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MATERIALS MANAGEMENT REVIEW



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Central Regional Conference



**Honorable Cabinet Minister Shri Nitin Gadkari Ji
Inaugurated the Central Regional Conference
of IIMM Nagpur**

A Tribute to Former Prime Minister Dr. Manmohan Singh



Dr Manmohan Singh transformed India's economic from crisis to prosperity

As Prime Minister from 2004 to 2014, Dr Singh continued to prioritise the manufacturing sector, recognising it as a cornerstone for employment generation and economic stability under National Manufacturing Policy (NMP) which was launched in 2011.

Dr Singh's administration also emphasised infrastructure development as a catalyst for manufacturing. Initiatives like the Delhi-Mumbai Industrial Corridor (DMIC) and the Chennai-Bengaluru Industrial Corridor were conceptualised to create world-class infrastructure, including logistics hubs and smart cities, enabling seamless connectivity for industries.

Dr Singh's foresight extended to the energy sector, where he recognised the critical need for a sustainable and secure energy future.

One of Dr Singh's most notable achievements was the India-US Civil Nuclear Agreement in 2008.

Dr Singh's government also launched the Jawaharlal Nehru National Solar Mission (JNNSM) in 2010, which aimed to establish India as a global leader in solar energy

Dr Singh's economic reforms not only liberalised trade but also laid the groundwork for technological integration in India's manufacturing sector. His vision was instrumental in fostering Public-Private Partnerships (PPPs) to drive research and development (R&D) in key industries such as automotive, aerospace, and pharmaceuticals.

Under his leadership, initiatives like the **Automotive Mission Plan (AMP) 2006–2016** were launched to position India as a global automotive hub.

Dr Singh's policies were not just about growth; they were also about inclusivity.

Dr Singh emphasised skill development as a means to empower the workforce.

Dr Singh's approach to development was deeply rooted in sustainability. His administration's focus on clean energy and green manufacturing underscored his commitment to balancing economic growth with environmental stewardship.

Dr Manmohan Singh's contributions to the manufacturing and energy sectors are not just milestones but guiding principles for future policymakers. His vision of an open, inclusive, and sustainable economy has inspired a generation of leaders and industry stalwarts.

From the Desk of National President & Editor in Chief



Greetings from Your National President!!!

Wishing you and your families a joyous 2025 filled with peace, love and success with all blessings and good health.

2024 had been a great year for IIMM and I would like to pay my sincere gratitude for extending your support, whole heartedly throughout the year. I hope 2025 will bring many more achievements for IIMM and its members to take IIMM to the next level.

In an increasingly globalized, complex and technology-driven business landscape, supply chain excellence has become a critical factor for companies that want to remain profitable and competitive. Supply chain excellence is not just about reducing costs and increasing efficiency, but a cumulative process that encompasses strategic thinking, innovation and agility in the supply chain to efficiently meet customer demands, minimize risks and take advantage of new market opportunities.

The recent pandemic and war situations have led to an imbalance in the demand and supply of goods, making it difficult for global economic players to finalize their supply chain processes, which in turn affects the entire global supply chain. At the same time, these daunting situations have opened up opportunities for companies to use technology-enabled supply chain management solutions to anticipate the unexpected, enable demand forecasting and improve customer satisfaction.

Supply chain excellence cannot be achieved without the integration of new and innovative technological tools in the supply chain. For example, by gaining access to real-time data through embedded sensors, RFID tags and other tracking technologies, we can identify actionable data and areas to improve visibility into inventory, transportation and other supply chain issues that can be remedied by professionals involved in the supply chain by making well-informed decisions when unexpected challenges arise.

Supply chains generate enormous amounts of data that need to be processed, analysed, interpreted and used in the real world to gain intelligent insights about the supply chain. Machine learning and artificial intelligence are the backbone of supply chain analytics. These technologies continuously examine the data, develop algorithms and provide human-like answers to manage supply chains.

IoT constantly works in the background to collect and provide the raw data that is needed for the AI to work effectively. 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. 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.

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 etc.

I once again wish you all a very Happy and Prosperous New Year

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ARTIFICIAL INTELLIGENCE (AI) MODELS FOR CIRCULAR SUPPLY CHAINS

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Abstract : The main focus of this research paper is to identify the various AI models that used for creating circular supply chains. Circular supply chains and its principles are discussed. The transition from linear economy to circular economy is also highlighted. The power of digital technologies such as blockchain enable traceability & trust, IoT brings visibility & operational efficiency and AI is used for demand forecasting and resource efficiency are also emphasized. Secondary data / information such as published research papers in the reputed journals are used for discussion. A good number of companies who have adopted circular supply chains are also identified. The important companies like HP, Wal-mart and Philips are good examples for creating circular supply chains. Further research can be conducted the circular supply chains and its impact on sustainability.

Keywords: Artificial Intelligence models, circular supply chains, circular economy

Introduction : Artificial Intelligence (AI) is defined as 'the science and engineering of making intelligent machines (McCarthy, 1958) and it is considered one of most revolutionary technology of the later years (Davenport & Ronanki, 2018). AI is the process of building intelligent machines from vast volumes of data. Systems learn from past learning and experiences and perform human-like tasks. It enhances the speed, precision, and

effectiveness of human efforts. AI uses complex algorithms and methods to build machines that can make decisions on their own. Machine Learning and Deep learning forms the core of Artificial Intelligence.

Supply chain planners can use AI embedded in demand planning software to estimate not only demand but also the potential impact of scenarios such as economic downturns or severe weather events on demand, as well as on their own costs, production capabilities, and ability to make deliveries. Artificial Intelligence (AI) can keep all parts of a supply chain in balance with its ability to find patterns and relationships unlike a traditional non-AI system. These patterns can help optimize logistics networks all the way from the warehouse to cargo freighters to distribution.

Zara fashion style has adopted a comprehensive approach to AI, leveraging both technology and real-time data to transform every aspect of its business. By combining just-in-time inventory management with advanced predictive analytics, Zara has created a supply chain that is both agile and highly efficient.

Artificial Intelligence (AI) Models : Different types AI models are used. Three AI main types are: supervised learning, unsupervised learning and re-enforcement learning. Some of the important AI models are shown in the table 1.

Table 1: AI Models

Sl. No	AI Models	Details
1	Neural Network	Neural networks / Deep neural networks (AI/ML) are useful for analyzing large amount of diverse data.
2	Linear Regression	Linear regression is a common ML type searches for correlation between input and output variables.
3	Learning Vector Quantization (LVQ)	LVQ groups similar input values into data points, then into prototypes.
4	Decision Trees (DT)	DT model is used to arrive a conclusion based on the data from past decisions.
5	Random Forest	A type of ML that uses multiple decision trees to produce accurate decisions.
6	Linear Discrimination Analysis (LDA)	LDA is a subsection of logistic regression. It is the most frequently used when more than two values need to be defined.

7	Logistic Regression	A popular ML model. This is a preferred method for solving binary classification problems. It predicts one of the two values for dependent variables.
8	K- Nearest Neighbors (KNN)	KNN is a simple supervised ML model used for solving both regression and classification problems.
9	ML Models	Unsupervised AI models. Software trains algorithm, need not to be developed through human training.
10	Neive Bayes	It is based on the Bayes theorem. It is a ML model assures the input data values are unrelated.
11	Support Vector Machines (SVM)	A common ML model that accurately categories information with limited data.

Applications of AI

Some of the applications of are:

- Optimal warehouse management, cutting down on under-stocking and overstocking simultaneously.
- Shipping and delivery, manage warehouse capacity, track inventory, forecast demand for specific parts and components, integration of transaction records throughout global supply chains.
- Prediction of environmental impact of operations over a period.
- Optimization of transportation routes and logistics operations, which can help to reduce emissions.
- Traffic patterns, weather analysis and fuel efficiency to optimize delivery routes.

Circular Supply Chain Management (CSCM) : CSCM has been defined as: “The coordinated forward and reverse supply chains via purposeful business ecosystem integration for value creation from products/ services, by-products and useful waste flows through prolonged life cycles that improve the economic, social and environmental sustainability of organizations” (Batista et al., 2018a). Circular supply chains oppose the linear open ended system and it is based on three principles: design out waste and pollution, keep products and materials at their highest value and regenerate natural systems (Murray et.al., 2017).

A circular supply chain is a supply chain that aims to reduce waste and increase sustainability by reusing, recycling, and repairing products and materials. A circular supply chain is one that uses materials and goods as long as possible, instead of letting them go immediately to waste. In a circular supply chain, manufacturers reuse raw materials such as plastic, metal, cardboard, paper, steel, and glass. They refurbish and resell previously owned goods. In a circular supply chain, manufacturers think green every step of the way. They use recyclable materials when designing products

and packaging. They ensure that products are easy to disassemble and return for repair. They collaborate with stakeholders—retailers, local governments, and green nonprofit groups—to educate consumers on proper waste disposal, making it easier to collect and recycle various materials.

Many businesses are turning to circular economy and circular supply chain (CSC) practices to facilitate sustainability to improve ESG ratings and brand reputation. As sustainable procurement and supply chain management grows in importance, it's important to be informed about all aspects and tactics related to sustainable business. Adopting CSC practices is particularly helpful for procurement teams since the vast majority of pollutants a business generates are byproducts of the supply chain.

In the context of Industry 4.0 technologies enable companies to overcome the barriers to the full adoption of circular economy (CE) principles within organizations and supply chains. According to Potting et.al., 2017, the key principles which are leading to circularity are : reuse, rethink, reduce, repair, refurbish, remanufacture, repurpose, recycle and recover. Digital technologies such as blockchain enable traceability & trust, IoT brings visibility & operational efficiency and AI is used for demand forecasting and resource efficiency.

Circular supply chain strategies

- Design for circularity
 - Reuse and refurbish
 - Recycle materials
 - Minimize wastes
 - Focus on transparency
 - Collaborate with suppliers
 - Use technologies that enhance recycling and waste
 - Educate consumers
- PepsiCo, for example, sponsors a Recycle Rally

program in K-12 schools, in which students compete to recycle the most cans and bottles, winning prizes such as gift cards and Pepsi merchandise. Companies also encourage customers to return used products, either in stores or by mail, for refurbishing and resale. Figure 1 describes the concept of circular supply chains.

- Nike's Reuse-A-Shoe program encourages customers to bring old sneakers to local Nike sellers. Nike sorts the shoes and determines what can be recycled and what can be cleaned, donated, and reused by someone else. The program accepts any brand of athletic shoes, not just Nike.

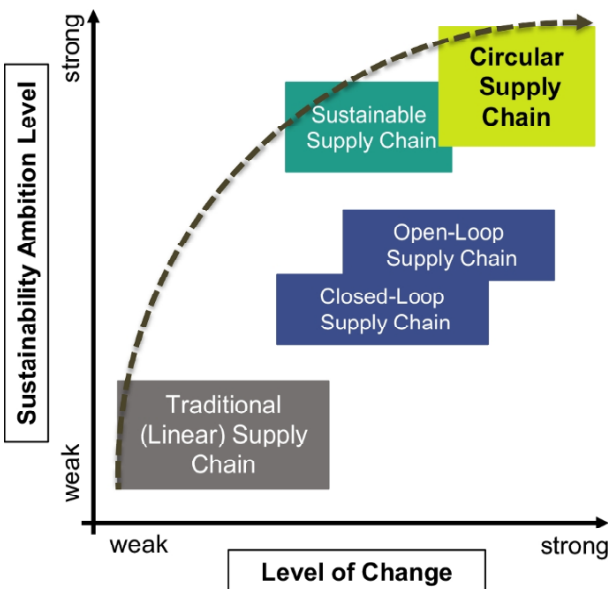


Figure 1: Circular Supply Chains
(www.springernature.com)

In the circular supply chains, the level of change and sustainability ambition level are strong. In the traditional (linear) supply chains the level of change and sustainability ambition level are weak.

Example, for mine operators, CE involves the minimization of waste generation, through all stages of extraction and processing, and the focused preservation of natural resources and their value by extending the life of extracted minerals.

Another example, cell phone makers reclaim old phones containing copper, gold, and tungsten and use the metals to produce new phones. Beverage makers or their container suppliers recycle plastic bottles and metal cans. And sometimes companies refurbish or repair products instead of recycling them.

HP, Wal-Mart and Philips are good examples for adopting circular supply chains.

Figure 2 describes the transition from linear to circular economy.

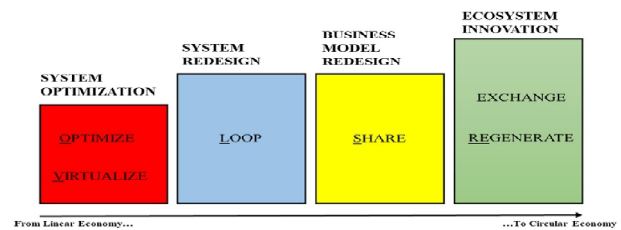


Figure 2: Transition from Linear Economy to Circular Economy

Conclusion : Creating circular supply chains facilitates to move towards circular economy. AI technologies could boost the development and design of completely new circular products, support the realization of a circular business models and help to optimize circular process. Explainable AI (XAI) models in enhancing transparency in machine learning and an improved method of reducing forecasting errors in practice which can strengthen the supply chain resilience. Companies like HP, Wal-mart and Philips are good examples for adopting circular supply chains. Digital technologies such as blockchain enable traceability & trust, IoT brings visibility & operational efficiency and AI is used for demand forecasting and resource efficiency. It is also found that each AI model is applied for each applications in the business segments.

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PLI SCHEME: A BOOST FOR INDIAN INDUSTRY

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We all look for appreciations and accolades once we do a good deed worthy of any mention. Government has also thought of honouring such companies who produce more and add value to the Indian economy through their productivity!

Make In India (MII) Scheme was introduced in 2014 with a view to increase productivity and employment in the manufacturing sector. The cornerstone of other developed nations like China's economy is found to be its manufacturing industry. A whopping 26 percent of China's total GDP is contributed by this sector underscoring its vital role in the nation's economic structure. In order to boost our manufacturing sector and bring back industries to India, MII scheme was introduced. Frequent additions have been made in the scheme to make the same more and more user friendly and advantageous to the industries.

