple sources. By analysing data from traffic patterns, weather forecasts, and historical data, these systems can optimize delivery routes, reducing transit time and fuel costs.

These AI-powered systems can optimize routes to avoid traffic congestion, reducing the time it takes to deliver products. This can help reduce fuel costs, as drivers spend less time idling in traffic. The systems can also optimise routes to reduce the number of miles driven, reducing fuel costs and emissions.

**Demand Planning:** AI is transforming demand planning by providing accurate and real-time insights into customer behavior and preferences. AI-powered systems can analyse customer data from multiple sources, including social media, online reviews, and customer service interactions, to identify patterns and trends. This information can be used to create targeted marketing campaigns and improve customer engagement. AI-powered systems can also help companies anticipate changes in customer behavior and preferences, allowing them to adjust their product offerings accordingly. By anticipating changes in demand, companies can improve customer satisfaction and reduce costs.

**Conclusion :** AI is transforming the logistics and supply chain management industry by automating processes, providing predictive insights, optimising routes, and improving customer service. By adopting AI-powered systems, companies can improve efficiency, reduce costs, and improve customer satisfaction. AI will undoubtedly play a significant role in shaping the future of a rapidly evolving industry as logistics and supply chain management and companies that embrace AI will be better-positioned in a competitive landscape to succeed in the future.

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Source: Businessworld

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## IMPROVING WAREHOUSE AND BUSINESS OPERATIONS: WHAT TO KNOW BEFORE DECIDING ON SOFTWARE

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When growing ecommerce businesses look for software solutions to improve team efficiency and accuracy, sellers tend to go down one of two paths: pursuing either an inventory management system (IMS) or an enterprise resource planning (ERP) tool. While this makes sense at a macro level with both tools having the ability to consolidate a large degree of company data and needs within one tool, there are vast differences at a micro level.

The core function an IMS plays is to ensure accurate inventory counts across sales channels. As if helping sellers avoid overselling wasn't enough, modern-day IMS programs can also help with the management of a seller's product procurement, orders and warehouses. Further, with such a big tie-in to the finances of a business, many IMS players have financial tools like QuickBooks Online or Xero incorporated into them as a way to help sync product purchases, costs, inventory valuation, etc.

On the other hand, the core function of an ERP is more strongly tied to the financials of a business. With the ability to integrate sales channels, inventory and other tech stack solutions, the ERP aims to be the sole source of information for a company and prioritizes the structuring of data in order to populate the general ledger properly.

As you can see, IMS and ERP systems are meant to do very different things and are also set up in very different ways. Without going too deep into detail just yet, ask yourself the following questions when considering which is the right path for your business:

- Are you looking to solve operational issues or to be more financially compliant?
- Think about your team, tech stack, and processes: are you in a state of growth and experimentation, or is everything well-defined and fail-safe?
- Do you prefer a "plug-and-play" solution, or do you have technical resources (or budget) to do integrations?
- What timeframe are you looking to have a solution implemented by? (Weeks, months, years?)
- What is your overall budget to implement a solution?

If your answers align more with the former option than the latter, an IMS is probably the right solution for you. However, if your answers landed more with the latter options, it sounds like your business is less of a growth

seller and more of an enterprise, and the best fit is the enterprise resource planning tool.

Why is this? It's because ERP tools like NetSuite, Sage, SEP, etc., are set up around a broad-reaching, well-defined process. Implementation is meant to map out data points and cement the way in which teams work. On the other hand, inventory management solutions like Finale Inventory are meant to be customizable for growing teams. They're made to be flexible: they're counting on your tech stack changing and that's why IMS software platforms come with so many pre-integrated tech stack options. Not only does this make getting started with an IMS significantly cheaper, but it also makes onboarding faster.

ERPs do have the advantage of facilitating processes between a wider variety of technical resources (think sales CRM, marketing automation tools, etc.) and having the entire team (normally hundreds or thousands of employees) work within the same tool. However, with this breadth of product offering comes a depth of complications: should one part of the system go down, there's a risk everything else within the ERP can face troubles or go down, as well.

There's a reason why deciding on when to update ecommerce systems and what solution to pursue can often be overwhelming. Especially when ERP systems can cost hundreds of thousands of dollars to implement (across months, if not years), the added pressure of financial and competitive setbacks is very real if the wrong decision is made.

At Finale Inventory, we're proud when sellers outgrow us and move on to ERP systems because they're now managing millions of orders across a few hundred team members. However, we've often seen the opposite: sellers believe they're ready to migrate to an ERP, end up having buyer's remorse and, many times, come back to using Finale to help their business grow.

Finale Inventory has been around for over a decade and has worked with thousands of sellers over the years. We've stayed in business because we help ecommerce businesses grow, plain and simple. Talk to our team to learn more about how sellers use Finale to meet their unique needs or for a more in-depth comparison of an IMS vs an ERP system (features, related costs, implementation timeframes, etc.)

Source: Supply Chain Dive



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## INDIA AT THE CENTRE OF GLOBAL SUPPLY CHAIN AND LOGISTICS TRANSFORMATION: NITIN GADKARI

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The summit saw a distinguished speaker line-up who delved into critical topics shaping India's trade ecosystem

Industry leaders and experts gathered at the Supply Chain Management & Logistics Summit 2023 recently, shedding light on India's remarkable journey towards transforming its trade landscape and emerging as a global leader. With a focus on strategic initiatives and advancements in supply chain management, logistics, and maritime infrastructure, the event, organized by ET Edge, provided an insightful platform for dialogue and collaboration.

The summit featured a distinguished line-up of speakers who delved into critical topics shaping India's trade ecosystem. The discussions highlighted the importance of world-class port infrastructure and 'Smart Ports' implementation to improve business efficiency. The speakers emphasized the need for reducing logistics costs and enabling multi-modal shifts to enhance the efficiency and competitiveness of India's supply chains.

In his keynote, Nitin Gadkari, Minister of Road Transport & Highways, Government of India, said, "For India to achieve the PM's dream of a USD 5 Trillion economy, our exports have to increase and imports reduced. Supply Chain Management & Logistics has a huge role to play in this transformation. We aim to reduce the logistics cost to 9% from the current 14% -16% by the end of 2024. Good roads, alternative fuels, and increased usage of waterways are important factors that shall make this possible. I urge the industry to use the waterways developed in the Ganges and Brahmaputra rivers and utilize the route to reach North Eastern states, as all protocols and agreements with our neighbors have been signed. There are 40 river ports and 4 multimodal ports on the Ganges route alone. The world wants to buy from us, and we can make our exports competitive by leveraging efficient logistics management."

Sanjeev Ranjan, Chairman of the National Shipping

Board, shared valuable insights on the Sagarmala Project, which is an ambitious endeavor to rejuvenate sea ports for economic development. His presentation showcased the project's potential to enhance India's trade capabilities and strengthen its position in the global supply chain ecosystem. The summit witnessed engaging discussions on various crucial subjects, including self-reliance in shipbuilding, repair, and recycling, reformation of shipping policies and institutional frameworks, establishing India as a world-class maritime research, education, and training hub, and promoting waterways as sustainable transportation routes.

Also Read - Pharma logistics: Prioritising, protecting product integrity During the event, the Minister of Ports, Shipping, and Waterways, Sarbananda Sonowal, shared his optimism about India's global supply chain management future. He highlighted the substantial progress made by Indian ports, surpassing the average container dwell time of the United States and Germany. Sonowal also underscored India's commitment to green shipping through the implementation of the National Action Plan for Green Shipping.

The summit also addressed the significance of institutional, regulatory, and legislative reforms in streamlining trade processes and creating a favorable business environment. It also explored the potential of waterways as efficient transportation corridors, focusing on emissions reduction and significant improvements in turnaround time. The discussions emphasized the need for a multimodal shift towards waterways, including the Ganges and Brahmaputra rivers and other navigable water routes. Such shifts reduce transportation times and lower carbon footprints compared to traditional road-based transportation systems.

Source: [www.itln.in](http://www.itln.in)



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# INDIA'S SUPPLY CHAIN OPPORTUNITY

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## Why in News?

- However, the announcement at the G20 Leaders' Summit on the landmark India-Middle East-Europe Economic Corridor (IMEC) has the potential to make India an Asian hub in global supply chains.
- This is significant amid the efforts to cut dependence on China-centric global supply chains.

## What's in Today's Article?

- What are Supply Chains?
- Why are Global Supply Chains Moving from China?
- Why are India and Southeast Asia Viewed as Attractive Supply Chain Hubs?
- Steps Taken by India to Ramp-up its Supply Chain Network
- Way Forward for India - Learn from China's Experience
- Conclusion

## What are Supply Chains?

- **A supply chain includes** every step (beginning with the producers of the raw materials) that is involved in getting a finished product or service to the customer.
- It refers to the **geographical location of stages of production** (design, production, assembly, marketing, service activities) **in a cost-effective manner**.
- **Global supply chains** have been the leading model of industrial production since the 1980s, **influencing the pace and nature of globalisation and regionalisation**.
- Global supply chains **can be found in a wide range of simple** (textiles and clothing, food processing and consumer goods, etc.) and **complex industries** (e.g., automotives, aircraft, machinery, electronics and pharmaceuticals).

## Why are Global Supply Chains Moving from China?

- Today, **China is a major actor in global value chains**, accounting for nearly **20% of global manufacturing trade** and an even greater share of many intermediate global value chain inputs that are essential for production.
- However, even before the Covid-19 pandemic, **Western firms had begun to reduce their reliance on China** and its popularity as a sourcing market among Western buyers was diminishing.
- The trend was attributable in part to **rising wages and supply chain bottlenecks within China**, and investor concerns about **tighter regulation of foreign firms**.
- Also, the **country's trade war** with the US is forcing multinational companies to rethink their global sourcing strategies.
- **Some production stages in Chinese supply chains**, particularly the labour-intensive ones, **were moving to lower-cost locations**.
- However, **what makes it difficult to relocate all production from China** is that it is costly to shift supply chains because new plants need to be set up, and workers need to be hired and trained, etc.

## Why are India and Southeast Asia Viewed as Attractive Supply Chain Hubs?

- Southeast Asia has attracted foreign companies with **cheap wages, fiscal incentives and improved logistics**.
- o **Vietnam and Thailand** are big winners in supply-chain shifting.
- But over time, **India can become a complementary Asian manufacturing hub to China** by reaping gains from foreign technology transfers and creating value-adding jobs. This is seen in the -
- o Ramped-up manufacturing of **iPhones** in the country,
- o **Early technology transfer** in the product cycle



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of the technologically advanced Mercedes Benz EQS to India, and

- o Foxconn Technology Group developing a **chip-making fabrication plant in Gujarat**.
- **Manufacturing sectors in India** such as automotives, pharmaceuticals, and electronics assembly are already sophisticated, and likely to emerge as winners in this race.
- India's attractiveness to foreign investors is also linked to **geopolitical and economic factors**.
- **Indian service** can also be a winner, including in ICT, back-office work, financial and professional services, and transport and logistics.

#### Steps Taken by India to Ramp-up its Supply Chain Network:

- Since 2022, the Indian government's trade policy has placed **renewed emphasis on preferential trade** through a number of bilateral deals with trading partners.
- **The UAE-India Comprehensive Economic Partnership Agreement** entered into force in May 2022.
- Talks are ongoing to conclude the full **Australia-India free trade agreement (FTA)** by the end of 2023. **Negotiations for a UK-India and EU-India FTA are in process**.
- **The Indian PM's visit to Washington DC** (in June 2023) showed that supply chains are at the centre of the latest chapter in India-United States relations.
- These new deals with Western trading partners reflect plans for deep economic integration **going well beyond India's previous FTAs which focused solely on the goods trade and related measures**.

#### Way Forward for India - Learn from China's Experience:

- The promotion of **export-oriented foreign direct investment (FDI)** is key to participating in supply chains.
- **Local companies need smart business strategies** to join global supply chains.
- o **Conglomerates can cross-subsidise investments** and other costs among business units.

- o Small and mid-sized enterprises should work as **industrial suppliers and subcontractors to large exporters**.

- **Business strategies like mergers, acquisitions, and alliances** with multinationals and large local business houses are rational approaches.
- **Investment in domestic technological capabilities** to achieve international standards of price, quality, and delivery.
- **Better targeting of multinationals in new industrial activities** in which there may be a potential comparative advantage and better coordination between the central and state governments.
- **Upstream investment in tertiary-level education** in science, technology, engineering, and mathematics.
- **Caution should be exercised before India attempts to replicate China's** state interventionist template, as there is a significant risk of government failure.
- o It may be prudent to actively **engage with think tanks to gain insights into what might work**.

#### Conclusion:

- **India has a historic opportunity to promote industrialisation in South Asia**, which would stabilise the region, increase jobs, and make it less vulnerable to Chinese enticements.
- The Indian government **should consider following policy initiatives to promote regional supply chains** -
  - o Upscaling the Make in India Programme into a **Make in South Asia Programme**,
  - o Concluding a comprehensive bilateral FTA with Bangladesh, and
  - o Upgrading the Indo-Sri Lanka FTA to support regional rules-based trade and investment.
- Unless India creates channels for South Asia, it has no offer for the **Global South**. The fresh supply chains opening up with the US are good for India to start its global integration journey, **Neighbourhood First**.

Source : Indian Express



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# “SUSTAINABLE AND EMISSION-FREE LOGISTICS AND TRANSPORTATION DELIVERY”

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**Introduction:** The logistics and transportation industry in India is undergoing a significant transformation, driven by a growing focus on sustainability and environmental concerns. With the rise of e-commerce and increased urbanization, the demand for efficient and eco-friendly delivery solutions has never been greater. This case let explores the initiatives and challenges related to zero-emission delivery in the Indian context. Key Players:

1. **E-commerce Giants:** Companies like Flipkart, Amazon, and Reliance Retail are leading the way in transforming last-mile delivery to reduce emissions.
2. **Startups:** Numerous startups, such as Rivigo, Delhivery, and Zedpack, are innovating in electric vehicle (EV) technology and sustainable logistics.
3. **Government:** The Indian government is introducing policies and incentives to promote electric vehicles and green logistics.

**Definition of zero emission:** Zero emission refers to the concept of producing little to no harmful pollutants or greenhouse gases during the operation of various vehicles, technologies, or processes. This concept is crucial in the context of addressing environmental challenges, particularly climate change and air quality issues. Zero emission solutions aim to minimize or completely eliminate the release of carbon dioxide (CO<sub>2</sub>), nitrogen oxides (NO<sub>x</sub>), particulate matter, and other harmful emissions into the atmosphere. The key focus areas for zero emission initiatives include:

1. **Transportation:** The transportation sector is a significant contributor to greenhouse gas emissions. Zero emission vehicles, such as electric cars, hydrogen fuel cell vehicles, and electric bicycles, are designed to run without tailpipe emissions, helping to reduce air pollution and combat climate change.
2. **Energy Production:** Zero emission energy sources, like solar, wind, and hydropower, generate electricity without producing greenhouse gases. Transitioning from fossil fuels to these renewable energy sources is vital for achieving zero emission electricity generation.
3. **Industrial Processes:** Industries are increasingly adopting cleaner technologies and processes to reduce emissions from manufacturing and

production. This includes using renewable energy, improving energy efficiency, and implementing carbon capture and utilization techniques.

4. **Building and Construction:** Zero emission building practices involve energy-efficient construction, renewable energy integration, and sustainable materials to minimize the environmental impact of structures. Smart building designs reduce energy consumption and emissions.
5. **Waste Management:** Sustainable waste management practices aim to reduce the generation of waste and promote recycling and composting to minimize emissions from landfills and incineration.
6. **Agriculture:** Zero emission agriculture focuses on reducing emissions of methane and nitrous oxide, potent greenhouse gases associated with livestock and agricultural activities. Sustainable farming practices and methane capture systems are employed.

## Initiatives:

1. **Electric Delivery Vehicles:** E-commerce companies are rapidly adopting electric two-wheelers, three-wheelers, and even electric vans for last-mile deliveries. These vehicles significantly reduce emissions compared to traditional gasoline-powered vehicles.
2. **Charging Infrastructure:** To support electric delivery fleets, companies are investing in charging infrastructure. They are setting up charging stations at delivery hubs and partnering with existing charging networks to ensure uninterrupted operations.
3. **Route Optimization:** Advanced algorithms and data analytics are being used to optimize delivery routes, reducing mileage and emissions. This minimizes the time vehicles spend on the road and the associated carbon footprint.
4. **Packaging Innovation:** Companies are experimenting with sustainable packaging materials to reduce waste and environmental impact. This includes using recycled materials and designing packaging that is easy to recycle.
5. **Green Warehouses:** Warehouses are being

equipped with solar panels and energy-efficient systems to reduce their carbon footprint. Energy consumption is monitored and optimized to minimize waste.

**Challenges:**

- 1. Infrastructure:** India’s charging infrastructure for electric vehicles is still developing. This can limit the scalability of electric delivery fleets, particularly in remote areas.
- 2. Costs:** Electric vehicles often have higher upfront costs compared to traditional vehicles. Companies need to weigh these costs against the long-term savings from reduced fuel and maintenance expenses.
- 3. Battery Technology:** While EV technology is advancing, battery limitations such as range and charging times still pose challenges for last-mile delivery, especially in regions with inadequate charging infrastructure.
- 4. Regulatory Hurdles:** Despite government incentives, there can be bureaucratic hurdles and regulatory challenges when it comes to adopting new technologies and green practices.
- 5. Consumer Expectations:** Meeting delivery timeframes is crucial in the e-commerce industry. Electric vehicles may have limitations in terms of speed and range, which can affect timely deliveries.

At present, logistics sector uses ICE trucks, vans, cars, motorcycles, and bicycles to deliver parcel which require human intervention. The mode of delivery may depend upon their weight category and type of goods. There exist strong ties among the energy sources, public health expenditures, logistics operations and eco-environmental sustainability (Khan et al., 2020). For a smooth adoption of ZEVs, key barriers include the upfront purchase cost, technology uncertainty, lack of charging infrastructure and public awareness and education. The logistics industry also witnessed either the lack of policies and programs or the implementation to help overcome a number of these barriers.