As a part of the Make In India initiative, the Production Linked Incentive (PLI) scheme was introduced in March 2020 to boost Indian manufacturing. The scheme offers incentives to eligible firms on incremental sales for five years.

PLI scheme encourages both foreign and domestic companies to set up or expand their production units in India. The PLI scheme targets for more foreign investment in cutting-edge technology, exports, and assimilate India into the global supply chain. Eligible entrepreneurs must meet specific criteria to seek for PLI benefits.

PLI Scheme extends an average incentive of around 5% on net incremental sales over the base year of goods manufactured in India for a period of six years. Incentive for different sectors is dependent on different parameters fixed for them.

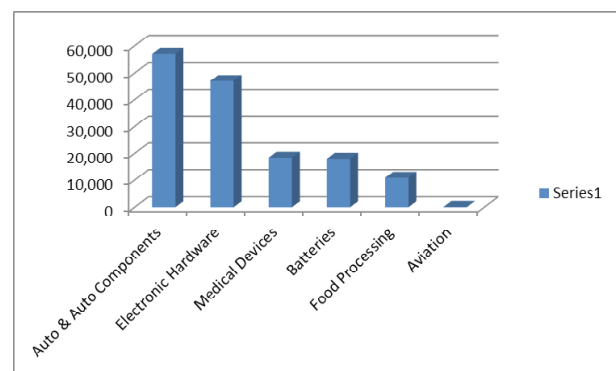
The main objectives of the PLI scheme are to comply with World Trade Organisation obligations and promote fair treatment for domestic sales and exports.

PLI Scheme aims to attract foreign investments in advanced technology and core sectors, boost exports, and contribute to economic growth.

This scheme offers various benefits, including reductions on import and export duties, tax rebates, affordable land acquisition, and support for anchor

investors managing new projects.

The scheme encourages sustainable development and investments in labor-intensive sectors, making it an effective and accessible program.



The benefits of PLI schemes include:

Supporting Key Sectors: The main target of PLI schemes are specific industries which are crucial for economic growth, technological advancement, and strategic importance.

Improving Export Competitiveness: The scheme encourages export-oriented production, leading to increased competitiveness in the international market and boosting India's exports.

Promoting Innovation and Technology: In order to be eligible for incentives under this scheme, companies have to adopt advanced technology and practices, driving innovation and efficiency improvements.

Strengthening Industrial Infrastructure: This scheme supports the growth of industrial infrastructure, making it simpler for companies to establish or expand their manufacturing units.

Accelerating Economic Growth: By supporting domestic manufacturing, creating jobs, attracting investment, and boosting exports, the PLI scheme contributes to overall economic growth and development in the country.

Boosting Manufacturing: PLI schemes encourage domestic manufacturing by providing incentives based

on incremental sales. This helps promote the production of goods within the country.

Reducing Dependence on Imports: By increasing domestic production, the PLI scheme targets at reducing our dependence on imports from other countries, improving self-reliance and reducing trade deficits.

Creating Employment Opportunities: The scheme supports labour-intensive sectors, so as to improve job opportunities and reduced unemployment rates in the country.

Attracting Foreign Investment: Enhancing FDI investments is a major objective of this scheme. Foreign companies are encouraged to set up their manufacturing units in India by offering incentives, promoting technology transfer, and increasing their investment.

Integration into Global Supply Chains: By attracting foreign companies and encouraging domestic production, the scheme helps integrate India into the global supply chain, making it a more attractive destination for trade and investment.

Though the PLI Scheme looks very attractive and investment oriented, several issues need to be addressed.

Some of the potential problems faced in the PLI scheme in India are:

Competition and Market Dynamics: Potential price wars and market distortions are taking place due to increased competition among eligible companies.

Compliance and Reporting Burden: A lot of paper work for getting benefits under the PLI scheme have added administrative burdens to comply with reporting and documentation requirements.

Disparity in sectors: Imbalances in the benefits received by different sectors can lead to potential imbalances in the economy.

Impact on Existing Investments: The new scheme may give a tendency to divert investments from existing projects or sectors that do not fall under the scheme, affecting their growth prospects.

Delays in Implementation: The implementation of the PLI scheme for different sectors might face delays due to bureaucratic processes, administrative challenges, or policy changes.

Eligibility Criteria: The eligibility criteria set by the government for participation in the scheme seems to be too stringent or restrictive for some companies, hindering their ability to participate.

Disbursements of Funds on Time: Authorities should be able to disburse the incentives to eligible companies on time. Delays can be challenging, impacting the scheme's effectiveness.

14 sectors are covered under PLI Scheme such as (i) Mobile Manufacturing and Specified Electronic Components, (ii) Critical Key Starting Materials/Drug Intermediaries & Active Pharmaceutical Ingredients, (iii) Manufacturing of Medical Devices (iv) Automobiles and Auto Components, (v) Pharmaceuticals Drugs, (vi) Specialty Steel, (vii) Telecom & Networking Products, (viii) Electronic/Technology Products, (ix) White Goods (ACs and LEDs), (x) Food Products, (xi) Textile Products: MMF segment and technical textiles, (xii) High efficiency solar PV modules, (xiii) Advanced Chemistry Cell (ACC) Battery, and (xiv) Drones and Drone Components.

So far PLI Schemes has generated over Rs 1.03 lakh crore of investment until November 2023. This has led to production and sales of Rs. 8.61 lakh crore and direct or indirect employment generation of over 6.78 lakhs.

For those watching stock market may be interested to know that listed companies like Idea Forge Technology Ltd, Dr Reddy's Laboratories, Biocon Ltd, Dixon Technologies, M&M, TVS, Bajaj Auto, Hero Motorcorp, Maruti Udyog Ltd, Tata Motors, Bikaji Foods, Prataap Snacks etc are the ones which are coming under the PLI scheme and get benefited.

However it is of concern that investment growth is significantly slow in textiles, information technology hardware, and speciality steel in the 2024 Financial Year

Target for investment in 2024 is Rs. 49,682 crore in FY24. Out of this only around 61% or over Rs. 30,695 crore has been made in all the 14 sectors during the first nine months of FY24.

Progress has been slow in case of medical devices, automobile and auto components, batteries, and white goods also.

Road ahead for PLI Scheme

The PLI scheme has all the strength to be a game-changer for India's economic prospects. The scheme is well structured in design, coupled with customization as per the specific needs of each sector. Though the kick start is slow, the scheme is expected to bear fruit in terms of achieving its objectives. Delays in implementation, stringent eligibility criteria, and funding constraint are to be addressed with earnest and removed as earlier as possible.

Wishing all IIMM members and family a happy and prosperous New Year.

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ARTIFICIAL INTELLIGENCE-NEW ERA IN SUPPLY CHAIN

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Development of artificial intelligence on a new era, in logistic, supply chain, where speed combined with accuracy, efficiency, is considered as one of the driving forces in an organization, reaching to new heights on operational excellence, with a power on data analytics, to predict demand, optimize delivery routes, on time delivery schedules, reducing time, also enhancing customer satisfaction in supply chain.

Sourcing: Artificial intelligence bears sourcing patterns, also behaviors, which will be able to connect with the best suppliers more quickly, with efficiency, as it can reserve the skills, required, for the supplier selection, negotiation, also on the value assessment in supply chain.

Beginning with sourcing artificial intelligence, is to gauge the standard spend analysis, on the basis on the available report, in order to produce the break down analysis, supplier analysis, cost analysis, on the available of the basic knowledge management of the suppliers, trend on the current market conditions, with the real reports of procurement, on a real-time basic knowledge, service conditions, on the basis of comparison of the variance, also the outward analysis, in order ensure that the data driven strategy, that artificial intelligence on procurement is abetting on the absolute deal, on the ensuring process of sourcing in supply chain.

Savings: Negotiations contained with artificial intelligence can be over turned with automation technology, also be able to assess every order, bringing with proper invoicing on a saving in which proper procurement, sourcing, can benefit in supply chain.

Contracts and Supplier management: With the help of Artificial intelligence contract management, supplier

management, will be able to adhere the difficulty to the value added chain of suppliers, on contractual conditions, by quantity, on the basic information on time, consumption, with the number of potential contracts, with suppliers, giving procurement, sourcing, on a good prospect giving priority in supply chain.

Order process: On conditions prevailing in artificial intelligence will guide, also give permission for requisitioning, ordering, process, materials, components, which later becomes a order, also fulfill the delivery on the single click of the mouse, on to which the most exceptional cases of preference, also professional attention is needed in supply chain.

Spend Analysis in Inventory control, where: artificial intelligence will be able to assess, also extract the real insights of spend data, on inventory, as it actually learns, with self corrections to maintain continuous accuracy on spend analysis on inventory control on procurement, sourcing, in supply chain.

Risk management-Many procurement organization with more expanding analytics has the critical problems, of risk management in procurement, inventory, delivery, process in supply chain, as artificial intelligence based analytics offers clean, also accurately classified data, with availability to procurement, inventory, on delivery, in organization without significant costs. Analytics with data can be added on the spend data to go beyond integrated market price in risk management in supply chain.

Artificial intelligence driven by Chat bots handling enquires in procurement, handles enquiries, that will transform organizations, on a leap, of bounds, of change on fast tracking system in supply chain. Artificial intelligence can comply with trading on commodities; also even outperform team of experts better in supply chain. The pace is moving faster, as artificial intelligence in managing procurement, sourcing, with proper lead time, on many circumstances, is liable to turn out to be in use, as it turns out to be competitive with challenges, but if it surpasses human expertise ability in every areas, its acceptance rate increases, also so does its capacity to absorb, as the data is taken in, it becomes necessary to absorb more data in inventory control, procurement in supply chain.

The gap between artificial intelligence, in procurement, sourcing, inventory control, with human expertise have grown tremendously, as even more significant at level,

that have been reached, with the first mover on lead, to make sure firms reach their tipping level of achieving superior act with artificial intelligence, on procurement, distribution, delivery, over human beings. Nevertheless there is a proactive rush ahead on the part of supply chain, as a business is trying to know before the arena in the field, in which artificial intelligence, procurement sourcing, inventory control solution will offer best value for investment in supply chain. Artificial intelligence becomes vital component in the new era to separate the excitement from the reality, also to understand how artificial intelligence is streamlining the technique of procurement, distribution, delivery, that is liable to bring a constrain in supply chain.

Artificial intelligence in the new era, of procurement, sourcing, distribution, ABC analysis, has the sustainability, on achieving higher results in supply chain, with the liability of benefits in the early stages: Artificial intelligence can vastly improve procurement, sourcing, process, also with the help on the significant trend in technology presentation, where competition is to create more sophistication in machine learning process. Machine learning is among the capability of computers to be self taught, with advance from the experience without having to be overtly **(without any concealment of secrecy)** to the programs. Being on human neural **(a computer system modeled in the human and nervous system) learning** these, the individual computers take the loads of examples, also able to apply layers to create on itself, which virtually interpret the solution without any human interference which can be helpful in distribution, delivery, customer service, in supply chain.

With mobile centric, being technologically motivated, movement for artificial intelligence in procurement, inventory control, can be compared how artificial intelligence can substantially improve the way procurement experts procure, pick orders, and also handle products, services. In practice artificial intelligence in procurement, distribution, would be able to forecast, and comprehend procurement requirement even before the experts could think of a way: example A strategic decision tool, being a recommendation engine, that the right to buy, at the right price of a commodity, that is required, with recommended action based on the market intelligence, or factors, also with the help of external data, that is liable to help procurement, inventory, with a recommendation based on cost model concept in supply chain.

Enhancing strategic procurement distribution, with artificial intelligence in a new era: Data analytic, current procurement procedure are creating more with better data, partly because they combine various systems, including contract management, electronic catalogue, e-procurement, Enterprise Resource Planning, Supplier Relationship Management. Many firms do not make use of data full in potential, while some do not make use of it at many times. Artificial intelligence procurement solution can aid: 1. Automate repetitive taste that occur

in the new era. 2. Disclose concealed potential in procurement, inventory. 3. Gain smart insights to resolve several issues to support procurement in supply chain. 4. Submit recommendation in procurement, inventory in supply chain. Artificial intelligence in procurement, delivery, also assists in preparing large amounts of data for intelligent analytics, also appropriate action using virtual assistant in supply chain.

Conversational interface is a hybrid that interacts in with user, combining chat, voice, or any other natural language, with user interface elements, like pressed button, magic menu, videos. Artificial intelligence can be used to listen to customers or suppliers queries, on a respond appropriately, with live video calls, which will have unique auto learning, feature that will help improving answer accuracy, with the introduction of video call centers, catalogues in the new era.. Conversational interface known as chat bots to incorporate both voice, also written dialogues, that can inhale chatting, with real human voice. As an alternative the clicking icons **(images)** also selecting syntax, **(selecting data from data base)** specific instructions in the communication part becomes hassle free, also acts straight forward with artificial intelligence procurement, delivery, also within inside chat bots , that can also accomplish difficult tasks, which can take the verdicts freely in procurement, delivery in a new era in supply chain.

Supply chains analysts, also specialists are now tooling into apply chat bots into supply chain management activities. Chat bots are just another blip **(refers to the various dots drawn on early warning radars connection based on plan position indicating display)** on the large scope radar of artificial intelligence technology, chat box is a computer program, which conducts a conversation via auditory textual methods such as a program, also that are often designed to convincingly simulate, how human would behave as in conversation with a partner. Chat bots can distribute that information faster than human beings, to which chat bots could swiftly communicate internally, facilitate messages set between customers for supplier queries being answered more efficiently in procurement transportation in supply chain.

Technology: Artificial intelligence used in procurement as media as chat bots is to create the potential of turning voice assistant, technology into a simulated service functionality, that will entirely revolutionize the procurement transportation, distribution, experience in supply chain.

Automation: Artificial intelligence is adapted to automation, that are even more complex, as more tasks are adhered into procurement, inventory, warehousing, in supply chain, as artificial intelligence will help to bring more purchasing under direct control, by facilitating the creation of requisition, from the data, that may be contained in e-mail, also data entered in requisition, entry speech recognition, is also poised to

change the requisition , on an approval process, also use of image recognition, technology, in which an option to send pictures, of an item which is ordered or re-ordered, thus simplifying the requisition process, also making spend analysis to actively manage. All technology can look for cost or price strategy discrepancies, unusual order, quantities, frequency of supplies, compare data to orders placed, with proper invoices, which will also be able to detect errors or discrepancy, that also predict purchase, transportation, as a non-performing procedures in supply chain

Benefits of artificial intelligence in procurement:
Inventory: Data classification for procurement, inventory, documents, invoices, orders, purchase orders, with master data of many suppliers of materials, that is likely to be spend on transparency, also with a valid baseline, with high level of automation, which in turn on time spend on mechanization, on a good pricing, proper inventory control in supply chain

Predict and Simulate: Artificial intelligence in new era neural network can be used in planning also proper simulation to forecast spend volume or simulate the effects of fluctuating material prices, or exchanges rates for planning, also with the simulation methods adopted in procurement, inventory, in supply chain.

Consistency and Compliance: Artificial intelligence does analysis, on the different prices of materials, attributed to the documentation, which can be processed, ideally for the price in invoice, orders, procurement information, records, also on the contracts negotiated in procurement, transportation, in supply chain. The task here in the new era is to detect price variance, also the lost on savings, also if any authorized additional payments are to be made in procurement, also in transportation in supply chain.

Process Mining: Analyzing of the actual inventory control process, to detect weakness, also starting point's process, improvements with automation using artificial intelligence, some of the process includes procurement, sourcing, to buy through channelizing, also being procured as stock items, with the objective is to monitor service level agreements, also calculate the process on reports, with Key Performance Indicators in supply chain.

Artificial intelligence is to analyze proper data in Cyber Security, accurately in the new era, with proper understanding on human beings, adopting machine learning, able to detect using algorithms', so as to identify the different ideas as Cyber security comes as a price, in force. Block chain in the new era can revolutionize operations in supply chain, improve, which also bring in transparency, on a proper direction, giving artificial intelligence in the new era to improve data, drawing analysis, with secure data tracking, ensuring proper data in 5.0 testing process in supply chain.

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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.
- To respect one's obligations and those of one's organisation consistent with good business practices.

EFFECTIVE LOGISTICS MANAGEMENT FOR EPC/ INFRASTRUCTURE INDUSTRY

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In India presently EPC (Engineering, Procurement and Construction) / Infrastructure industry is contributing a vital role for the development of economy of the country and which will be creating more development and scope of job in future to be a big self dependent country in the world. To be a successful industry by executing different projects in all the sectors on time, Logistics Management being a part of Supply Chain Management should play a vital role through 6 L Operation. This operation consists of Logical sourcing, Logical allocation, Logical placement of vehicle, Logical Tracking, Logical delivery confirmation and Logical freight accounting. To start this vital role we should follow certain steps:

A. Planning and Estimation:

1. Identification of items/volume/approximate weight/lead time at the very initial stage after getting the contract of that project and kick off meeting.
2. Tentative location considering geographical position of supply base(based on the approved vendor list of particular project) for all the items including Bulk Materials like Steel, Cement, Aggregate, Mortars, Concrete, Sand etc and Engineering bought out items from the list of items and specification available from Tender bid of that project.
3. Idea of volume and weight for a particular item can be received from any competent approved vendor considering minor deviation at later stage.
4. Enquiry can be floated to different transporter only based on the competency of the transporter for a particular region (East/ West /North / South) to get the competitive price.
5. After getting the offer, we can get the total volume of transportation and approximate cost.
6. Good discounted price can be availed based on the volume in particular region.

B. Mode of Transport to be considered:

1. Truck
2. Air
3. Rail
4. Water
5. Pipe Line
6. Inter Modal(Air, Truck, Sea combined for completing the transportation upto destination)
7. Packaging carrier

C. Cost Analysis based on the factors depending on carrier :

1. Vehicle related cost
2. Fixed operating cost
3. Trip related cost(no of Trips)

4. Quantity / Volume related cost
5. Overhead Cost
6. Overload & ODC cost with fine charges
7. Routing and scheduling of vehicles
8. Seasonal benefit
9. Labour related cost

D. RATE/TON/KM calculation: After getting the cost analysis as above Rate/Ton/Km can be derived for a particular consignment for a particular distance.

E. Total Budgeting: Based on the previous one total budgeting cost for Logistics in each case as well a total logistics cost for the Project can be determined and which will be useful while finalizing the offered price of supply vendors at later stage.

F. Performance Rating of Logistics Partner: Performance rating of Logistics Partner/ Transporter /carrier /Shipping Liner / Broker can be ascertained based on the analysis as below:

A. Transportation Time:

Transportation Time as per PO (in days)=

Transportation Time at actual (in days)=

Transportation Time Rating: $X/Y \times 30(\text{weightage})=$

B. Cost Criteria:

Lowest cost in Rs (initial among all the bidder before negotiation)=X

Ordered Transportation cost for vendor in Rs (initial before ordering and negotiation)=Y

Cost Rating: $X/Y \times 20(\text{Weightage})=$

C. Quality of Transportation Criteria:

No of Own vehicle or Hired (Total marks 30)=

Documentation and control Procedure(Total marks 35)=

Registration/ Licence/Bank approved (Total marks 35)=

Total marks towards quality of Transporter=X

Rating towards quality = $X/100 \times 30(\text{Weightage})=$

D. Project / customer criteria(based on any complain)(Weightage 20)=

Total overall rating: $A+B+C+D=$ (Excellent/Very good/ Good/Fair/Must improve/Warning/ Reject}

Note: 91-100=Excellent,81-90=V Good, 71-80=Good, 61-70= Fair, 51-60=Must improve, 40-50=Warning, Below 40=Reject.

E. Effectiveness of Logistics Manager:

Effectiveness of logistics manager can be measured based on the following:

1. Ability to manage day to day operation to meet the goals.
2. Ability to diagnose problems within the operation and to identify savings.
3. Ability to structure and manage logistics by correcting problems ,improving productivity and achieving improved benefit.

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EFFICIENT INVENTORY MANAGEMENT ENHANCES THE PROFIT

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Managing the inventory is inventory management. Today's inventory is tomorrow's production.

- Inventory management can be defined as managing the inventory of all categories of items in an effective and efficient way to achieve the optimum level with no loss of profits in a company.
- It is desirable for inventory management to be effective, efficient and result-oriented for organisations in terms of utility and cost.
- Inventory Management of items and materials fixes the priority on use, procurement, preservation and strict inventory control so that inventory levels will avoid over stocking and stock-outs situations.

I. Benefits of Inventory Management:

The three main benefits of inventory management are:

- A.** It ensures the continuity of operation without over and under stocking.
- B.** Optimisation of inventory level, promises cost reduction and savings.
- C.** Inventory Management ensures that the company is able to fulfill all incoming or open sales orders. It focuses on raising profits from sales of finished products.

II. Efficient Inventory Management:

A. Cost savings:

- Understanding stock trends means the company is attentive to the amount and place with better resolution to use available stock. The over stocking is avoided which brings cost savings to the company. Avoiding generation of non-moving, pilferage, and waste of self-life items brought through efficient inventory management is done to avoid losses which are savings to the company.
- This also allows to keep only required stock at each location of stocking.
- This decreases cost tied up in inventory and decreases overall inventory cost.

B. Improves cash flow:

- With proper inventory management of finished

products, the company spends money on inventory that sells resulting in better cash flow.

- By optimising inventory level, cost blocked in stock becomes less.

C. Satisfies external customers:

- Proper inventory management of finished products helps in developing loyal external customers by ensuring they receive the quality products and quantity they ordered without unnecessary waiting.

D. Satisfies internal customers:

- By ensuring the availability of inventory for manufacturing as well as selling, internal customers are satisfied.
- For purchase and warehousing departments, the production department plays as an internal customer. For the production department, marketing and sales departments serve as internal customers.

III. Inventory Management Challenges: Management of inventory in the form of all raw materials, components and finished products particularly, in large industries is not an easy task as there are many variables and constraints involved.

The important challenge of inventory management is to manage and maintain the inventory at an optimum level. It also means that inventory management should be such that a company neither accumulates too much stock nor faces stock out situations. Accordingly, inventory cost also to be at an optimum level.

- To avoid the situation of not having enough inventory to fulfill sales orders.
- To avoid the situation of not having enough inventory in terms of incoming items to continue production in the plant.
- Not understanding what input as well as finished items a company has in inventory and their location.
- It is difficult to get correct stock details as there is no way to know re-order time or which stock moves well.
- Outdated or manual processes in inventory management can result in wrong decisions.

- Changing Customer Demand: The pattern of tastes and needs of the target crowd change constantly posing challenges on inventory.
- Adequate utilisation of warehouse space because finding location of items can be a difficult task.

IV. Inventory Management is a concept:

- Inventory management is a universal concept which is being used by all concerned and all relevant executives in organising the operations and serving the intended purposes of the inventory. Manufacturing companies use inventory management for stocking of raw materials, spares, consumables, finished products and many other categories of items.
- Simplest and most humble example of inventory management is of the home makers in Indian using inventory management in their kitchens by stocking necessary items for preparation of dishes. Inventory of appropriate quantities of all required spices, flour, raw vegetables and other items are needed to run the kitchen. Any overstocking may spoil the item contrary to which the stock outs / shortages may lead to no preparation of food in the kitchen. Both situations must be avoided for proper functioning of the kitchen. For example: If a commodity like flour is not in stock, then can a homemaker prepare the bread (roti)? The answer is well known to everybody. This example demonstrates that right quantity of all necessary items is required at the right time to operate the kitchen in order to serve the purpose for making the food.
- Likewise, every manufacturing organisation needs to practice an efficient and effective method of inventory management in order to serve the purpose of inventory in the right quantity and at budgeted prices with no stock outs.
- FMCG Company can use inventory management for stocking and sale of various household items and commodities in such a way that all customers are served with the availability of items and there is no wastage in form of overstocking.
- Freight and Transport companies use inventory management of vehicles for optimising the use of these vehicles with the right transport cost and transferring the goods smoothly with no hold up or idling of vehicles.
- Offices use inventory management for having necessary number of office equipment and machines such that these are used optimally without being idle or not available for office staff.
- All companies right from small to large use and apply inventory management to serve its operations with raw materials and conclusively, finished products at an appropriate level.

- To summarise inventory management is used by all right from industrial to social organisations and even individuals in their personal life serving the intended purpose of inventory.
- The type of inventory can vary from one organisation to another depending solely on use and purpose.
- The above examples justify that inventory management is an important activity and all its dimensions should be understood by all readers so that it is rightly used to meet the intended purpose of the inventory.

V. Applicability of Inventory Management:

- The inventory management is such a versatile subject which is applicable right from your day to day life to industries and where not?
- It should be agreed that inventory management has many application areas inclusive of industrial, commercial organisations and kitchen by housewives with the example cited in previous pages.
- Inventory management in a kitchen is one of the fittest, relevant and glaring examples demonstrating the utility and impact of inventory on operations. The housewives implement proper inventory management to ensure that all required items are stocked to meet the needs of food preparation without any stock out situations. In the event of an essential item being absent, the food cannot be prepared. For example: in the kitchen if vegetables are stocked out then at least one dish cannot be prepared. At the same time, the housewife cannot purchase all the kitchen items in huge quantities as her monthly budget is limited and she has to operate within the available budget. The management of food for all the family members without any interruptions as per the need is her duty.
- The above cited example of inventory management is truly applicable in the industries also. An industry should have a comprehensive inventory management policy covering all the aspects such as identification of the need, approval to maintain required quantities, procurement, inspection, transport & shipping, storing, maintaining and issuing for the use.
- It is also inferred that inventory management is an integral part of all major functions in any industrial organisation.

All associated professionals from concerned departments are responsible to follow an inventory policy stated by the company and implement the same so that the industry operates without any stock outs and over stocking.

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ENVIRONMENTAL SUSTAINABILITY IN LOGISTICS

CHRIS CUNNANE

Supply chain sustainability can mean a lot of things to a lot of people. As I have written about before, supply chain sustainability, or the notion of going green, is a hot topic as companies and countries look at their overall carbon footprint and look for ways to be more environmentally friendly. A few ways companies can begin to offset their carbon footprint is to take a deeper look at product packaging, energy efficiency, alternative fuels, route optimization, and returns and recycling programs. However, sustainability in logistics goes well beyond these initiatives.

Today's article is the third part in a series featuring surveys from APQC on supply chain topics including last mile and digital transformation. APQC conducts research on supply chain and logistics to help organizations assess the performance of their own processes and functions compared to their peers. Most recently, the APQC has conducted best practice and benchmarking research on environmental sustainability. The report provides a cross-industry perspective on environmental sustainability in logistics including fuel consumption, screening logistics providers, packing material, sales order delivery, and reverse logistics based on 1,157 valid participants. In the survey, APQC used a series of performance metrics, including net promoter score, customer retention rate, perfect order performance, and on-time delivery among others, to identify the top performing companies. Below are the results from the cross-industry report for environmental sustainability.

Sustainability in Logistics Results : Logistics providers contribute to the total picture of sustainability for many organizations. However, at the median, only 42 percent of respondents screen new logistics providers using environmental sustainability criteria and only 50 percent regularly assess existing logistics providers for environmental sustainability. However, for top performing companies, these percentages jump to 52 percent and 60 percent respectively.