Evolution of Engine/Motor Technology	Conventional	Hybrid	Plug-In Hybrid	Battery Electric	Other Zero Emission Vehicles
Utility	Personal/Public/ Cargo Transport	Personal/Public Transport	Personal/Public	Personal/Public/ Cargo Transport	Personal/Public/ Cargo Transport
Source of energy	Petroleum Products (Fossil-Fuel)	Petroleum Products (Fossil-Fuel)	Petroleum Products (Fossil-Fuel) and Electricity	Electricity	Hydrogen/Electricity/Solar/ CNG/Wind
Consumption	Gasoline/Diesel/ LPG/ Jet Fuel	Gasoline/Diesel/ LPG/ Jet Fuel + Battery	Gasoline/Diesel/ LPG/ Jet Fuel + Battery	Battery	Battery/Fuel Cells
Type of Vehicles	Car/Truck/Bus/ Van/Aircraft/Ship/UAV/ Others	Car/Truck/Bus/ Van/ Others	Car/Truck/Bus/ Van/ Others	Car/Truck/Bus/ Van/Aircraft/ UAV/ Others	Car/Truck/Bus/ Van/Aircraft/ Ship/UAV/ Others
Approximate Tailpipe Emissions	100%	50%	25%	0%	0%

Table1: Classification of transport vehicles by evolutions of engine or motor technology, purpose of vehicle utility, energy source used, type of fuel consumed, category or type of vehicles, and approximate tailpipe emissions during operation (Hong, Kuby and Murray, 2018; Khan et al., 2020; Litman, 2021; Pinto and Lagorio, 2022; Samarov and Verevkin, 2022).

**Unmanned aerial vehicles: UAV’s:** Remotely or automatically piloted miniature aircraft devices are known as UAVs. These are categorised according to the aircraft’s weight and purpose. UAVs are employed in photography, videography, surveillance, geospatial technology, agriculture, and more recently for goods transportation because to their small size and autonomy. (Moshref-Javadi and Wenckebach). These UAVs are fuelled by fossil fuels, fuel cells, or batteries. The majority of UAVs in use today run on batteries. UAVs similarly to the autonomous ETsto carry products and services with maximum flexibility while avoiding congested road traffic. In the UAV business has experienced rapid expansion in recent years for a variety of civil applications. One of them a major focus is on delivery applications to complement current traffic and pollution concerns.

**Advantages of UAVs:**

- Compact and portable to operate
- o Autonomous
- o Zero tailpipe emission
- o Energy efficient
- o Programmed to operate simultaneously with multiple drones
- o No delays due to road traffic blocks
- o Low down time
- o Less human intervention and last mile connectivity

**Disadvantages of UAVs:**

- Limited range of operations(10-50km)
- Limited weight carrying capacity
- Dedicated infrastructure required
- Evolving technology
- High-capacity cost
- Slow return on investment
- High battery charging time

**Ground based electric vehicles of advantages:**

- Zero tailpipe emission
- Energy efficient
- Possibility of being autonomous

- Cost efficient
- Environmentally sustainable
- Economically viable over long period

**Disadvantages:**

- High battery charging/down time
- Limited range of operations
- Robust charging infrastructure required
- Adaptation challenges
- Sophisticated hardware, software required and battery technology
- High capital cost
- Slow return on investment
- Vulnerable to cyberattacks

**Case Study: Amazon’s Commitment to Zero Emission Logistics**

**Background:** Amazon, one of the world’s largest e-commerce companies, has made a significant commitment to zero emission logistics as part of its sustainability goals.

**Actions taken:**

- 1. Electric Delivery Vans:** Amazon has ordered thousands of electric delivery vans from electric vehicle manufacturer Rivian. These vans will be deployed in Amazon’s delivery network, helping to reduce emissions in the last-mile delivery process.
- 2. Renewable Energy:** Amazon is investing in renewable energy projects to power its delivery operations sustainably. This includes solar and wind energy initiatives to offset the energy consumption of its logistics infrastructure.
- 3. Efficient Routing:** Amazon is using advanced routing algorithms and technology to optimize delivery routes, reducing the number of miles driven and emissions produced.
- 4. Green Packaging:** Amazon is working on sustainable packaging solutions to reduce waste and the carbon footprint of its deliveries.
- 5. Innovation Hub:** The company has established an innovation hub called “The Climate Pledge Fund” to invest in companies and technologies that accelerate the transition to a low-carbon economy, including innovations in logistics.

**Challenges faced:**

- Amazon faces challenges in scaling up its electric vehicle fleet rapidly, particularly in regions with limited charging infrastructure.
- Coordinating sustainability efforts across its

extensive global supply chain is a complex task.

- The company must continually invest in research and development to stay at the forefront of zero emission logistics technologies.

**Conclusion:**

Zero emission logistics is essential for reducing the environmental impact of transportation and supply chains. While there are significant challenges, companies like Amazon are making substantial efforts to transition to sustainable logistics solutions. Overcoming these challenges requires collaboration among governments, companies, and stakeholders to build the necessary infrastructure, incentivize innovation, and navigate regulatory complexities. Top of Form Zero-emission delivery in India’s logistics and transportation sector is gaining momentum as companies recognize the environmental and economic benefits of sustainable practices. While there are challenges, continued innovation, government support, and increased consumer awareness about sustainability are expected to drive the adoption of green delivery solutions. The success of these initiatives will not only reduce emissions but also set a global example for sustainable logistics practices.

**References:**

- Abdalla, A. M. et al. (2018) ‘Hydrogen production, storage, transportation and key challenges with applications: A review’, *Energy Conversion and Management*, 165, pp. 602–627. doi: 10.1016/J.ENCONMAN.2018.03.088.
- Amorosi, L. et al. (2020) ‘An Integrated Routing-Scheduling Model for a Hybrid UAV-Based Delivery System an Integrated Routing-Scheduling Model for a Hybrid UAV-Based Delivery System’. Baek, D. et al. (2020)
- ‘Energy-efficient coordinated electric truck-drone hybrid delivery service planning’, 2020 AEIT International Conference of Electrical and Electronic Technologies for Automotive, Doi: 10.23919/AEITAUTOMOTIVE50086.2020.9307420. 17 Bonsu, N. O. (2020)
- ‘Towards a circular and low-carbon economy: Insights from the transitioning to electric vehicles and net zero economy’, *Journal of Cleaner Production*, 256. doi: 10.1016/j.jclepro.2020.120659. Bours, D., Mcginn, C. and Pringle, P. (2014)
- ‘Guidance note 3: Theory of Change approach to climate change adaptation programming’. Chellaswamy, C. and Ramesh, R. (2017)





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# THE G20 ENVISIONS A BIG ROLE FOR TECHNOLOGY IN INCLUSIVE GROWTH

DEBJANI GHOSH

India has taken centre stage as a global leader. As the world grapples with complex challenges, India's proactive stance at the G20 forum has amplified its standing as a key player in shaping international discourse and action. The G20 Leaders' Declaration with 100% consensus on all developmental and geo-political issues is best regarded as a historic feat.

As G20 leaders deliberated systems that can empower countries to address global challenges in a human-centric manner, what stood out for me was the pivotal role of technology in fostering inclusive, secure and ethical practices and growth. What I was especially proud of was how India led from the front. Putting words into action over the last decade, India has consistently invested in and built digital public infrastructure (DPI) that serves as a cornerstone for inclusive economic growth. From initiatives like BharatNet and Aadhaar to other DPI platforms, our Digital India journey has yielded substantial impact at scale. Insights from it were shared with the G20. The Leaders' Declaration emphasized the role of technology in bridging digital divides and promoting inclusive and sustainable development. It focused on:

**Building DPI:** The forum emphasized the significance of constructing robust, reliable and inclusive DPI that prioritizes safety, security, trustworthiness and accountability, and respects data privacy, intellectual property and human rights. The G20 endorsed both the voluntary G20 Framework for Digital Public Infrastructure Systems and India's proposal to establish a Global Digital Public Infrastructure Repository. It also recognized the One Future Alliance initiative aimed at helping low- and middle-income countries with DPI.

**Imbuing the digital economy with safety, security, resilience and trust:** Leaders acknowledged the importance of a fully secure digital economy by embracing the adoption of non-binding principles to support businesses as they ensure safety, security and trust in the digital realm, and also toolkits designed to promote cyber education and awareness among the under-age

**Fostering digital ecosystems:** It was remarkable to see the G20's commitment to promoting responsible, sustainable and inclusive digital-tech deployment in agriculture, healthcare and the protection and promotion of culture and cultural heritage. Further, the Global Initiative on Digital Health for data-protected digital health systems will be key in building a comprehensive ecosystem in compliance with respective data protection regulations.