One area of concern for the long-term health of the world is the use of packaging in both the manufacturing and shipping of products. Many companies have seen both the inefficiencies of their packaging, as well as the wastefulness, and taken this as a direct challenge for major improvements. One way that companies are trying to alleviate packing waste is through the use of recycled, re-used, and renewable packing materials. For respondents at the median, 80 percent of total annual packing material consumed comes from recycled or re-used materials and 60 percent comes from renewable sources. For the top performers, however, 90 percent of total annual packing material consumed comes from recycled / re-used materials, and 74 percent comes from renewable sources. A TMS can save shippers money in a lot of ways, including simulation and network design, load consolidation and lower cost mode selections, and multi-stop route optimization. Load consolidation means less trucks on the road to deliver the same freight, which is important as far as carbon emissions. With an eye toward reducing carbon emissions, for respondents

at the median, 75 percent of sales orders are delivered to customers all in one delivery (as opposed to multiple trips/deliveries to the customer for a single order). By comparison, 85 percent of orders are accomplished in one delivery for those at the 75th percentile.

Companies are also looking at ways to make last mile deliveries more sustainable, and vehicle capacity plays a key role. This measure refers to capacity utilization when the vehicle has been loaded at a departure location (such as a plant or fulfillment center) and is departing to deliver products to their final destinations. The average vehicle capacity for vehicles departing for the last mile delivery is 85 percent for respondents at the median, while top performers hit 90 percent average vehicle capacity. The APQC report on sustainability in logistics finds that renewable energy from alternative fuels can play an important role as organizations seek to reduce greenhouse gas emissions. As a percentage of the total fuel consumed in transportation and warehousing, respondents report that currently only 7 percent comes from renewable sources (at the median). This percentage does not vary much for those respondents at the 25th or even 75th percentiles. This shows that all companies still have a long way to go when it comes to fuel consumption from renewable sources.

A final way to improve supply chain sustainability is by optimizing returns at the store and warehouse level. According to research I did around omni-channel returns management, it became clear that sustainability practices are also an important aspect of returns management. Companies need to decide what they will do with the returned item, which will vary based on the type of product. Per our survey, 64.2 percent of respondents indicated they re-use the returned item, and sell it "as is." According to the APQC report, reverse logistics can also play a role in helping organizations reduce their environmental footprint. The percentage of total annual logistics and warehousing costs associated with physical transportation, storage, or handling of returned product is typically quite low – totaling just 5 percent of costs for those at the median. However, as the use of e-commerce increases, so does this percentage. Currently, only about half of respondents are using the same network for reverse and forward logistics, but as supply chains become more circular, this will likely change.

Final Thought : The APQC report on sustainability in logistics sheds new light on a hot topic. While we all know about the importance of sustainability, it is critical for companies to continue to innovate and push for more sustainable packing and delivery options. The results of this survey are a starting point for being able to measure the impact of sustainability in logistics, and hopefully we will be able to update this article next year to see how the market has changed.

Source: logisticsviewpoints.com

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ROLE OF SUPPLY CHAIN IN INDUSTRY 5.0 ERA (MISSION SUSTAINABLE TRANSFORMATION)

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India, although a developing country, yet, recognized internationally, as a country, which can not be ignored. Not a conservative India, but, a modern creative, innovative and enterprising India.

Technology is fast spreading its wings – advantage India ! Manufacturing sector, which includes MSME and Startups, making ground breaking innovations. Indian Industry continuously and progressively achieving higher operational efficiencies, shorter product launch cycles, practicing lean manufacturing concept in product customisation. All effort to remain afloat in severe global competition.

Not to get carried away with whatever little is achieved so far, Indian industry is adopting the concept of Q C C D A : Quality Cost Consistency Delivery Attitude. Now the industry is preparing to introduce AI (Artificial Intelligence) in a big way, to avoid early death and stay globally ahead.

As technology continues to evolve, we find ourselves at an exciting tipping point, where a number of significant innovations are set to spark incredible change for Business, Society and the Natural world. Latest information available mention emerging technology trends of particular importance to enterprises etc. For example – Quantum Computing to transform multiple industries and learn about the value of Web3, the rise of Industry 5.0 and how technology can protect Bio-diversity.

As a refresher, I would briefly like to highlight various Industrial Phases as:

- PHASE-I : First Industry Revolution – major achievement : emergence of Railway Steam Engine.
- PHASE-II : Second Industry Revolution – Mass production + generation & use of electricity.
- PHASE-III: Third Industry Revolution – Introduction of Computers.
- PHASE-IV: Fourth Industry Revolution – Focus on Communication and Inter-connectivity, Automation, Machine Learning and Realtime Data. It originated in Europe in 2011, at Messe Hanover Trade Fair. The multi-country industrial giant BOSCH described the wide spread integration of Information

& Communication Technology plus industrial production, by adopting the term: INDUSTRY 4.0.

PHASE- V: Industry 5.0 (current phase) – SUSTAINABLE TRANSFORMATION. Integration of Human Resource – Technology Advancement – Protecting & Preserving Environment. Objective to ensure over all improvement in economic growth and quality of human life etc. etc.

Till the Industry 4.0, revolution in industrial automation drastically reduced employment opportunities. This phase simultaneously witnessed rapid destruction of nature, especially forest wealth. At the same time, population explosion overshoot the employment opportunities available for youth. Education Sector (not skills friendly), expanded fast, but, lack of matching job opportunities, created discomfort in the society.

Therefore, Industry 5.0 having theme of “Sustainable Transformation”, emerged. Sustainable Transformation means Harmony between Human Resource – Technology – Environment. While it is adequately understood to engage country's youth in productive activities; there should not be any compromise on technology infusion and progressive transformation'

In the era of A.I, mass scale use of non- conventional energy, EVs, and Rocket Science and other innovative & proven technologies, as well as emerging Service Sector, are new avenues of job opportunities. Therefore, Continuous Learning and Skills Upgrade, would be the “mantra” for survival of the fittest, in this fast changing world.

The ideal thought process for “Sustainable Transformation”, having emerged for development of the Nation, is ECO LIVING CONCEPT. That means Government – Industry – Citizens work and live in unison to deliver low carbon products and services. The objective is that the Nation turns round with eco-friendly features, consisting of new order industrial community, by maximising all avenues of human welfare, such as : Education, Healthcare, Shelter and Work for all. Clean air, potable water, green and unadulterated food, medicines and commodities, green public transport, greenery and vegetation. Minimizing carbon emission, applying latest technology for water and waste management and electricity etc. Improving safety and

disaster management infrastructure. Minimising loss of natural resources, due to heavy rains, floods, cyclones, and other natural calamities. Long awaited dream project of integration of nation's rivers is the answer. Besides, riverways transport would give a big boost to economy and generate mass scale employment.

Supply Chain profession is essential partner in progress, for Industry 5.0. SCM has to give its best and the latest. Paradigm shift in the SCM thought process has to be :

- Change from ... Functions to Processes
- Change from ... Inventory to Information
- Change from ... Products to Customers
- Change from ... Price to Cost Competitiveness...
- Change from ... In House to Outsourcing
- Change from ... Transactions to Relationships
- Change from ... Profits to Profitability

Supply Chain Professionals should adopt GREEN PURCHASE CULTURE as core buying policy and practice it in daily routine. Do not buy any product, manufactured with coal as media. Prefer to buy products manufactured with non conventional energy as media. If a product (say electric motor) in price comparison qualifies as L1,

but consumes XX+ energy, compared to motor offer placed at L3, consuming power only X- , buy L3 for long term advantage. Do not buy any plastic based consumable, which is not bio-degradable. Buy only bio-degradable packaging and packing material. Use – return – reuse packing material with bulk long time customers. Give preference to buying products consuming least possible water in manufacturing. Contribute your bit to save Ozone Layer. Do not buy equipment dependent on Ozone depleting substances like CFCs. Use only Ozone friendly substances . Above are a few examples to create awareness on environment friendly buying. Buy only from vendors following high degree of ethics, highest safety standards and do not use child labour. Educate your Vendors Production and Quality teams on importance of green purchase culture. Keep your SCM team updated with latest on the subject. Use only diesel trucks for goods movement complying with BS VI norms or running on CNG, or preference to EVs. Renovate your Warehousing on eco-friendly concept and while doing so, use only eco-friendly materials. Act now for the future of your grand children.

Last but not least – treat your in house SCM Team as “Human Institution”. Keep yourself motivated to motivate your team, for progressive competency & performance towards Mission SUSTAINABLE TRANSFORMATION.

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NAVIGATING THE CHALLENGES OF AI ADOPTION IN PROCUREMENT

Incorporating AI into procurement is a technical endeavor that must consider the human impact to be successful, 4C Associates' director of digital innovation writes.

Joe Gibson, director of digital innovation at commercial and supply chain consultancy 4C Associates. All opinions are the author's own.

Recent conversations about artificial intelligence adoption in procurement increasingly focus on its potential to completely revolutionize the function. While this may be true in many cases, the greatest challenge facing procurement teams isn't going to be purely technological — it will also be also cultural.

Integrating AI into the organizational technology stack may seem like the priority, but it's the human element of procurement where the real impact lies. The true success of any AI initiative depends on the readiness of the functional culture to adapt, innovate and learn from new approaches to which AI systems will inevitably give

rise.

Integrating AI into procurement culture : The success of any AI implementation is determined by the willingness of people to embrace it. Procurement teams need to actively foster a culture of innovation, where new approaches are encouraged even if they don't yield immediate results.

A real-world example of this challenge was seen in a large U.K. infrastructure organization, which attempted to deploy AI-enabled contract lifecycle management software. The system was designed to read, profile, determine patterns, assess risk, flag commercial variances and store complex subcontract agreements across its supply chain. The expected outcomes included greater visibility, enhanced resilience, reduced risk and improved margins.

Despite the clear potential of the technology, the implementation was derailed by resistance from the legal function. Fears of job displacement ultimately

overpowered the potential benefits, leading to the initiative's failure.

Without the buy-in from cross-functional teams and a shared vision of how AI can complement human expertise, such innovations are unlikely to succeed.

The importance of a well-defined use case : A well-defined use case is crucial for AI adoption in procurement. Without a clear understanding of how AI will specifically benefit the function, organizations risk implementing technology that fails to deliver meaningful value. The most successful AI projects are those grounded in real-world challenges.

An oil and gas company experienced this first-hand when it deployed an optical character recognition (OCR) software — an earlier form of machine learning — across its accounts payable function as part of an efficiency initiative. Unfortunately, the project failed due to a lack of clearly defined requirements.

A standard template wasn't utilized, pre-processing wasn't properly implemented, and the company took a 'big-bang' approach across multiple countries and languages without enhanced training for the remaining staff. Instead of increasing efficiency, the project led to an increase in accounts payable staff to manage exceptions, as well as an eight-week supply chain payment backlog.

This example underscores the importance of not only defining the use case, but also ensuring proper planning, training, and execution are in place before deployment. AI should solve specific, well-understood problems to truly add value, and collaboration across teams is key to ensuring it's implemented correctly.

The data paradox: addressing immature data : A significant hurdle in AI adoption is the misconception that AI will instantly solve all procurement challenges. In reality, many procurement functions first grapple with poor-quality data that is unstructured, unclean and poorly governed. Ironically, AI has the potential to enrich and manage such data, but only if organizations first acknowledge the limitations of their current datasets.

Addressing these data issues requires a strategic approach. Standardizing master data fields, limiting the number of staff who can modify supplier data, and harmonizing the intake process are essential first steps. For organizations at the early stages of their journey, introducing a manual gatekeeper to oversee data governance is crucial. As organizations mature, they can automate these governance processes by integrating validation through an application programming interface, or API.

But expectations must be managed accordingly. Rather

than expecting AI to provide perfect solutions from day one, procurement teams should focus on improving data quality in tandem with implementation. This ensures that AI solutions have a solid foundation to deliver real value.

Start small and stay agile

Starting small with manageable pilot projects allows teams to demonstrate quick wins, building confidence and momentum for larger-scale AI adoption. By learning from past digitalization efforts, procurement teams can avoid previous pitfalls and chart a more successful course for AI.

Agility also enables organizations to iterate rapidly, refining their AI strategy as they go.

For example, a procurement team might initially deploy AI to optimize supplier selection based on cost and delivery speed. However, as market conditions evolve — such as in today's complex geopolitical landscape — they can quickly adapt the algorithm to prioritize new factors like supplier diversity or sustainability. This ensures that AI remains aligned with broader business goals while being flexible and adaptable to changing procurement needs.

By staying agile, organizations can ensure that AI not only solves immediate problems but continues to evolve in a sustainable way that meets long-term objectives.

Keeping people at the center of AI transformation

AI should be seen as a tool that complements human expertise, rather than replacing it. The procurement stakeholder must remain at the heart of every AI initiative, using the technology to enhance decision-making, not to dictate it.

Striking the balance between AI and human intelligence ensures that procurement teams can leverage the full potential of the technology while still applying the critical thinking and judgment vital to the function that only human beings can provide.

Fundamentally, the future of procurement lies in how effectively AI is integrated into an organization's culture. Procurement leaders must lead this transformation by placing people at the center, promoting collaboration and encouraging agile experimentation. The inevitable adoption of AI is going to be a journey, and its success depends on people and culture as it does on technology. The procurement function that can embrace this balance will be best positioned to thrive in an AI-driven future.

Source: www.supplychaindive.com

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NEW DEVELOPMENTS IN SUPPLY CHAIN MANAGEMENT: 2024 AND BEYOND

WRITTEN BY GUEST BLOGGER

Supply chain management (SCM) is at the forefront of a technological and strategic revolution, driven by global demands and rapid innovations. As businesses face increasingly complex challenges, integrating cutting-edge solutions has become essential for maintaining resilience and efficiency. Below, we explore the top trends transforming the SCM landscape in 2024 and beyond.

Blockchain for Enhanced Transparency : Blockchain technology is transforming supply chains by providing greater transparency, security, and traceability. By using an immutable ledger, blockchain records every transaction in a tamper-proof manner, which significantly reduces fraud and enhances material tracking. This has made it increasingly attractive across industries, from food and beverage to luxury goods, where ensuring product authenticity is critical.

The market for blockchain in supply chains is expected to exceed \$3 billion by 2026, driven by its ability to improve operational efficiency and visibility. Companies such as Walmart have already started using blockchain to track food products, ensuring better safety and reducing the risk of contamination. Moreover, blockchain's role in asset tracking and smart contracts is also gaining traction, helping businesses automate processes and reduce the need for intermediaries. This innovative technology is proving essential for companies seeking to enhance supply chain resilience and build consumer trust.

Digital Supply Chain Twins : A Digital Supply Chain Twin is a virtual model of a physical supply chain that integrates real-time data from IoT devices, ERP systems, and external sources to mirror operations, enabling businesses to simulate, analyze, and optimize their processes. It provides predictive analytics for demand forecasting, risk management, and scenario planning, while also enhancing efficiency, reducing costs, and improving resilience through optimization and real-time visibility. Industries like retail, manufacturing, and logistics use this technology to streamline operations, reduce waste, and adapt to disruptions, making supply chains more agile and sustainable.

Circular Supply Chains : As sustainability becomes a key focus, the shift from linear to circular supply chains is gaining momentum. Circular models reintegrate unused materials back into production, minimizing waste and supporting zero-waste initiatives. This approach aligns with stricter environmental regulations and growing consumer demands for ethical practices.

In line with these developments, OLIMP Warehousing has pioneered solutions to reduce carbon emissions by addressing empty miles and distressed freight challenges. Their eco-friendly approach supports businesses in achieving sustainability without compromising operational efficiency.

Supply Chain as a Service (SCaaS) : The concept of Supply Chain as a Service (SCaaS) is indeed transforming logistics by outsourcing supply chain operations to specialized providers. This model leverages technologies such as cloud computing to enable real-time inventory tracking, scalability, and optimization of logistics processes. Businesses benefit from enhanced flexibility, the ability to adapt to market fluctuations, and reduced costs while focusing on core innovation. SCaaS providers also facilitate resource optimization and improved safety through advanced digital systems

AI-Driven Innovation : Supply chain technology is rapidly evolving, with Artificial Intelligence (AI) playing a central role in this transformation. AI is being leveraged to enhance operational efficiency across various functions of the supply chain, from predictive demand forecasting to real-time tracking and inventory management. The focus is on integrating AI into broader automation strategies, allowing for more responsive, data-driven decision-making. Notably, industries are increasingly adopting AI for real-time transportation visibility, robotic automation, and advanced analytics. For businesses looking to stay competitive, adopting AI and other emerging technologies is essential. However, it's important to consider the risks and ensure that these technologies are implemented holistically across the organization to maximize their value (Source).

Conclusion : The supply chain industry is evolving rapidly, with technological innovations and sustainability taking center stage. Embracing trends like blockchain, AI, and circular supply chains allows businesses to enhance efficiency, resilience, and competitiveness. As we look to the future, companies that prioritize these advancements will be well-positioned to navigate the complexities of modern supply chains.

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Source: www.allthingsupplychain.com

OPTIMIZING SHIPPING AND LOGISTICS IN THE E-COMMERCE ERA

DEBORAH SURRETTE, SCB CONTRIBUTOR AND
CHIEF COMMERCIAL OFFICER AT VEHO

Over the past four years, the e-commerce landscape has experienced a seismic shift. The pandemic-fueled surge, in which e-commerce volumes grew at an aggressive 18% annually, has now stabilized to a more moderate 8.8%, according to a study released by Shopify. This recalibration, coupled with the lingering effects of the pandemic and the ongoing impact of inflation, has transformed the economics of parcel delivery, putting immense pressure on traditional logistics systems and retailers.

Consumers today crave fast, on-time and affordable shipping, but retailers are caught in a tough spot, especially entering peak season. Rising shipping costs and labor shortages are making it harder than ever to meet these expectations. The pressure is mounting, forcing retailers to rethink their approach to last-mile delivery this peak season and beyond. To navigate these challenges, retailers must prioritize customer needs while carefully evaluating the return on their shipping investments. Following are some key strategies that can help brands close this gap, and thrive in the evolving world of e-commerce.

The key to success in this new era lies in understanding evolving consumer expectations. Recent research from McKinsey & Company revealed what matters most to customers when it comes to delivery: speed, shipping costs, reliability and convenience. While speed still reigns supreme in e-commerce, it's just one piece of the puzzle when it comes to building a loyal customer base. For example, McKinsey also found that a staggering number of consumers (88%) are likely to abandon their shopping carts due to poor shipping terms, while 85% say they will not shop with a retailer again after having a poor delivery experience.

The research also showed a high sensitivity to shipping costs, with many consumers willing to accept slightly longer delivery times to avoid high shipping costs, especially if brands can meet or exceed expectations in other areas. This underscores the importance of offering free or reduced shipping, even if it means standard delivery times.

Such a strategy can significantly improve conversion rates and drive sales. Fulfilling the delivery timing expectation that you set with customers is critical. Accurate delivery windows, clear communication and careful handling of packages can also help retailers deliver a positive customer experience in a competitive marketplace. A truly satisfying delivery experience goes beyond just cost and speed. It's about providing a seamless and convenient process from start to finish. In e-commerce, convenience, reliability and transparent communications are highly valued because consumers want more control over the delivery and returns process.

By offering flexible delivery options, such as scheduled delivery times, alternative delivery locations and returns that can be picked up at a customer's home can significantly enhance the customer experience and set a business apart from its competitors.

Retailers must pay attention to what customers actually want. They want free shipping, of course, but will pay amounts proportionate to the purchase. Happy customers buy more, and more often. Over 90% will reorder after a good delivery experience; 65% won't after a bad one. A good delivery experience also drives a 19% increase in repurchase rate and 8% increase in net promoter score. At the same time, a good delivery experience can reduce retailers' customer service costs — including the price of replacing missing packages — by 35%.

Technology enables real-time tracking and proactive communication customers. A recent Incisiv study shows that 96% of brands currently believe real-time delivery updates and tracking are important to their shoppers, but only 86% offer real-time delivery updates and tracking.

Offer your customers flexibility in their delivery and return options. This can include providing scheduled delivery times, alternative pick-up locations, and hassle-free returns.

Lastly, harness the power of data and technology to gain insights into your customers' preferences and optimize your operations. Utilize data analytics, artificial intelligence and machine learning to understand consumer behavior and tailor your shipping strategies accordingly. Invest in technology to streamline your shipping and logistics, improve efficiency and reduce costs.

The e-commerce landscape will continue to evolve, and consumer expectations will shift alongside it. Brands that stay attuned to these changes and adapt their shipping and logistics practices accordingly will be well-positioned for success. The key lies in understanding customer preferences, prioritizing reliability and communication, embracing convenience and flexibility, and recognizing the growing importance of sustainability.

By reimagining their shipping and logistics practices, retailers can exceed customer expectations, foster brand loyalty and drive long-term success. The future of e-commerce is bright, and those who adapt won't just survive, but thrive.

Source: www.supplychainbrain.com

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SUPPLY CHAIN IMPACT OF INCOMING TARIFFS LIKELY TO VARY FROM COUNTRY TO COUNTRY

BART DE MUYNCK

Donald Trump's election win will have major effects on trade policy, climate change

On Feb. 23, I published an article on FreightWaves titled "2024 presidential election may have big impact on supply chains." We now know the outcome of the presidential election so we can begin to analyze the actual impacts on supply chains when President Donald Trump will be sworn in on Jan. 20, 2025.

Trump's presidential election victory has huge implications for U.S. trade and tax policies, climate change, the war in Ukraine, electric vehicles, and illegal immigration. While some of his proposals would require congressional approval, here is a summary of policies he has said he would pursue in his second term.

Trump has floated the idea of a 10% or more tariff on all goods imported into the U.S., a move he says would eliminate the trade deficit. But critics say it would lead to higher prices for American consumers and global economic instability. Tariffs inhibit global trade, lower growth for exporters and weigh on public finances for all parties involved. They are likely to raise inflation in the United States, forcing the Federal Reserve to act with tighter monetary policy.

Impacting prices of imports will have huge repercussions on supply chains, on where and how manufacturers and retailers will source their supplies. This consequently will affect logistics routes and trade lanes. Firms mostly pass import costs on to the customer, so tariffs are likely to be inflationary for U.S. buyers, forcing the Fed to keep interest rates high for longer or to even reverse course and hike borrowing costs once again.

Trump has also said he should have the authority to set higher tariffs on countries that have put tariffs on U.S. imports. He has threatened to impose a 200% tariff on some imported cars, saying he is determined in particular to keep cars from Mexico from coming into the country. He has also suggested that allies such as the European Union could see higher duties on their goods. But Trump has targeted China in particular. He proposes phasing out Chinese imports of goods such as electronics, steel and pharmaceuticals over four years. He seeks to prohibit Chinese companies from owning U.S. real estate and infrastructure in the energy and tech sectors.

While the Trump administration might hit countries like China and Mexico the hardest, other countries may benefit. Among potential winners, Brazil might enjoy

greater trade with China given that Beijing replaced all its U.S. soybean imports with Brazilian ones when trade tensions flared during Trump's first presidency.

U.S. oil producers are looking forward to less regulations on crude production under a Trump presidency, meaning higher oil supply and consequently lower prices. This would be great news for the logistics industry that has seen high costs of operating fleets while faced with low freight rates. But it's not that straightforward. Trump has also vowed to put more sanctions on Iranian and Venezuelan barrels, meaning the global market could become tighter, potentially boosting prices. At the same time, the increased likelihood of trade wars under Trump could dampen global economic growth and slow oil demand.

Trump has vowed to reinstate his first-term policies targeting illegal border crossings and to forge ahead with sweeping new restrictions. He has pledged to limit access to asylum at the U.S.-Mexico border and to embark on the biggest deportation effort in American history, which would likely trigger legal challenges and opposition from Democrats in Congress. In light of an aging population, this might impact supply chains already under pressure of a labor constraint and in need of immigration reforms.

When it comes to sustainability, the new administration will change course there as well. Trump explicitly promised to pull the U.S. out of the Paris climate accords again, after the U.S. reentered the agreement under President Joe Biden. While that is a step back, reversing the Environmental Protection Agency's electric truck rule with national emission standards might be a more realistic approach for trucking operations, especially in California.

Although it will be months before the new administration takes office and the suggested changes are implemented, one thing is for sure: We will see greater volatility in supply chains, creating an even larger need for companies to be prepared for the disruptions ahead by becoming more agile and for industry organizations to work closely with Capitol Hill.

The views expressed here are solely those of the author and do not necessarily represent the views of FreightWaves or its affiliates.

Source: FreightWaves.com.

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SUPPLY CHAIN TECHNOLOGY IN 2025: ADVANCEMENTS, BENEFITS AND CHALLENGES AHEAD

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In 2025, organizations that embrace these advancements while safeguarding their networks will lead the way towards supply chain excellence.

As we step into 2025, supply chain technology continues to be a dynamic and critical resource for shaping global commerce. Advancements in AI, Internet of Things (IoT), blockchain and automation have redefined how goods are sourced, transported and delivered. On the precipice of a new year, the state of supply chain technology brings along anticipated advancements, the power of visibility and the persistence of cybersecurity challenges that need urgent attention.

Advancements on the Horizon : Next year promises transformative advancements in supply chain technology from AI to track and trace. AI and ML are expected to take predictive analytics to new heights. Mike Kreider, chief information officer at DHL Supply Chain, says considering the growth of AI in the supply chain, expect major developments within the next five years. This will have a powerful impact on customer-centric business approaches for logistics companies, as use cases are identified across a multitude of workflow processes at all transactional levels.

In the future, Michael Hung, CEO at TradeBeyond, says it's clear that AI will play an even greater role, and as these systems become more sophisticated, they will not only help identify and mitigate risks but also adjust operations dynamically to align with sustainability standards and market demands.

According to Jared Green, director of global sales, automation & emerging technologies, at Crown, some of the most significant technological advancements currently shaping the supply chain industry include operator assist technology, real time location systems and enhanced telematics solutions. These technologies can be powerful tools on their own, explains Green, but as more providers collaborate with customers to integrate these data streams into their existing business systems, the value generated could grow exponentially.

With the Internet of things (IoT) now almost everywhere it gives access to real time data in order to know exactly where goods and assets are in the supply chain. And it's based on that large source of data, Jean-Luc Rominger,

VP of engineering at QAD explains, but also the capacity of monitoring and seeing the details in advanced analytics dashboards allowing to-down exploration it gives a good view of what the current state is; more importantly with ML capabilities, it's now possible to predict and/or evaluate multiple possible scenario based on multiple criteria and a given level of uncertainty.

"This is pointing out 3 significant technologies but when it comes to highlight the most significant one, I would rather say it's the capabilities of cloud computing, making now all this possible and not only for big players but to each and every company and this is a game changer as it will emphasis emerging new players and more innovation in the supply chain industry," says Rominger. "Enhanced algorithms will provide more accurate demand forecasting, inventory management and route optimization. These tools will help companies reduce waste, manage costs and improve customer satisfaction by preempting market fluctuations."

Today's robotics aren't the Jetsons of yesteryear. Ben Lee, VP of integrated systems sales at Swisslog, says in the supply chain, automated robotic solutions and software technology support market growth and provide greater control and visibility of the whole supply chain, while also offering a more robust, dependable solution—in which the end users can more confidently base their business objectives, quality control and capacity plans. In addition, automated solutions lower operational costs and increase the speed and efficiency of distribution supply chains.

"One of the things we will continue to see is software playing an increasing role in maximizing productivity of robotics. Robotic systems will no longer be optimized mechanically, but rather with software. For instance, the physical speed of robots is nearly at its maximum. For further gains to be made, it now becomes about optimization through the use of software that incorporates AI learning and helps facilitate a more effective use of data," explains Lee.

Blockchain adoption is likely to grow as companies recognize its potential for secure, transparent record-

keeping. Enhanced blockchain networks will allow end-to-end traceability, offering stakeholders confidence in the authenticity of products, from raw materials to final delivery.