**Harnessing artificial intelligence (AI) responsibly:** Participants stressed the importance of developing AI

systems that prioritize transparency, fairness, accountability and privacy. India has been pushing for a comprehensive framework for AI regulation and its message to the world is clear: AI is not just an instrument for progress, but a catalyst for human advancement, equity and sustainability. It was commendable to see the leaders' commitment to G20 AI Principles that advocate a pro-innovation regulatory approach aimed at using AI to achieve our Sustainable Development Goals

The Declaration also established the importance of startups and SMEs as key engines of sustainable economic growth and innovation. The G20, for the first time, had a dedicated Startup20 summit under India's Presidency. This brought together all the participating countries to share their best-known practices and develop a harmonized approach to foster ecosystem growth across international borders. Thanks to its resounding success, India has paved the way for a dedicated focus on startups and SMEs within the G20 framework.

Last but not least, I want to call out the commitment to 'Preparing for the Future of Work' in the G20 Leaders' Declaration. The focus on an urgent need to address growing skill gaps, commitment to working towards ensuring well-managed, regular and skills-based migration pathways, and efforts to map global skill gaps are the need of the hour, globally.

With the G20 commitment to consider an international reference classification system of occupations by skill and qualification requirements to facilitate cross-country comparability, and a comprehensive toolkit with adaptable frameworks for designing and introducing digital upskilling and reskilling programmes, the G20 members had made it clear they recognize the importance of simplifying how they understand and use each other's resources when the need arises.

These initiatives, if undertaken, will help address the current global talent crisis and build a harmonized framework for skill development, assessment and mobility to fulfil the digital era's rapidly growing needs.

The deliberations of G20 leaders reflect the group's commitment to harnessing technology and digital infrastructure for the betterment of society. This is a foundational principle that has helped our country tackle the challenges of a billion-plus population, and now it is indeed a moment of pride to see most of the world embrace the same approach to unlock the power of inclusive growth within their own national borders

Source:mint



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# THE G20 SUMMIT IS OVER BUT THE HARD WORK BEGINS NOW

RAJRISHI SINGHAL  
POLICY CONSULTANT AND A SENIOR JOURNALIST

It's over, bar the shouting. The headline for India's G20 presidency will undoubtedly be a consensus forged among fractious global leaders. This was in addition to successfully aligning the summit agenda with the Global South's interests, which included, among other things, re-focusing attention on the indebtedness that has afflicted poor and developing nations after the pandemic. The Indian presidency's extraordinary achievements will now have to be followed up with equally exceptional steps to dispel doubts that G20 commitments rarely translate into action.

The Indian presidency's crowning moment was the unexpected but unanimous acceptance of a Leaders' Declaration, that too a day in advance. This was achieved with sophisticated, deft deployment of words that speak but do not tell. The Leopard-2 tank in the room—the Russia-Ukraine war—threatened to derail consensus; however, the wording of the final text, which departs from the Bali declaration, not only had the West's approval, but also assuaged Russian and Chinese concerns. The other big achievement was the inclusion of the African Union (AU) as a permanent G20 member, which helps burnish India's claim as a true representative of the Global South. This inclusion was overdue and it's to the Indian leadership's credit for pushing it over the line. There are other notable commitments as well, including a new gas-to-digital supply chain spanning India, West Asia and Europe.

Once the post-summit celebrations are over, it might be necessary to think about some of the challenges that might arise from the G20 declaration. This becomes even more pressing when considering the view of John James Kirton, professor emeritus and founder of the G20 Research Group at the University of Toronto: "Most of the commitments were weak, with G20 leaders promising to keep doing what they have already committed to do."

Two issues need immediate attention.

The first relates to the movement of people as part of trade agreements. The Declaration states: "...well-integrated and adequately skilled workers benefit origin and destination countries alike and (we) commit to working towards ensuring well-managed, regular and skills-based migration pathways." But people movement seems to be holding up the UK trade deal. India's ambassador in London, Vikram Doraiswami, went public recently to pacify UK's anti-immigration lobbies (tied umbilically to the Rishi Sunak government) and to re-emphasize nuances in India's demand for visas, intended to serve as a placatory gesture. Doraiswami's statement raises concerns whether India is walking back from its stated position on movement of professionals, which is now part of the New Delhi G20 Declaration also, in its eagerness to conclude the trade deal. India has been dogged in its opposition to

the developed world's barriers on movement of professionals, otherwise known as Mode-4 services exports under the General Agreement on Trade in Services. This might be India's moment to take advantage of the G20 momentum.

The second issue relates to the AU's admission to the club. It will be interesting to see how this plays out because it is individual countries, and not the AU, which are members of important global platforms such as the World Trade Organisation (WTO). The WTO is important because India's stand at the trade body, despite being frequently aligned with the interests of many African nations, has found few supporters. Often, African support for India was sacrificed at the altar of curious trade deals with the West. The AU inclusion now provides India with additional bragging rights in the continent.

This becomes doubly urgent in the light of China's incursions in the continent and the sovereign indebtedness it has spawned in pursuit of the Belt and Road Initiative (BRI). Michael Bennon and Francis Fukuyama write in Foreign Affairs that many African countries have been seeking loans from multilateral and bilateral lenders in their quest to wriggle out of the BRI-focused debt trap. This might be an opportune moment for India to revive its instrument for economic diplomacy: project-linked bilateral lines of credit, which are more recipient-friendly in design. Its performance has been underwhelming so far, but the AU platform should be able to provide India with a head-start. The G20 has time till the 2024 Brazil summit to follow up on the Delhi commitments, including operationalizing the new trade route.

But beyond its global remit, the 2023 G20 summit also has a domestic fallout. The Indian presidency was able to take a staid, solemn (and usually boring) summit to the masses by holding over 200 meetings in 60 different towns and cities across India. Prime Minister Narendra Modi credited this to his government's belief in bipartisanship and cooperative federalism. Many opposition leaders have, however, been accusing New Delhi of increasingly centralizing power. The veracity of the government's claims will be tested by November-end from two Constitution-mandated developments: who it appoints as chairman of the Sixteenth Finance Commission and the panel's terms of reference. In the true spirit of cooperative federalism, if the states are to be genuinely treated as critical partners in the country's growth regardless of their political disposition, a lot will depend on how the Commission finalizes the sharing of resources and revenues between the Centre and states.

Source: [www.livemint.com](http://www.livemint.com)

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## DATA ANALYTICS QUIZ

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1. Data analytics use \_\_\_\_\_ methods to get insights into data set
  - a) Graphical
  - b) Optimization
  - c) Statistical
  - d) Matrix
2. The process of quantifying data is referred to as
  - a) Coding
  - b) Enumeration
  - c) Estimation
  - d) Validation
3. Basic building blocks of qualitative data are
  - a) Categories
  - b) Units
  - c) Words
  - d) Texts
4. Which of the following does NOT fall under dirty data
  - a) Inconsistent data
  - b) Duplicate data
  - c) Inaccurate data
  - d) Manipulated data
5. What is an 'outlier' in the context of data analytics
  - a) An extreme value that significantly differs from rest of the values in the data set
  - b) Missing value in a data set
  - c) Unexpected occurrence of a value
  - d) Substituted value
6. All of the following fall under descriptive statistics EXCEPT
  - a) Frequency distribution
  - b) Measures of central tendency
  - c) Measures of validity
  - d) Measures of variability
7. Median value of a data is depicted by
  - a) Bar chart
  - b) Box plot
  - c) Pie chart
  - d) Scatter plot
8. Visualization of the relationship between two quantitative variables is represented through
  - a) Bar graph
  - b) Scatter plot
  - c) Pie chart
  - d) Line graph
9. \_\_\_\_\_ analysis is used to predict the value of a variable based on the value of another variable
  - a) Linear regression
  - b) Correlation
  - c) Simulation
  - d) Restrictive
10. The term data analysis was introduced by
  - a) William S
  - b) Hans Peter
  - c) John Tukey
  - d) Charles Spearman

### ANSWERS TO BLOCKCHAIN QUIZ

1. c
2. d
3. c
4. b
5. d
6. a
7. a
8. c
9. b
10. a

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# BRANCH NEWS

## COCHIN BRANCH

**CEO/CPO Meet Organized by IIMM Kochi Branch :** IIMM Kochi Branch organized a workshop for the CEOs/CPOs of prominent industries in Kerala on 11<sup>th</sup> August '23 at "The Renai", Cochin. The meeting was presided over by branch Chairman Sri Jacob Mathew who welcomed all the participants and explained the different programs undertaken by the branch which enhances image of SCM professionals in the State.

This prestigious meet was inaugurated by National President Sri H K Sharma. In his inaugural address, Sri Sharma appreciated the activities undertaken by Kochi branch, with special mention of the unique "Store/Warehouse Management Competition".

Sri V Balkrishna Iyer, former National President, IMM presented the theme "Driving Operational Excellence for Unlocking Business Value". He elaborated on the post covid economic, political & social scenario on a global basis, and ways and means to deal with the same for optimizing efficiency..



*National President Sri H K Sharma inaugurating CEO/CPO meet. Left to right Sri K S Shaji, Sri T A Roby, Sri Jacob Mathew, Sri Bala Iyer & Sri P V Paulson*



*VP Commercial Malayala Manorma Daily, Sri P Prakash speaking on the occasion. Dr Jayachandran TD, FACT Ltd sitting beside*



*A view of the participants*

During the meeting, risk areas faced by various industries were highlighted by the participating companies and how they can be mitigated in order to increasing productivity and profitability.