“Blockchain technology exists today and is applicable to many segments along a supply chain, although not necessarily to the same degree. To maximize the benefit and utility of blockchain, however, companies need the right data and thus various methods of data collection. This requires coordination and collaboration among many players in the typically highly diverse supply chain ecosystem. Therefore, the small number of blockchain implementations of today are likely to need several more years before they mature to meaningful, comprehensive integration within the end-to-end supply chain,” says Kreider.

Implementation Strategies and Benefits

Where technology ends and implementation begins, there are several strategies to getting innovation to work for you. Finding where the most logical application makes sense can sometimes be the determining factor in which solution works, and which doesn’t. For example, Lee says, AI in the warehouse makes for more dynamic, more agile and more responsive spaces. It is enabling robotics to self-learn from experience, which means that robotic picking ability improves over time with enhanced picking strategies for new products.

As we delve into AI, a new emerging space for supply chain use comes in the form of Generative AI. With Generative AI, Kreider explains, there’s been an expansion in applications that are automating certain back-office processes, as well as supporting operational processes.

“These can range from streamlining IT helpdesk requests, automating simple HR inquiries, or generating translations. In addition, we believe there will be a steep increase in adopting sandboxed environments in which companies can use generative AI tools to try new ideas and initiatives,” says Kreider. For example, DHL has developed its own GenAI Hub to test out automating certain processes, developing content and generating information, all with a product funnel approach that includes a pilot period. Two of the use cases in this funnel include:

- A GenAI application for business development that provides insight by enabling faster analysis of a customer’s requirements. With GenAI handling the data, business development colleagues can focus on the customer’s challenges. This allows the business development team to quickly create more accurate and personalized proposals.

- A GenAI application for solutions design provides colleagues a data cleansing tool. With GenAI quickly cleansing and sorting the data, solutions design colleagues are able to respond faster and with more enhanced solutions.

Integration really becomes pertinent within these high-impact areas where AI can replace repetitive manual processes.

“Multi-enterprise platforms serve as central hubs that allow seamless data exchange between departments, suppliers and logistics partners. By consolidating data on these platforms, companies can access real-time information, allowing them to make quicker, more informed decisions and ensuring alignment across the supply chain,” says Hung.

The two main ways for companies to integrate emerging technologies Rominger describes as these:

1. They either they rely on third parties such as SaaS Software providers having these capabilities already enabled in their solutions or
2. With the easier access to native cloud services, they are able to build the solution suiting the best to their specific requirements.

“In both cases the promise is to get more control on their supply chain and a better visibility driving costs down. In my role, with my experience and interaction with customers I can only give tangible benefits in a context of going through third parties SaaS Software,” explains Rominger. “What we see mainly is improvement of the service level coupled with a reduction of the inventory and possible scraps. They benefit from a short-term return on investment with low risks around change management or possible failing projects.”

Powerful Visibility and Transparency

Ultimately, companies that successfully integrate AI are seeing faster response times to market changes, improved compliance and enhanced ability to forecast and plan accurately, according to Hung. Traceability solutions offer an automated chain of custody that helps businesses verify product origins and compliance standards. This saves time on audits and gives companies a reliable, transparent way to track products from origin to destination, supporting both operational efficiency and sustainability goals.

In 2025, supply chain visibility will remain a top priority. Organizations are deploying many of these technologies for this specific use including IoT sensors, blockchain and AI to provide real-time insights into every link of the supply chain.

“Blockchains, paired with logged records from sensors,

provide greater visibility of products as a trusted, immutable ledger. Supply chain professionals and customers can access a blockchain ledger with an interface from which they can see each product's shipment status and accurately confirm product attributes, such as whether it was locally produced, organically grown, or received certifications," says Kreider. "Additionally, using blockchain technology, companies can quickly identify points of unauthorized removal or the insertion of products, helping to investigate theft, fraud and counterfeiting. Finally, with hundreds of international trade laws and regulations, a blockchain-supported level of transparency enables supply chain organizations to ensure supplier and distributor compliance."

Transparency strengthens relationships with partners and customers, allowing businesses to stand out in an increasingly ethical consumer market. It also ensures compliance with regulatory standards, such as environmental, social and governance (ESG) requirements.

ESG innovations are also reshaping how companies approach social and environmental responsibility. As Hung explains, tools that map and assess environmental and social impacts throughout the supply chain are helping organizations ensure they meet their ESG goals more effectively. In an example, TradeBeyond's AI-powered chain-of-custody solution helps companies validate and track product origins through each stage in the supply chain. Solutions like these aid in regulatory compliance but also allows for more efficient documentation, which builds trust and transparency with consumers who demand sustainably produced goods.

"Implementation of new technology often creates a need for more visibility and transparency. Specifically, if customers are working on continuous improvement initiatives or deploying new technology, a deep understanding of the operations and supporting processes is required to ensure success. Wireless fleet and operator management systems, like those by Crown, have continued to evolve to capture and better manage this information. Technology providers are beginning to utilize simulation and advanced reporting tools to help guide customers through their technology journey," explains Green.

Threats of Cybersecurity

While technology is revolutionizing the supply chain, it also introduces vulnerabilities. Cyberattacks on supply chains have grown in frequency and sophistication in 2024, targeting weak links in the network to disrupt operations.

Rominger says first and foremost the single sign on (SSO) authentication based on modern multi-factors used to connect to software and system allows to secure and identify each and every connection—that's crucial. Then, the security level of the software and infrastructure used behind the scenes should be protected and monitored by best of class dedicated third party systems (updated real time), and combined with a least privilege access layer policy in place.

"It's also important to have external evaluations with different kinds of certifications confirming the good practices in place but also identifying possible improvements in a constantly changing world. Data privacy protocol, encryption in transit and at rest is another standard practice adding safety. When it comes to AI and very important additional factor is to ensure that anything sensitive either in the questions asked to Generative AI for instance will stay in a kind of private space and not be used to enlarge the public knowledge that can then be reused outside of the expected landscape of use," says Rominger.

Today, companies are using AI and ML to identify the unusual patterns and anomalies that indicate potential cyberattack. Kreider says in order to mitigate damage, these technologies can quickly adapt to new threats and automate response actions. Companies can also use behavioral analytics to monitor user and network behavior, detecting the deviations from normal activity that signal potential security breaches.

"Quantum computing can also provide an extra layer of digital privacy and security to counteract hacking. For example, quantum mechanics principles can be used to create almost unbreakable cryptographic keys and ensure secure communication channels are resistant to quantum attacks. Quantum computing can accelerate ML algorithms used for anomaly detection, pattern recognition, and real-time threat analysis. In addition, quantum computers can simulate complex cybersecurity scenarios and potential threats more accurately and rapidly, helping companies achieve proactive defense strategies," says Kreider.

Supply chain technology in 2025 will be even more intelligent, interconnected and efficient than we've seen. However, success will require not only the adoption of the right cutting-edge solutions for you but also a commitment to visibility and transparency to mitigate cybersecurity woes. Organizations that embrace these advancements while safeguarding their networks will lead the way towards supply chain excellence.

Source: www.sdcexec.com

SUPPLY CHAIN WANES IN 2025, BUT RESILIENCE REMAINS KEY TREND

JIM O'DONNELL IS A SENIOR NEWS WRITER, TECHTARGET

The Supply Chain might be losing its seat at the executive table, but the work must continue to provide more resilience and agility.

Supply chains saw unprecedented attention in the last five years due to disruptions caused by the COVID-19 pandemic and several environmental and geopolitical events. But those days are beginning to fade.

While resilience and flexibility will remain top supply chain trends in 2025, evidence suggests that organizations have started to pull back from investing in technologies to introduce these characteristics as other enterprise issues take priority, according to industry experts. In the new year, they said, one of the biggest challenges chief supply chain officers will face is making the case to get the investments they're seeking alongside competing priorities.

Investment slows : Supply chains remain vulnerable, but organizations appear to be "taking their foot off the gas" when it comes to investing in supply chain resilience, according to the recently published supply chain survey report from McKinsey & Company. The report is based on surveys conducted in May that asked supply chain leaders what they've done and what they plan to invest in for the year ahead.

Because of the pandemic, organizations realized they needed to make supply chains stronger and more flexible, according to Knut Alicke, a partner at McKinsey and co-author of the report. They subsequently set up short-term intervention measures such as control towers and war rooms that enable more visibility and collaboration, and then took more structural measures such as implementing end-to-end planning.

"They looked into their sourcing network, which is where a lot of the problems came from," Alicke said. "Like being too dependent on one supplier, one region, one country or one technology, so they started to split this and look to alternate sources."

In 2021 and 2022, supply chains became a boardroom concern, and there was a significant investment in building up resilience. However, while supply chain disruptions still occurred in 2023 and 2024, they were not as extreme, and interest in the issue diminished.

"Now [the chief supply chain officer] has lost the seat at the table as companies are now focusing more on cost cutting and inventory reduction," Alicke said. "Risk is still an important topic, but it's a little bit pushed out."

Investment in digital technologies such as AI and analytics to improve supply chain resilience will continue, but the investments will need to be justified to a greater degree, said Mike Dominy, an analyst at Gartner.

"There's a greater degree of scrutiny by CFOs on digital investments in general and digital supply chain investments, but I don't see any abandoning yet," Dominy said. "It's quite clear that using technology effectively helps organizations be more efficient and effective in supply chains."

Chief supply chain officers have always needed to manage costs, but in 2020, their budgets and latitude to spend increased to meet pandemic challenges, he explained.

"[The CSCOs] wasn't being pressed as much on costs because companies couldn't even get product in," Dominy said. "But then inflation rose, costs went up, and CSCOs were getting asked again about costs and how to get them under control."

Keep the focus on agility

Supply chain has moved to the strategic center of organizations since 2020, but this has started to change, agreed Ashutosh Dekhne, a partner at EY Global Consulting Services.

Disruptions have become a continuing issue, so supply chain leaders must find ways to manage them, primarily by becoming more agile and flexible, he said. Doing so can help the supply chain be a growth engine rather than a cost center by bringing insights back to the commercial or financial sides of the organization.

"This could mean not just saying whether you can service a given potential customer need, but understanding the cost and the margin that you can get from serving that need," Dekhne said. "They need to be able to bring those strategic insights to the organization so that they can be seen as a core part of that team that drives the strategic agenda forward."

The diversification of suppliers, which helps to enable resilient and agile supply chains, will continue, he said. Part of this trend is about avoiding reliance on one supplier and adjusting inventory management as needed, by both using just-in-time inventory systems and maintaining inventory stocks.

"You now have to have a mix where you have a ware-

house for resiliency and agility, but you also have a vendor-managed inventory program where you don't carry all that on your books," Dekhne said.

Supply chain visibility is another important trend, but it needs to go further than tracking and tracing goods, he said. To do this, organizations are implementing cloud-based digital technologies to create a unified data model across the entire supply chain, including manufacturing data, planning master data, supplier master data and customer data.

This added visibility can enable instantaneous root cause analysis of issues, Dekhne explained.

"For example, if on-shelf availability is not there, why?" he said. "Is it because we didn't produce X, or we produced X, but we shipped it to the wrong places because forecasting issues said we were short there?"

Better visibility is a trend that will continue because organizations have experienced significant losses from disruptions due to the lack of visibility into their extended suppliers, said Abe Eshkenazi, CEO of the Association for Supply Chain Management. Most of the disruption occurred in SMBs, which are not as well financed or resource rich as larger suppliers for traceability and transparency, leading to more investment in technology and digital transformation.

"Being resilient, adaptable and agile to the various disruptions requires predictive information in terms of what the possible outcomes are going to be," Eshkenazi said. "So we're seeing significant investment on AI, predictive analytics [and] machine learning."

Tech rewards come with risks

AI — particularly generative AI — advanced analytics and automation are technologies being implemented into supply chains, but analysts caution that these can carry risks as well as rewards.

For example, becoming more digitally enabled creates more cybersecurity risks and possible exposure to nefarious actors, according to Eshkenazi.

"They're not coming at the top tier. They're coming at your extended suppliers who may not have the same protocols or security requirements as the top tier," he said.

Organizations don't always have the skills and experience to take full advantage of the new technologies and will often accept the recommendations from AI systems uncritically, he added.

"[There's a lack of] experience or critical analysis of the information coming into the organization and what the systems are telling you," Eshkenazi said. "[We need] problem-solving and critical thinking for individuals, as opposed to overreliance on technology. We need to blend the investment in technology with a commensurate investment in the talent to take advantage of the technol-

ogy investment."

AI is the "bright and shiny object" right now, but there's a lot of hype. The new year will be a time to sort out what's real and what's not, said Simon Ellis, an analyst at IDC.

"When you talk to the boots on the ground in companies, they're not clear what's happening or if anything's happening with AI," Ellis said. "There's an interesting disconnect between the supply chain planners and the hyperbole that exists around the broader environment."

One area of disconnect is defining the types of AI being used and the use cases, he said.

For example, traditional AI such as machine learning has been used in demand forecasting applications for at least 20 years. But, he said, using generative AI to create reports or provide customer support is still mostly aspirational or at the pilot stages for most organizations.

"Remember that five or six years ago, blockchain was going to change the world. Well, not exactly," Ellis said. "I'm not suggesting that GenAI is blockchain, but often, the more people extol the benefits and talk about massive change, the less likely it's actually going to happen. It's still early days for this stuff."

It could still take two to five years for generative AI to be used at scale in the supply chain, as organizations work out how to resolve concerns about data security, Alicke said. The technology is acknowledged as a valuable opportunity, but most organizations are wary about sharing data in an open cloud environment.

"Private cloud is an option now, and tools and ideas are popping up, like having GenAI copilots or being able to communicate with suppliers and customers," he said. "It's developing, and we'll see a lot of interesting applications in the next two to five years."

Ultimately, for supply chain in 2025, it's important that organizations hold on to what was learned in the last five years and keep it at the forefront of business strategy, Alicke said.

"Supply chain was in focus two or three years ago, and now it feels like it's losing this focus," he said. "Because of the cost cutting, you are basically reducing resilience or increase fragility, which means that in one or two years, everyone may see that the supply chain is fragile and they again need to do something to increase resilience."

Source: www.techtarget.com

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TRACKING THE DIGITAL TRANSFORMATION OF THE SUPPLY CHAIN

BRIDGET MCCREA

Shipper demand, vendor innovation and advances in technology have worked together to get the vision of the digital supply chain over the finish line.

Once a distant vision that few organizations could attain, the digital supply chain has come into full focus as companies across all industries adopt the technologies, re-imagine their processes and embrace the changes necessary to orchestrate an end-to-end digital supply chain. This can mean different things depending on the organization—some are further along on this journey than others—but the end goals of eliminating waste, increasing efficiencies and improving the bottom line are fairly constant.

Credit the recent supply chain disruptions and the associated challenges with driving some of the latest progress on the digital front. In response, advancements in technology, customer requirements and vendor ingenuity have all come together to birth a host of new solutions and software that address shippers' most pressing problems.

And while the digital supply chain was already taking shape well before the pandemic emerged in 2020, this singular event has proven to be the catalyst needed to get more organizations on board with the idea.

"We've definitely seen an uptick in interest in the digital supply chain," says Howard Turner, director of supply chain systems at St. Onge Company. Companies that are grappling with the high volume of e-commerce orders, for example, are investing in more warehouse automation and related tools that help them manage this influx. Many of the same companies are also dealing with massive labor constraints—yet another driver of digital supply chain investment this year.

In most cases, Turner says shippers are using a discerning eye when shopping for warehouse automation and other solutions, and most want to see specific, proven use cases before they'll hit the "buy now" button.

"Companies want to understand what the use cases are and where automation makes the most sense for their operations," Turner explains. "They also want to know what the return on investment (ROI) looks like and are 'dipping a toe in the water,' so to speak, versus just doing broad [technology] rollouts across their

operations."

Companies are also looking to the technology vendors for more comprehensive solutions that tie together in a "control tower" format, versus just working independently of one another.

Using application programming interfaces (APIs) that allow disparate solutions to be readily integrated with one another, vendors are pairing up solutions into more cohesive, unified platforms that manage different aspects of the supply chain.

Once in place, supply chain control towers also help companies wrap their arms around the massive amounts of data that their systems are producing—not all of which is unified or easy to take action on. "When you consider all of the various systems and data points that exist within an operation, whether it's warehouse management systems, warehouse automation or supply chain visibility solutions," Turner explains, "being able to collect and act on all of the data that's available in those systems is pretty intriguing."

Harnessing the power of collaboration

As evidenced by the many cohabited exhibitor booths at the recent Modex 2022 trade show in Atlanta, more software and hardware vendors are also collaborating for the greater good.

So rather than developing their solutions in a vacuum, they're pairing up to create solutions that manage more than just one singular aspect of the supply chain. This, in turn, is helping shippers build out their end-to-end digital supply chains without having to piece together too many disparate, disconnected systems.

At Modex, container manufacturer FLEXcon was demonstrating how its products paired well with a Locus robot, which was in the booth to show off the successful pairing.

And, terminal emulation developer StayLinked was demonstrating how its technology supports Zebra Technologies' enterprise wearable Android mobile computer for picking, packing or order handling. These are just two of the many real-life examples of how technology vendors are merging their strengths to help bring the digital supply chain into focus for a larger

number of companies.

Turner says he's seeing similar examples of vendor collaboration in the WMS space, where the software serves as the "center of the universe" and has to be able to play well with other software, equipment and devices. Unfortunately, some older systems can't always get in the game and wind up thwarting a company's digital supply chain journey and overall visibility. This is slowly changing as companies assess their current systems and invest in more modern, interconnected solutions.

Getting technology solutions integrated and sharing data with one another is only one aspect of the complete digital supply chain; there's also a human element to it. Shippers also have to be able to extract and take action on that data, and this may require an internal organizational shift. Put simply, the focus cannot only be on the information technology itself; it also needs to incorporate the decision-makers within the organization.

"You need a clear chain of command established for taking action on the data and making decisions based off of it," says Turner. "This is an important aspect of the end-to-end digital supply chain that's often overlooked when the focus is really more on the IT, and not necessarily on building the organizational structure behind it."

Setting the stage for success

Knowing that some companies are still running their supply chain operations on spreadsheets, legacy solutions and disparate systems, Christian Titze, research vice president, supply chain technology, at Gartner, sees three key digital supply chain developments on the near horizon. For starters, he says more vendors are opening up their planning applications to be able to "ingest more real-time operational data." This will help companies lay down better plans and then respond accordingly should those plans be disrupted.

"Software vendors are building solutions that can ingest more operational data from the supply chain ecosystem in real-time," says Titze, "and that build on the end-to-end data to drive more [informed decisions]."

He also expects supply chain software suites that include both planning and executional applications—think Infor, E2open or One Network Enterprises—to expand as companies look for ways to reduce the complexities of software integration. "When you use different best-of-breed solutions, you wind up with a high degree of integration effort," Titze points out. "But when you are on a single platform, you can reduce that effort because everything is in one place."

Titze also expects to see an uptick in the number of intelligent data platforms available on the market,

which currently includes large data platforms like Google, Amazon, Microsoft and IBM, but is now also being populated by boutique AI vendors that have jumped into the fray.

And finally, he's seeing more vendors re-modernizing their software architectures in favor of microservices (a software development approach that structures an application as a combined collection of services).

The use of microservices started in the insurance and finance industry and later moved into manufacturing execution systems (MES) and enterprise resource planning (ERP). It's now moving into the supply chain software sector. "We're seeing early adoption of microservices in the supply chain, and particularly in the multi-enterprise area," says Titze, "when Manhattan Associates just rewrote their applications to microservices."

What's ahead?

As he surveys the supply chain software space right now, Mike McCullough, vice president, North America supply chain lead at Capgemini Invent, observes quite a few capabilities pushing digital supply chain acceleration right now, including control tower solutions, digital twins, warehouse automation and "data decision" platforms. "Collectively," says McCullough, "these tools help organizations understand short-term impacts to the business based on real-time updates, reduce production times, and enhance supplier collaboration and sourcing."

According to McCullough, COVID-19 has had a "significant impact" on most businesses globally. Two years into the pandemic, most of these companies are working to understand the impact of the related supply chain disruptions. In response, they're adopting solutions and techniques that help them mitigate risk, put out daily fires and plan for the next potential disruption.

The supply chain is right at the center of these activities, shifts and decisions. "The pandemic has pushed businesses to view the supply chain as a critical enabler rather than a siloed function," says McCullough. "Now, companies understand the potential benefits of having a truly digital supply chain—from cost savings and operational efficiencies to exception-based reporting and data-driven insights."

Getting to those benefits isn't always easy or straightforward. According to McCullough, the main issue holding companies back is their ability (or inability) to support digital supply chain initiatives through internal resources. "Hiring has been particularly difficult for many organizations today as they need to increase their headcount to grow their business and fully support supply chains," he says.

To help, more vendors are folding probabilistic modeling (i.e., factoring in the impact of random events or actions to predict the potential occurrence of future outcomes) and artificial intelligence (AI) into their solutions. Both of these tools help companies automate their supply chain forecasting with greater accuracy.

McCullough says supply chain software vendors are also reevaluating the role of sales and operations in risk mitigation and developing integrated offerings that will incorporate AI, sales operations planning, and control tower solutions.

“Look for increased usage of sales and operations planning [S&OP], control tower solutions, AI risk management capabilities, and scenario planning in the

next year or so,” says McCullough, who tells shippers to keep an eye on the future, even as they work through the challenges that are right in front of them.

“To succeed in the long run, companies will need to look beyond 2023,” McCullough points out. “Over the next few years, expect organizations to introduce advancements in virtual reality (VR), augmented reality (AR), automation, and the metaverse, plus the widespread operational and process changes that support these tools.”

Source: www.logisticsmgmt.com

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THE ROLE OF IOT IN REVOLUTIONIZING SUPPLY CHAIN MANAGEMENT

This article explores how IoT is transforming supply chain management with real-time tracking, enhanced efficiency, and improved decision-making capabilities.

The integration of Internet of Things (IoT) technology into supply chain management is not just a futuristic concept; it is a transformative reality reshaping industries today. By connecting various devices and systems, IoT is not only enhancing the efficiency of supply chains but also providing unprecedented levels of visibility and control.

IoT's impact on supply chain management can be observed in real-time tracking of goods, monitoring of environmental conditions, and predictive maintenance of equipment. These advancements come with the promise of significantly reducing costs and improving the accuracy of demand forecasting.

For instance, a leading retailer in the United States has leveraged IoT sensors to monitor the temperature and humidity levels in its warehouses. This decision has not only minimized spoilage of perishable goods but has also led to cost savings amounting to millions of dollars annually.

Moreover, IoT enables dynamic response to supply chain disruptions. During the recent disruptions in global logistics, companies with IoT-enabled supply chains were able to quickly adapt their strategies, reroute shipments, or find alternative suppliers—all in real time. The ability to pivot swiftly in response to unforeseen events underscores the strategic advantage that IoT offers.

Additionally, IoT data analytics provides companies with actionable insights. Through the integration of IoT in supply chains, organizations can analyze vast amounts of data to identify patterns, predict market trends, and optimize operations. This holistic view not only aids in tactical decision-making but also supports long-term strategic planning.

However, the deployment of IoT in supply chain management is not without challenges. Issues such as data privacy, cybersecurity threats, and the need for continuous technological upgrades remain pertinent concerns. Ensuring robust security measures and adhering to data protection regulations is crucial for businesses looking to harness the full potential of IoT.

Despite these challenges, the adoption of IoT in supply chains is expected to accelerate in the coming years. As technology advances and the costs of IoT devices decrease, more businesses are expected to embrace these innovations to remain competitive in a rapidly evolving market.

In conclusion, IoT is a game-changer for supply chain management. The enhanced transparency, efficiency, and responsiveness offered by IoT are revolutionizing how businesses across industries manage their supply chains. As adoption grows, the IoT-driven supply chain is poised to become the new standard for operational excellence in the digital age.

Source: www.supplychaintechnews.com

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DISHA 2024

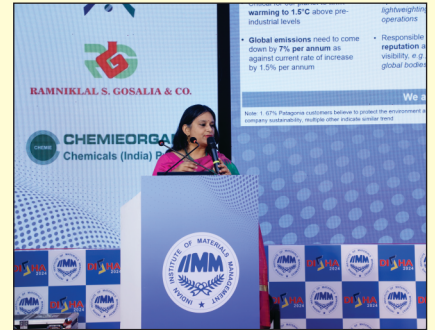
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HOW WILL THE FUTURE OF THE SUPPLY CHAIN LOOK IN 2025?

**NITIN NAVNEET TATIWALA, VICE PRESIDENT OF MARKETING
AND AIR NETWORK, MEISA AT FEDEX**

By 2025, technology will be at the core of supply chain innovation. Early warning systems, leveraging variables like weather patterns and supplier financials, help companies anticipate disruptions and maintain stability.

The global supply chain as we know is undergoing a seismic shift. Once seen as linear systems optimized for cost and efficiency, supply chains are evolving into dynamic, strategic assets. By 2025, they will be defined by three key pillars: resilience, technology, and sustainability. This transformation is not just a reaction to disruptions like the COVID-19 pandemic—it's a proactive reimagining of how global businesses create, deliver, and sustain value.

Turning Disruptions into Strategic Advantages

Today, progressive organizations view supply chains as interconnected ecosystems capable of both weathering disruptions and creating competitive advantage. By embracing dual-sourcing, regionalization, and advanced planning systems, companies are building agility into their operations. These changes aren't just responses to past challenges—they are the foundation of resilient, predictive supply chains.

Technology in Supply Chain Innovation

By 2025, technology will be at the core of supply chain innovation. Early warning systems, leveraging variables like weather patterns and supplier financials, help companies anticipate disruptions and maintain stability. Tools like Advanced Planning and Scheduling (APS) enable faster responses to market changes, while AI and the Internet of Things (IoT) turn supply chains into dynamic, responsive ecosystems that optimize inventory, manage risk, and predict customer needs. With over 75% of global leaders reporting strong internal risk management capabilities, technology is redefining how businesses adapt and thrive in an increasingly complex environment.

As geopolitical risks and economic instability rise, organizations must adopt strategies like reshoring and nearshoring for resilience. However, these technologies also introduce risks, notably cyber threats. With 55.6% of tech executives worldwide viewing cybersecurity as a major concern, companies must prioritize encryption, security

Tech Talent a Key Enabler of Digital Supply Chains

Talent remains a critical piece of the puzzle. As compa-

nies adopt more digital tools, the demand for skilled professionals to manage and interpret these systems is outpacing supply. Instead of relying solely on external hiring, organizations need to focus on developing in-house expertise. Robust training programs and career development initiatives can help bridge digital skill gaps, ensuring both long-term sustainability and workforce empowerment.

Sustainability at the Core

Sustainability is no longer 'nice to have'—it is central to customer trust, regulatory compliance, and long-term profitability. By 2025, circular economy models, which focus on minimizing waste and maximizing resource reuse, will be a preeminent consideration. Several companies are already redesigning products to align with sustainability goals and conducting third-party assessments across their supply chains. These efforts not only meet consumer demand for environmentally conscious brands but also position businesses as leaders in driving global sustainability.

Moreover, inclusive practices that support small and medium enterprises (SMEs) can have a far-reaching impact. By fostering localized sourcing and promoting economic resilience, businesses contribute to community development while strengthening their operations.

Conclusion : The supply chains of 2025 and beyond are geared to radically vary from the systems of the past. The ambition will be to become resilient, tech-enabled, and sustainable—strategic assets that drive growth and innovation. To realize this vision, organizations must act now. Invest deeply in digital technologies, prioritize cybersecurity, and build a pipeline of skilled talent. Equally important is embedding sustainability at every level of the supply chain, ensuring alignment with both business goals and global environmental priorities.

In this transformative journey, businesses that balance human expertise with automation, agility with long-term thinking, and innovation with sustainability will set themselves apart. The future of supply chains is not just about navigating disruption—it's about creating smarter, more inclusive systems that drive long-term value for all.