IIMM Kochi is at the fore in helping improve management efficiency by better managing supply chain management, purchasing, vendor development, inventory management, logistics, etc.

Sri P V Paulson, Vice Chairman proposed a vote of thanks. The meeting was followed by a networking dinner.



**REPORT ON ANNUAL GENERAL MEETING :** AGM of Cochin Branch was held on 24<sup>th</sup> August at our Alpha Plaza hall. The meeting was presided over by Chairman Mr Jacob Mathew. In his Presidential address he highlighted the various activities taken up by the Branch. The unique “Stores Management Competition” has attracted many companies to IIMM and was appreciated by the industry. Cochin branch could conduct Seminars, Workshops, Training Programs, Consultancy works, short bterm courses as well as AICTE approved PG programs.



Report of activities was presented by Secretary Mr K S Shaji and Annual Accounts & Budget was presented by Treasurer Mr Thomas George.

Our founder member and past Chairman Mr Oommen Johnson functioned as the Returning Officer and election process was carried out smoothly.

The following members were elected as office bearers for 2023-'25:

- Chairman: Mr P. V. Paulson  
 Vice Chairman : Mr K S Shaji  
 Hon Secretary : Mr Thomas George  
 Hon Treasurer : Mr John Mathew  
 National Council Members:  
 (1) Mr Jacob Mathew (Imm Past Chairman)  
 (2) Mr T. A. Roby

Executive Committee members:

- 1) Dr Babu Jose
- 2) Dr Jagathy Raj
- 3) Mr Bijoy. S

The outgoing team and Office Manager Mr Babu were presented with mementos by the new Chairman.

## KOLKATA BRANCH

**REPORT ON 62<sup>ND</sup> ANNUAL GENERAL MEETING 2022-'23 OF IIMM KOLKATA BRANCH HELD ON WEDNESDAY, THE 30<sup>TH</sup> AUGUST, 2023 AT 6.30 P.M. AT THE SATURDAY CLUB, KOLKATA :** Mr. Kaushik Mukherjee, Hony. Secretary, heartily welcomed members for attending the 62<sup>nd</sup> AGM and placed on record sincere thanks and gratitude to them for sparing their valuable time to the cause of their own Institute. Before formal opening of the meeting, the Hony. Secretary invited all to have a cup of tea with snacks being served alongside of the venue.



Before taking up Agenda Items, the Hony. Secretary got confirmation from the Administrative Manager that necessary quorum existed. The Hony. Secretary also got confirmation from the house that they have already got the Annual Report 2022-'23 Booklet incorporating the Notice of the AGM, Minutes of the last AGM, Chairman's Report, Balance Sheet and Income &

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Expenditure Accounts as at 31<sup>st</sup> March, 2023. Accordingly the Annual General Meeting proceeded.

At the outset, the National Anthem was sung and the august house joined the melody standing from their seat.

The Hony. Secretary at this stage informed the house about sad demise of Mr. Santosh Kumar Ghosh Dastidar, Past Chairman of the Branch on 12<sup>th</sup> May, 2023. Late Ghosh Dastidar was an accomplished Materials Management Professional at his time who toiled to the cause of Institute building at its early stage. As requested by the Hony. Secretary, members observed one minute silence to pay their respectful homage to the departed soul. The meeting, thereafter, proceeded accordingly.

**1) Adoption of the Agenda :** Proposed by Mr. D N Chakravarti and seconded by Mr. Anup Kumar Dey.

**2) Approval of the minutes of the last 61<sup>st</sup> AGM held on 30<sup>th</sup> August, 2022 at ICCR Hall.** Proposed by Mr. Rajiv Chandra Kumar and seconded by Mr. Amal Bhattacharya.

**Felicitation of Respected Past Chairpersons of the Branch :** As proposed by the Hony.

Secretary, Mr. Koushik Roy, Chairman of the Branch, felicitated Mr. Asok Dasgupta, Mr. B G Sengupta and Mr. D N Chakravarti, Past Chairpersons of the Branch with a Uttariya and sought their blessing on behalf of the Executive Committee.

**3) Chairman's Address – Annual Report :** Mr. Koushik Roy, Chairman, briefly touched the institutional activities conducted through the year under review. He expressed sincere gratitude to fellow members for having bestowed their confidence in him in steering the Branch for the period 2021-'23. According to him, the Chairman's Report has been incorporated in the Annual Report 2022-'23, Page Nos. 13 – 28. However, he touched upon salient points of the report. In this connection, he requested all to follow Institute Website : [www.iimmkolkata.com](http://www.iimmkolkata.com) now and then to feel attached with their beloved Institute. According to him, efforts are on to revamp the Website as a knowledge sharing platform for SCM Professionals.

a) Branch could regain its position in educational activities and could conduct various programme throughout the year as the covid-19 pandemic has since been tamed to a great extent. Kolkata Branch has also clinched as many as four National Awards during the NATCOM 2022 held in Chennai. The Awards were : Best Branch (Metro), Best Faculty : Dr. Mukul Mitra, Best Membership Growth and Best Branch Education Activity. Besides the above, two GDMM students of 2019 Batch viz. Mr. Pratik Das and Mr. Chandan Roy secured 2<sup>nd</sup> and 3<sup>rd</sup> Positions respectively in All India Rank.

b) Owing to pandemic, Branch could not hold Diamond Jubilee Celebration Programme in 2020, as originally scheduled. But the Branch did it subsequently. During

24 – 25<sup>th</sup> February, 2023, Branch celebrated the Diamond Jubilee Programme in a befitting manner at Hotel Vivanta followed by Diamond Jubilee Dinner at the same venue. It was a dazzling show showcasing IIMM, its educational activities to the cause of SCM Profession. A Corporate Quiz was organized on 24<sup>th</sup> February, 2023 evening in presence of National President, National Executive Committee Members and other dignitaries. On 25<sup>th</sup> February, a Knowledge Seminar was organized on “Future of Supply Chain – Crisis Shapes the Profession”. Renowned speakers discoursed on the issue including Mr. Brajesh Kumar, Resource Person of GEM Portal. A talk on “How to remain focused within a crisis environment?” was also arranged. It was a discourse from spiritual perspective and Swami Atmapriyananda Maharaj, Pro-Chancellor, R K Mission Vivekananda Educational and Research Institute, deliberated on the issue. In the evening of 25<sup>th</sup>, Branch felicitated dignitaries, guests, past chairpersons and their spouses. This was followed by Diamond Jubilee Dinner.

c) In financial sector, Branch could gather an excess of Rs.15,19,310.00 during 2022-'23 and could overcome the grave situation faced due to pandemic in 2020 and 2021. Branch also arranged placement for a good number of GDMM holders in the last financial year.

d) Before concluding, the Chairman earnestly appealed to members to be with their own Institute and join various activities of the Institute as far as possible and contribute to the cause of the Institute for breaking new grounds to scale new height.

The Annual Report, as incorporated in the Annual Report Booklet and as briefly touched by the Branch Chairman was approved as proposed by Mr. B G Sengupta and seconded by Mr. Prasun Ganguly.

**4) Approval of the Income & Expenditure Accounts as on 31<sup>st</sup> March, 2023 and the Balance Sheets as at that date :**

Mr. Koushik Mukherjee, Hony. Secretary, placed the audited Income & Expenditure Accounts as on 31<sup>st</sup> March, 2023 and the Balance Sheets as at that date.

The Income & Expenditure Accounts as on 31<sup>st</sup> March, 2023 and the Balance Sheet as at that date were approved as proposed by Mr. Prasun Ganguly and seconded by Mr. Debasish Mallik and Mr. D N Chakravarti.

**5) Election of Office Bearers, viz. Chairman, Vice-Chairman, Hony. Secretary and Hony. Treasurer and Members to the Executive Committee for the year 2023-'24 and 2024-'25. &**

**6) Election of Representatives for the National Council for the year 2023-'24 and 2024-'25**

The Hony. Secretary handed over the platform to Mr. Sudipta Basu, Election Officer, for dealing with these two Agenda Items. Mr. Sudipta Basu placed on record thanks and gratitude for imposing faith in him and inducting him as the Election Officer and reported as

follows :-

There were single nominations for all the positions received in stipulated time and date. Mr. K Gupta, Administrative Manager and himself scrutinized all the nomination papers and all the nominations were valid. No nomination was withdrawn and accordingly all were in order. Accordingly, the Election Officer announced the re-constituted Executive Committee and Representatives to the National Council in applause as follows :-

**Office Bearers :**

**Chairman** : Mr. Koushik Roy  
**Vice Chairman** : Mr. Kaushik Mukherjee  
**Hony. Secretary** : Mr. Sanjay Gupta  
**Hony. Treasurer** : Mr. Debatosh Dey

**Four Members to the Executive Committee :** Mr. Sajal Das, Mr. Prasun Ganguly, Mr. Joydeep Basak, Mr. Usnish Basu and Mr. Partha Sarathi Bose.

**Representatives to the National Council from Kolkata Branch :** Mr. Animesh Chattopadhyay, Mr. T K Mishra, Mr. Debasish Mallick and Mr. Rajiv Chandra Kumar.

The newly elected members came forward and greeted the august house and joined for a photo session. The house wished them every success to the cause of IIMM and also to the cause of SCM Profession.

**7) Appointment of Auditors for the year 2021-'22 and fixation of remuneration :** Mr. Kaushik Mukherjee, Hony. Secretary, reported that there was a practice that the NHQ would appoint Auditors for the NHQ and all the Branches centrally and would also fix remuneration for Auditors to be paid by the concerned Branch. This is made for smooth and timely completion of audit of the entire IIMM family. Accordingly, he proposed that this might be continued, as desired by IIMM NHQ. The house accepted his proposal unanimously.

**Award Ceremony :** (a) The Hony. Secretary requested Mr. Koushik Roy, Chairman of the Branch to conduct the Award Ceremony. Accordingly, the Chairman announced that IIMM Kolkata Branch instituted a coveted award for the "Most Active Member of the Branch" in the name of Late S C Bhattacharya, Alumnus, Past Chairman of the Branch and Past National Vice President (East) of IIMM in 2011. The award carries a beautifully crafted Silver Memento engraving the name of award, logo of IIMM and the name of awardee. This award is contributed by Mrs. and Mr. Amit K Majumdar since its inception. With applause, the Chairman announced that Mr. Joydip Basak, Executive Committee Member of the Branch, had been adjudged the Most Action Member of the Branch for the year 2022 for his invaluable services to the cause of the Institute. The attending members congratulated Mr. Joydip Basak for this achievement. The Chairman invited Mr. Asok Dasgupta, Past Chairman of the Branch and Past President of IIMM, to handover the Award to Mr. Joydip Basak. Mr. Dasgupta handed over the Award to Mr. Joydip Basak in big applause.

(b) The Chairman further announced that considering

the commendable services to the Institute, the Executive Committee decided to felicitate the following members with Chairman's Appreciation Memento. Accordingly, Mr. Debasish Mallick was felicitated for his valued service for educational activities, Mr. Debatosh Dey was felicitated for commendable service in placement, Mr. Sanjay Gupta was felicitated for his overall contribution towards institutional activities, Mr. Prasun Ganguly was felicitated for his tenacious service in membership growth and Mr. R K Maheshwari was felicitated for supporting institute in generation of fund in every event. A designer memento was handed over to each of the above in recognition of their services by Mr. B G Sengupta and Mr. Asok Dasgupta.

(c) In this juncture, Mr. Kaushik Mukherjee, Hony. Secretary, announced that Mr. Koushik Roy during his tenure as the Chairman, led the Institute motivating his fellow colleagues and members as a whole. He also led the Diamond Jubilee Programme during 24 – 25<sup>th</sup> February, 2023 at Hotel Vivanta and organized it in a dazzling manner and also generated surplus in post-covid recession. The entire Executive Committee highly acclaimed his personal efforts and commitment to the Institute and also decided to honour him in reciprocate. Accordingly a befitting Memento has been awarded to Mr. Koushik Roy by Mr. D N Chakravarti.

**8. To Consider any other matter as may be brought forward :** Mr. Kaushik Mukherjee, Hony. Secretary announced that it was time for Open Session and invited members to come forward to express their views, suggestions etc. Accordingly, members came forward and expressed their feelings/views as follows :-

a) Mr. Debasish Mallick, Course Co-ordinator, informed that 1 Year Diploma Course on Materials & Supply Chain Management has been re-designed considering the requirement of present scenario and it is expected that the Course would gain repute.

b) Mr. B G Sengupta, Past Chairman, expressed that IIMM being his 2<sup>nd</sup> home, he was so happy and proud to see that Kolkata Branch is scaling new heights. According to him, commitment to be maintained in profession and vendors should be considered to be partners in SCM Profession. He further added that Mr. Koushik Roy and his team did a wonderful job. He also wished the newly re-constituted Executive Committee for breaking new grounds. Mr. Sengupta also proposed a Benevolent Fund be introduced to look after the welfare of all employees in the event any financial aid necessary for medical treatment. According to Mr. Sengupta, the fund to be raised from the surplus generated out of any special event being organized by the Institute, say 10% might be earmarked. The above proposal was appreciated by the house in applause and the Chairman assured to consider it suitably.

c) Mr. Asok Dasgupta, Past Chairman of the Branch and Past National President, congratulated Mr. Koushik Roy for the concerted team work. He also voluntarily offered himself to liaison for the consultancy assignments, Management Development Programme and also



programme on SCM in collaboration with a foreign university in USA. He also highly praised Mr. R K Parui, Accountant, for his untiring services in settlement of the dormant Consultancy Division Bank Account. He further suggested the entire proceeds of the said Bank Account should be invested separately and the yearly interest on it might be used for awarding a Trophy in Annual Convocation. He further suggested representing the NC Meeting regularly. Organizing of Eastern Regional Meeting has also been suggested.



d) Mr. D N Chakravarti, Past Chairman of the Branch and Past National Vice President (East), while

congratulated the team led by Mr. Koushik Roy as the Branch Chairman, expressed that the Institute was treading in its desired path. He also appreciated for arranging industrial visit for the GDMM students for the 1<sup>st</sup> time. He also reminiscence that he enrolled himself for GDMM in 1981 Batch and has been attached with his Alma Mater for many years and served the Branch at its helm.

e) Mr. R K Maheshwari proposed to institute cash award in the name of his departed father Late Dr. J P Maheshwari. The cash awards being Rs.10,000/- for GDMM 1<sup>st</sup> Class 1<sup>st</sup> and Rs.5,000/- for GDMM 1<sup>st</sup> Class 2<sup>nd</sup> from the next Annual Convocation. The proposal of Mr. Maheshwari was accepted unanimously with a big applause by the house and considered to be a noble submission to the cause of budding supply chain professions.

Mr. Kaushik Mukherjee, Hony. Secretary, in his concluding remarks, placed on record sincere thanks and gratitude to all concerned and especially to Mr. Koushik Roy, Chairman, for his untiring efforts and contribution as the Chairman of the Branch. The meeting ended with a vote of thanks to the Chair. Finally Mr. Mukherjee invited all to join dinner being served alongside.

**Report on Valedictory Programme of One Year Diploma Course on “Materials, Logistics, SCM and e-Commerce” held on 9<sup>th</sup> September, 2023 at IIMM Hall**

Kolkata Branch conducts One Year Diploma Course on “Materials, Logistics, SCM and e-Commerce” every year to provide trained manpower to industry and service sector for the last few years. This course is gaining reputation day-by-day. The valedictory programme of the ongoing course held at 5.00 p.m. on Saturday, the 9<sup>th</sup> September, 2023 at IIMM Hall. Out of twenty nine students enrolled for the course, twenty students attended the valedictory programme. On the occasion, Mr. Koushik Roy, Chairman, Kolkata Branch, handed over certificates and mark-sheets to the successful students . Mr. Kaushik Mukherjee, Vice Chairman, Mr. Sanjay Gupta, Hony. Secretary and Mr. Debasis Mallick, Course Co-ordinator also graced the occasion and wished the successful students.

The Branch Chairman requested successful students for applying Institute Membership. He further requested them to join GDMM/PGDMM Course in due course of time for their career development. Students also gave feedback on faculty and course contents. The programme was followed by high tea.

**PUNE BRANCH**

**Celebrating the 10<sup>th</sup> Anniversary of IIMM-Pune Office:** The Indian Institute of Materials Management (IIMM) Pune branch celebrated the momentous occasion of its 10<sup>th</sup> anniversary since the establishment of its office in Wakdewadi, Pune.



The celebration was held on 21<sup>st</sup> July 2023 and attended by about 30 senior members of the branch, all of whom have been instrumental in shaping the institute's journey over the past decade.

The event commenced with a warm welcome address by the Mr. Shripad Kadam, Chairman, IIMM-Pune, expressing gratitude to everyone who contributed to the institute's growth and achievements since its establishment.

It was followed by an address by Mr. K R Nair, IIMM, VP (West). He shared his memories from the time of arranging funds to buy the new office & expressed his gratitude to all the well-wishers who wholeheartedly supported the Pune Branch in setting up its new office in Wakdewadi, Pune.

Mr. Mohan Nair, National Councillor, IIMM took all the members present in the program down the memory lane by showcasing a short film & a slide deck on the various programs conducted by Pune branch in the past. In his address he elaborated on the challenges faced by the members in the Exe. Committee of 2011-2013 in terms with the legalities, finances and the various approvals required to buy the new office. He was of the opinion that it was only due to the sheer determination and the team efforts of the members in this committee, Pune Branch was able to make the new office functional.

A few senior members & associates, who were involved with the purchase of the new office, also shared their memories with the audience.

The 10<sup>th</sup> anniversary celebration of the IIMM-Pune Office was a testament to the hard work and dedication of all members present in the Exe. Committee during the 2011-2013 tenure, and the wholehearted support & contribution from the well-wishers. It was a time to reflect on the milestones achieved and the impact made by the materials management community.

The program concluded with a vote of thanks by Mr. Arjunsingh Rajput, Hon. Secretary IIMM-Pune.

#### GROUP PHOTO – PARTICIPANTS OF THE PROGRAM



**57<sup>th</sup> Annual General Meeting :** IIMM Pune Branch held its 57<sup>th</sup> Annual General Meeting on 29<sup>th</sup> July 2023 in Hotel Shree Panchratna Pune, under the chairmanship of Mr. Shripad Kadam.

The AGM was attended by 145 Members which includes Past chairmen, Distinguished Members & Well wishers.

The meeting started with the Chairman, Shripad Kadam

welcoming all to the AGM 2023 & thanked them for their continued support to the branch.

The Hon. Secretary Mr. Arjunsingh Rajput then read the report of the activities conducted during the year. The report included the details of the several programs, onsite training programs, industrial visits, educational activities & the knowledge sharing sessions conducted by the branch for the members. He further informed the members that during the year 2022-23, Twelve Executive Committee Meetings and Five Education Committee Meeting were held by the branch.

It was followed by presenting and passing of the audited accounts for the year 2022-23 by Hon. Treasurer Mr. Prasad Rao.

Since we received 2 nominations for the post of Chairman, 2 nominations for the post of Hon. Secretary & 7 nominations for the post of 5 Executive Committee Members, an election was held for these posts. Voting was held for these posts, conducted by the presiding Election Officer Mr. Hitendra Admuthe, life member of Pune Branch. 128 eligible members cast their votes through ballot voting for these post.

We received only 1 nomination each for the post of Vice Chairman, Hon. Treasurer & 4 National Councillors, as such there were no election for this post and they were elected unopposed.

The election office declared results of the voting for the 3 posts that went into an election & the 3 posts that were elected unopposed as given below

#### IIMM-Pune: Executive Committee Members - 2023-25

Membership No.	Name of Member	Designation
L/0436/PN	Suhas Gawas	Chairman
L/5213/PN	Prasad Rao	Vice Chairman
L/1392/PN	Arjunsingh Rajput	Hon. Secretary
L/6658/PN	Suhas Gare	hon. Treasurer
L/0089/PN	K R Nair	National Councillor
L/0295/PN	Mohan Nair	National Councillor
L/3721/PN	Terrence Fernandes	National Councillor
L/3666/PN	Amit Borkar	National Councillor
F/7038/PN	Shaji Joseph	Executive Committee Member
L/6851/PN	Harshal Bardiya	Executive Committee Member
L/6129/PN	Sanjay Suranglikar	Executive Committee Member
L/6051/PN	Pramod Malpani	Executive Committee Member
L/3919/PN	Kaustub Khadke	Executive Committee Member
L/6661/PN	Shripad Kadam	

Ex-officio Committee member,  
Immediate Past Chairman

The meeting concluded with an address by the newly elected Chairman Mr. Suhas Gawas & a vote of thanks from the Hon. Secretary Mr. Arjun Singh Rajput.



## HOSUR BRANCH

**27.08.2023 - Annual General Body Meeting:** Annual General Body Meeting of IIMM Hosur Branch was held on 27th August 2023 (Sunday). Following Executive Committee elected for 2023-2025.



INDIAN INSTITUTE OF MATERIALS MANAGEMENT,  
HOSUR BRANCH OFFICE BEARERS, NATIONAL  
COUNCILORS, COMMITTEE MEMBERS FOR 2023-2025

Sl No	Name of Post Name of Nominee E-MAIL ID/MOBILE NO.
1	<b>Branch Chairman</b> Dr. SATTIANARAYANANE. K prema1912@gmail.com -9840875043
2	<b>Branch Vice Chairman</b> Mr. BALASUBRAMANIAN. G gbsmanian@hotmail.com 9880105120
3	<b>Honorary Secretary</b> Mr. JAIDEEP. C.R jaideep.chennagiri@teknich-euchner.co.in 9886105341
4	<b>Honorary Treasurer</b> Mr. SENTHIL KUMAR. D senthil.d@rediffmail.com 9901493357

5	<b>National Council Member</b> Mr. VISWANATHAN. P vid_shy@yahoo.com 9343343226
6	<b>Executive Committee Member</b> Mr. SHARAD M UMARJI umarji.sm@gmail.com 9489904515
7	<b>Executive Committee Member</b> Mr. BALAKUMAR. S balasrb73@gmail.com 9790019244

## 03.09.2023 Executive Committee Meeting

Action has been taken on the following agenda.

1. Educational Activities
2. Membership Drive
3. Workshop & In house Training Program
4. Suggestions & Discussion points has been recorded and Minuted.

## BANGALORE BRANCH

**26<sup>th</sup> August 2023 Free Webinar/Monthly Lecture Program :** IIMM Bangalore Branch had organised a Free Webinar/ Evening Lecture Program on “Impact of Human Resource on Supply Chain Management” on 26<sup>th</sup> August 2023. The Speaker was Ms. Rekha Nagaraj, Human Resource Ninja & Strategist, Board & CEO Advisor. About 70 Participants including Members from various sectors/organisations attended the Program.

**5<sup>th</sup> September 2023 Teachers Day Celebration :** To commemorate Teachers Day, a Faculty Meeting was organised on 5<sup>th</sup> September 2023 at IIMM Conference Hall. Faculties and EC Members attended the Program. Mr. Achyutha Rao. M.R, Vice Chairman and Course Co-ordinator welcomed them with a Boquete and invited Faculty and EC Members to share their experiences. Dr.C. Subbakrishna, Past National President & Senior Faculty and other faculties shared their views.

**9<sup>th</sup> September 2023 Workshop :** IIMM Bangalore Branch had organised One day Workshop on “Emerging Technologies in Warehousing & Logistics” on 9<sup>th</sup> September 2023 at Paraag Hotel, Bangalore. The Speakers from relevant industries, Mr. Sudhendra Dankanikote, Mr. Parag Gulhane & Mr. Raavi Singh handled the sessions. About 25 Participants including Members from various sectors/organisations attended the workshop. A very good feedback has been received from the participants.

**13<sup>th</sup> September 2023 Workshop :** IIMM Bangalore Branch had organised One day Workshop on “Negotiation Skills” on 13<sup>th</sup> September 2023 at IIMM Conference Hall. The speakers were Mr. Balasubramanian. G and Mr. Rajendran. K.P, senior Faculty of IIMM handled the sessions. About 20 Participants including Members from various sectors/organisations attended the workshop. The Interactive workshop has received a Very good feedback.

**14<sup>th</sup> September 2023 Industry Visit :** IIMM Team Mr.



P.M. Biddappa (N.C. Member Convener SCALE 2023), Mr. Karunakara. C.S (EC Member), Mr. Balasubramanian. G & Mr. Nagaraj. S.M Visited to UD Trucks India Private Limited, Met Mr. Suresh CFO discussed regarding Education Courses, Membership and signature Event SCALE 2023 & Golden Jubilee and asked for nominating Delegates.

**22<sup>nd</sup> September 2023 Free Webinar/Monthly Lecture Program :** IIMM Bangalore Branch had organised Free Webinar/ Evening Lecture Program on “Road Map to Trillion Dollar Business” on 22<sup>nd</sup> September 2023. The Speaker was Dr. Manoharan, Ph.D. (Computer Science), Ph.D. (Management), Functional Consultant (MS Dynamics ERP), Lean Six Sigma Certified Professional (Black Belt), Microsoft Certified Professional,. About 50 Participants including Members from various sectors/ organisations attended the Program.



*Mr. K.P. Rajendran, Speaker Handling the Session*



*Mrs. Rekha Nagaraj - Speaker with IIMM Officer Bearers*



*A Group of Delegate with Speaker*



*A view of Participants Workshop on Emerging Technology*



*Speaker Mr. Parag Gulhane Handling the Session*



*Mr. Balasubramanian. G, Speaker Handling the Session*



*Speaker Mr. Sudheendra Dankanikote handling the Session.*



*Branch Chairman Jayakumar. M addressing the gathering*



*Teachers Day on 05.09.2023 - Faculty and Officer Bearers*

## CHANDIGARH BRANCH

Technical wing of IIMM Chandigarh branch in collaboration of M/S Godrej Mohali kicked off 2nd batch of 11 MSME, Lean, Green and Zero defect Certification program to upgrade their processes to improve overall productivity, Lean and Green manufacturing and to improve quality of the product to bring it to Zero defect. After a lot of study, review of feedback recd from participants of 1st batch of 10 MSME and elaborate discussions with various industries, revised certification is having 30 parameters to assess and audit to issue certification in 5 levels. Technical team of IIMM consisting of M/S Rajesh Gupta, Arun Batra, S. K.Sharma, O. P. Longia, T. K. Magazine and V. S. Maniam. Above program launched at the premises of Godrej Appliances, Mohali, at the initiative of Mr Akash Sehgal Local head of Sourcing and entire Godrej Sourcing team on 27.7.2023 App 11 vendors were present. Mr Akash welcomed the idea and listed benefits of this certification in improving overall productivity and profitability. Mr Rajesh Gupta Chairman Chandigarh branch has given power point presentation about various aspects and Mr Arun Batra NC, and Mr S. K SHARMA Former National President answered various questions asked. by the Vendors. Program ended after Lunch was hosted by Godrej Appliances Mohali.



### Indian Institute of Materials Management

#### MISSION

- To promote professional excellence in Materials Management towards National Prosperity through sustainable development.

#### OBJECTIVE

- To secure a wider recognition of and promote the importance of efficient materials management in commercial and industrial undertakings.
- To safe guard and elevate the professional status of individuals engaged in materials management faculty.
- To constantly impart advanced professional knowledge and thus improve the skill of the person engaged in the materials management function.
- Propagate and promote among the members strict adherence to IIMM code and ethics.

#### CODE OF ETHICS

- To consider first the total interest of one's organisation in all transactions without impairing the dignity and responsibility of one's office :
- To buy without prejudice, seeking to obtain the maximum ultimate value for each rupee of expenditure.
- To subscribe and work for honesty and truth in buying and selling; to denounce all forms and manifestations of commercial bribery and to eschew anti-social practices.
- To accord a prompt and courteous reception so far as conditions will permit, to all who call up on legitimate business mission.
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# EXECUTIVE HEALTH

## SEASON WISE HEALTH TIPS

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**Health Tips for Winter Season:** As the winter season emerges, the likelihood of infection rises. In practically every home, viral infection becomes an issue. Therefore it is necessary to remain vigilant in cold weather. These suggestions can be useful if you're looking for a remedy that won't lead to issues like a cold, cough, fever, or other ailments. Now if you remember a few things, you can take advantage of the cold weather without getting sick. Here are some useful health tips to protect yourself in winter:

- Avoid frequent meals.
- Keep the body protected and warm.
- Drink more water.
- Diet rich in Omega-3 fatty acids.

**Health Tips for Summer Season:** Compared to the other seasons, summer can be particularly challenging and demanding. An individual's regular routine to stay active and fit can be disrupted by the oppressive heat combined with sweat, rashes, and sunburn. Your regular fitness routine may be seriously hindered by the intense heat of the sun, which may also be the cause of your weight gain. The sun's rays are also to blame for pimples, as well as for a number of other conditions, some of which can be rather serious, such as skin cancer and sunstroke. So now instead of worrying, let us explore these amazing Health Tips that you can follow to stay fit and healthy during summer:

- Eat healthy and light
- Protect your vision from the harsh sunlight
- Avoid Alcohol and Caffeine
- Drink plenty of water
- Stay indoors
- Avoid outside food
- Wear sunscreen
- Keep your skin protected from the sun
- Wear natural fabrics like cotton and linen
- Get plenty of rest
- Stay hydrated
- Intake of fresh fruits and vegetables should be increased
- Quit tobacco

**Health Tips for Autumn Season:** Without a question, Autumn is one of the best seasons of the year. It is a mesmerizing time when the weather gets cooler, the leaves change their color, and pumpkin spice lattes become once again available. But autumn can also present a number of health risks for you. Our routines may be disturbed by the changing of the seasons, and we may become more prone to colds and the flu. Therefore, it's critical to take additional measures to maintain your health during the Autumn season. So

here are a few Health tips that you should follow to be healthy and fine in the Autumn season:

- Include more fruits and vegetables into your diet
- Get enough vitamin D
- Include In-Season Food
- Engage in regular exercise or go for a walk
- Get Enough Sleep
- Drink a lot of Water
- Check your calorie intake
- Be mindful about washing your hand regularly
- Ensure timely Health Check Up
- Take a vaccine to boost your immunity

**Health Tips for Monsoon:** With the arrival of the monsoon comes the hope of rain, fresh beginnings, and a break from the summer's oppressive heat and humidity. However, not just people enjoy the rainy season. It is equally enjoyable for bacteria, viruses, plants, and mammals to be around. So we have come up with a list of wonderful Health Tips so that you may enjoy the rainy season to the fullest and without falling sick:

- Increase probiotic intake
- Increase vitamin C intake
- Avoid junk food
- Drink clean water
- Make every effort to avoid mosquitoes
- Eliminate mosquito breeding areas
- Incorporate a disinfectant into the bathwater
- Fruits and vegetables should be thoroughly washed
- Get enough sleep
- Exercise regularly
- Wash or sanitize your hands properly before eating
- Take precautions to avoid allergies
- Avoid being too close to sick people

### Daily Lifestyle Health Tips

**Health Tips for Glowing Skin:** If we are talking about different health tips, then how can we forget to discuss the most loved aspect of your body, i.e., the Skin?

A lot of people wish they could have lovely skin. People can improve their skin's health by changing their diet and way of living. Additionally, there are numerous skincare and makeup products available that can provide the look of glowing skin. So here are beneficial health tips to keep your skin ever glowing and ever healthy:

- Eat fresh fruits and vegetables
- Sufficient intake of protein
- Consume beneficial fats like nuts, olive oil, and avocados
- Intake of diets rich in nutrients, such as Vitamin A, B2, B6, C, D, and E, Omega-3 fatty acids, Zinc, etc.
- Quit Smoking

- Reduce alcohol consumption
- Get enough sleep
- Drink an adequate quantity of water
- Exercise regularly

Apart from this, if you are undergoing any skin-related issues and getting constantly haunted by them, then for your rescue, Felix Hospital is the Best Dermatology Hospital in Noida.

**Health Tips for Eyes:** Eyes are the windows to our souls, which is why we must take good care of them. It can speak a thousand words without our mouth uttering a single word. Besides, they also enhance our overall beauty. If you have to realize the importance of eyes, just close your eyes for a while and feel the darkness around you. Thereafter within a span of a moment, you will come to know how meaningless this world is without eyes.

With workouts and exercises, we take good care of the rest of our bodies, but we somehow neglect our eyes. Our eyes too need delicate care for their well-being like the other parts of our body. So here are a few tips for healthy eyes:

- Wash your eyes with cold water before bed
- While working, give rest to your eyes by shutting them at regular gaps
- Regular Eye-checkups
- Avoid Alcohol and Smoking
- Maintain proper sleep
- Exercise regularly
- Eat Healthy Food
- Take dietary supplements containing omega-3 and omega-6 fatty acids
- Drink a sufficient quantity of water daily
- Cleanse your eyes once a week with pure rosewater
- Use cucumbers to avoid puffiness
- Avoid rubbing your eyes
- Do not expose yourself to the sun without sunglasses

If you are suffering from any kind of eye disorder then instead of worrying, you should visit Felix Hospital, which is the Best Eye Care Hospital in Noida with the Best Eye Specialist in Noida.

**Health Tips for Ears:** Hearing is as important to us as software is to run any particular kind of file on the computer system or mobile phone. We process and use our hearing all the time. It aids in our ability to converse, be aware of our environment, and enjoy our favourite songs. Therefore, it is crucial to uphold excellent practices to protect and care for our hearing. So we have got for you these important tips that will help you maintain and enhance your hearing health:

- Around loud noises, wear earplugs
- Lower the volume
- Give a much-needed break to Ears
- Keep Your Ears Dry
- Don't Use Cotton Swabs
- Use medications as prescribed
- Maintain Your Physical Activity

- Reduce and control Stress
- Quit Smoking
- Recognize the Symptoms of Hearing Damage
- Visit Your Doctor Regularly For Checkups

If you are looking for treatment for any kind of problems related to the ear, nose, throat, neck, and head, then Felix Hospital is the name where your much-needed search stops. Felix Hospital is the Best ENT Hospital in Noida.

#### Work Lifestyle Health Tips

**Health Tips for Employees/Office workers:** Various research has proven that the sedentary lifestyle of regular office workers is hazardous to their health. Long durations of sitting, frequently without a break, appear to be the major issue. However, office employment is typically sedentary in nature. Now the issue that now arises is, "What can you do to minimize its severity and thereby improve your health?"

#### So here are a few important tips to keep in mind while being at the office:

- Every 30 minutes, get up and switch positions
- Take the stairs where possible instead of an elevator
- Try standing or walking meetings
- Drink plenty of water
- Use a stand-up workstation
- Get up and move around the office when the phone rings, or better yet, move around while chatting on the phone

**Health Tips To Improve Your Health :** Who doesn't wish to build abs like John Abraham or Hrithik Roshan? Who doesn't wish to have a perfect belly like some sensational Bollywood divas? Who doesn't wish to Quit smoking and become healthy and strong? So carrying a load of these huge goals on your shoulder, you tend to crash down in between the journey, and always fall short of your dreams. So the most daunting question that always haunts your mind is "How can this most fascinating dream be turned into reality? So today, this Health Tips Blog is going to answer your every long searched question.

Now the very first piece of advice for you is to never start with big, always go for smaller steps because they can easily get incorporated into your daily life, and are quite easy to maintain in the long term. So here are some small, simple yet most determining steps which once became your habit can change your life totally and make you land on a horizon that is even greater than your dreams:

- Go to bed earlier.
- Embrace deep breathing, meditation, and regular exercise.
- Avoid excess salt.
- Maintain a healthy weight.

Source: [www.felixhospital.com](http://www.felixhospital.com)



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