(Disclaimer: Views expressed are personal)

Source: www.financialexpress.com

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2025 – SUPPLY CHAIN TRENDS TO LOOK OUT FOR IN INDIA

SARADA VISHNUBHATLA

A brief : In just another decade, India is all set to be a global economic giant. With much needed reforms and economic policy changes in the offing and the operating environment becoming increasingly more conducive and evolving still, it is sure to have a positive impact on all sectors, including the supply chain management (SCM). Another piece of good news is that for the next few decades, India shall remain one of the youngest countries of the world, which is a major advantage for its economy. But pre-requisites such as skill up-gradation, good governance, professional attitude towards servicing and delivering – whether it is a rural shop or an urban conglomerate – will hold the key for India to become an economic force in the world to reckon with.

This brief report looks at the major trends in the SCM by the year 2025, and how these will change the country's economy – after all, supply chain and its management is what moves the world.

Risk Management : Unpredictable supply and demand equations keep risk management a contentious issue in business environment, usually. Especially it is so when the business houses feel the heat to keep overhead costs in control while delivering quality products. And this is exactly what drives the supply chains to work between the two extremes of mass customization and consolidation and the companies find themselves the need to invent flexible ways to meet customer demands. It is only natural that the companies will start focusing on optimizing core activities to maximize the response speed in keeping with customer expectations.

In another decade, India, in all likelihood, would have become the third largest economy in the world. With more spending power, the large segment of middle class in India will drive the economy. But skilled talent continues to remain a perennial handicap for the country. As will be the delicate matter of nurturing the human connection.

Mega Trends : Looking at the manufacturing industry growing strong steadily what with the changes that the central government is promising, it may account for a quarter of the economic output. With smart cities growing in numbers, consumerism on a steady rise, increase in purchasing power and buying made easy with user-friendly online apps, the pressure is passing on to supply chain managers to become more efficient and productive.

Experts point towards six mega trends in the next decade:

1. More smart cities coming up

2. Stronger middle-class
3. Effective supply chain infrastructure
4. Better regulatory climate
5. Stronger global connect
6. Accessible technologies

Mega or smart cities, in essence, indicate towards a large market that is a ready consumer of goods and services. Unless planned with precision, these cities are bound to throw up logistical challenges in terms of traffic jams and obstacles, which logically result in disrupted last-mile supply chain deliveries to urban centers.

Indian businesses will need to use data and distribution network modeling techniques to improve planning and execution to their urban customers. Combining GPS data generated by smartphones such as transactional data, census, geo-spatial data, driver activity, will tremendously help companies to analyse and adapt their last-mile supply chains in urban centers.

Overhauling supply chain infrastructure : Indian supply chain infrastructure will soon need to undergo a complete overhaul to be able to cater to a rise in demand among consumers in the upcoming smart cities seeking better and on-time services. The changes in the offing are on the lines of,

1. Automation in manufacturing and material handling – when applied to an efficient operation, automation will magnify its efficiency
2. Verticalization to accommodate larger inventory in fewer spaces so that rental costs on depots and stores can be controlled
3. Leaner design to manage the movement of large sized cargo across the supply chain

For the above to be realized, and with increase in scale and scope of work, the supply network must be consolidated for which it will need to

1. Be able to handle higher volumes
2. Modify supply chain design to using multi-modal network
3. Standardize practices and working models whether in manufacturing, or inventoring

Boosting economy : Seeking a definite boost in the arm, Indian industry has been on the lookout, since the new government came to power at the center, for a few major bills to be passed in the parliament, such as,

1. Goods and Services Tax (GST) – implementation of this will help bring consolidation in warehousing and large distribution hubs because no longer then will business houses look to optimize their taxes in supply chain networks.
2. Fiscal incentives – especially those aimed at improving efficiency, such as National investment and manufacturing zones or free trade warehousing zones.

The implementation of these reforms shall prove advantageous to Indian business houses around the world because trade volumes are sure to multiply five times over in the coming decade in the optimistic environment of increase in the number of free trade agreements.

Increase in trade between India and ASEAN, GCC, EU and EFTA (European Free Trade Association comprising Switzerland, Norway, Iceland and Liechtenstein) will help businesses in India to adapt to uncertain lead times, geographic dispersion, and many potential sources of disruption. Supply chains around India will find more stress being placed upon acquiring regional footprints, reducing wastage, higher service quality, and following environmental guidelines.

Technology Trends : 3-D printing – in a far wider manner, RFID tagging, augmented reality, delivering by drones,

driverless trucks as was recently experimented by Volvo, Scania and other European manufacturing majors, and nearshoring – meaning downsizing work to low cost operations within its own region, are some of the technological aspects that Indian business houses will be interested in looking at to become more efficient and reduce delays in servicing by being able to locate a problem much faster.

But what the Indian businesses must be on the lookout for is to know clearly that only when technology is applied with a well thought out strategy and followed by efficient operations will it translate into a best practice in the management of their supply chain.

Perhaps, the biggest fillip to the supply chain sector comes from the decision of the central government to earmark 20 per cent of the US\$ 1 trillion funds reserved for infrastructure. In turn, this gives rise to the highest possibility of sharing of resources among logistics companies to reduce delivery time.

The positive trends will yield equally positive results provided the central government, business houses and supply chain entities work together efficiently and in tandem because ultimately SCM is productive only if it fulfills customer demands through an optimum use of resources, distribution capacity, inventory and labour.

Source: www.ecargolog.in



INDIAN LOGISTICS INDUSTRY ADAPTING TO NEW REALITIES

EUGENE PANFILOV, GM- INTRA-CITY DELIVERY SERVICE
COMPANY BORZO IN INDIA & BRAZIL.

The logistics industry in India -especially the last-mile delivery system—is experiencing significant growth at present raising expectations of an eventful 2024. An India Brand Equity Foundation (IBEF) report says the logistics market will reach an impressive US\$ 380 billion by 2025, with a YoY growth rate of 10%-12%. Moreover, the government is looking to bring down the logistics and supply chain costs from 13-14% to 10% of the GDP. Key players are adopting the latest technologies to enhance customer experience. The logistics sector recognizes the importance of streamlining cargo movement in a fast-paced environment. As a result, companies are keen on integrating new technologies for comprehensive management and strategic planning to be able to cater to the growing demands. Last-mile drone delivery The last-mile delivery system is undergoing significant technological transformation in response to such

challenges as traffic congestion, customer preferences and regulatory complexities. Alternative delivery methods, such as autonomous robots and drones, backed by advanced tracking systems, can ensure faster, more efficient deliveries. Drones can reach remote areas for delivery, bringing down cost and time. There are many new businesses aggressively working towards exploring this space and overcoming challenges of transportation infrastructure, especially in remote locations with limited road connectivity.

Major food delivery companies such as Zomato, Swiggy, have shown interest in using drones for deliveries. Such e-commerce giants as Amazon and Flipkart are also likely to use drones for last-mile deliveries, while medical supply via drone is also gaining momentum in India's remote and hilly regions, such as Uttarakhand and Meghalaya. IoT,

AI, ML and robotics Next-generation technologies—IoT, AI, ML and robotics—are making logistics and supply chain more customer-centric and sustainable. Automation of logistics processes results in significant increase in productivity and efficiency in workflow. IoT is a connection of physical devices monitoring and transferring data via the Internet and without human intervention. In logistics and supply chain operations, integrating IoT technology improves efficiency, transparency and real-time visibility of goods. IoT further enables predictive analytics for logistics companies to anticipate demand fluctuations.

Artificial intelligence (AI) and machine learning (ML) algorithms enable logistics companies to be proactive in dealing with demand fluctuations. AI-enabled forecasting allows managers to plan supply chain processes and reduce inventory waste. Businesses are also leveraging AI to optimize route planning and load consolidation to reduce fuel consumption and carbon emissions to boost sustainability efforts. Integrating robotics into logistics improves speed and accuracy of logistics processes and reduces human error. Robots improve productivity compared to human workers, although they do not replace humans.

Popularity of D2C brands Over the past few years, India's D2C market has gained traction because of growing e-commerce penetration; improvement in digital infrastructure; growing millennial population; increase in consumer tech awareness and increasing number of D2C startups with their wide range of offerings. But it was Covid-19 that helped the D2C sector reach a significant milestone.

The D2C model is becoming more popular with established FMCG brands, such as ITC and Hindustan Unilever, facing stiff competition from new D2C businesses. Many companies are turning to this model because it eliminates the middleman. Infact, D2C brands have many options available for last-mile deliveries with various companies like Borzo, Shadowfax, Dunzo, Shiprocket aiding additional help. Quick commerce – within 60 mins Even some months ago, especially during the pandemic, customers expected same-day, or two-day deliveries. But online shoppers today have become more tolerant.

A recent survey by Radial shows that less than 20% of consumers said 1-2 days was a realistic delivery

period for online orders; nearly 38% felt 3-5 days was satisfactory; and for 35% of consumers, one week was reasonable. However, many consumers also want fast shipping. So, delivery speed is still an important buying factor. But the good news for eCommerce is that the intense pressure to deliver at record speed has eased. The challenging news is that retailers should be able to meet any speed, at any time.

MSME and its logistics needs According to the MSME ministry, the sector plays a key role in India's economic growth, generating nearly 27% of the country's GDP. But logistics challenges for MSMEs are a barrier to efficient operations and growth. Experts say that, since the sector depends heavily on logistics, it was badly hit by the pandemic.

One more challenge it faces is adoption of e-commerce solutions. According to experts, because of the competitive market scenario, companies now prefer to hold inventories closer to their target markets for improved delivery efficiency.

So, a logistics company that has a transportation and warehousing network with cost-effective, multi-location pick-up and deliveries, prompt assistance and interventions would be a better choice. With Lok Sabha elections underway, the logistics industry is likely to come under the lens. With political equations affecting regulations, infrastructure investment and trade policies, the trajectory of the logistics industry is likely to be affected.

So, players in this industry will be keeping an eye on the political scenario, which will decide the next changes in economic policies and trade agreements that will form the logistics environment. In this decisive year, India's logistics sector is ready to navigate a unique confluence of challenges and opportunities.

So, businesses that can anticipate and embrace the new trends will not only succeed in this changing set-up, but also help India's logistics sector become sustainable and efficient in the coming days.

The views and opinions expressed in this article are those of the author and do not necessarily reflect the views of Indian Transport & Logistics News.

Source: www.itln.in

INDUSTRIAL CITIES CAN BE THE BOOST MANUFACTURING NEEDS

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Industrial parks are not new to India, but what is refreshing is the grand vision behind NICDP that ties in various aspects in the pursuit of robust, sustainable infrastructure to catalyse investments and drive balanced regional development

The road to Viksit Bharat (developed India) undoubtedly traverses the manufacturing sector that has been paid sustained attention to increase its share in the Gross Domestic Product (GDP) to 25%, which is in line with a modern economy. This entailed several measures to enhance the ease of doing business and reduce the cost of doing business, and the focus has now turned to creating industrial infrastructure on an unprecedented scale in order to attract large-scale investments and boost manufacturing.

There are more than 4,400 industrial parks/zones across the country, 64% of which are mixed-use, although there has been a trend lately towards sector-specific parks. Together, the top five states account for nearly 75% of the total area, and this has unquestionably played a role in their growth story. Now, following through on the announcement in the Union Budget to facilitate the development of investment-ready industrial parks, the Centre has approved 12 new industrial cities under the National Industrial Corridor Development Programme (NICDP) with an investment of 28,602 crore. They will strengthen the nation's industrial infrastructure, enhance global competitiveness, and act as engines of economic growth by attracting investments of more than 1.5 lakh crore, while creating four million direct and indirect jobs.

From an industry perspective, NICDP recognises the need to facilitate investments by having readily available land parcels and creating world-class infrastructure ahead of demand as the time is ripe for India to become a global manufacturing hub on the back of geopolitical developments. By providing plug and play options in conjunction with ease of doing business measures like automatic approval of Foreign Direct Investment (FDI) and minimal clearances, the time taken to operationalise investments will reduce noticeably, which is imperative to compete with alternative geographies vying for the same set of investors. Overall, it will lead to a vibrant manufacturing ecosystem with both large anchor investors as well as MSMEs, thereby acting as a catalyst for achieving the target of \$2 trillion in exports by 2030.

India's high logistics cost has been a matter of concern as it impacts competitiveness, and this led to the National Logistics Policy (NLP) being announced in 2022

to improve India's ranking in the Logistics Performance Index by bringing costs on par with competing economies. If it is decided to co-locate the entire value chain of a sector within an industrial city, there will be substantial savings in logistics. This will help realise the aim of the NLP. Further, aligning these industrial cities to the PM GatiShakti National Master Plan in terms of multi-modal connectivity infrastructure will lead to seamless movement of people, goods, and services. Many will be proximate to ports, thereby bringing down the cost of outbound goods.

Urbanisation is an off-shoot of development, and there is a need to improve urban planning in India. In this context, by developing new smart cities and promoting the walk to work concept, the NICDP has the potential to revamp how we look at manufacturing. While relieving the pressure on some of the existing clusters that have become saturated, these nodes can also become the focal point around which sustainable development takes place. The effects of the climate crisis are visible, and economic development must go hand in hand with environmental stewardship by utilising green technologies to the hilt.

It is evident from the location of the industrial cities announced in the first lot that balanced regional economic development is a key criterion. Each region's unique strengths must be leveraged to maximise economic output and foster inclusive growth, and NICDP also scores when it comes to a key focus of policymakers as it is expected to generate significant employment opportunities with an estimated one million direct and three million indirect jobs. The growth of the manufacturing sector in and of itself is critical to benefiting from India's demographic dividend, and planned industrialisation initiatives will not just lead to livelihood generation but also socio-economic upliftment across the length and breadth of the country.

Industrial parks are not new to India, but what is refreshing is the grand vision behind NICDP that ties in various aspects in the pursuit of robust, sustainable infrastructure to catalyse investments and drive balanced regional development. As with all initiatives, implementation will be key. The completion of four projects with another four currently under implementation augurs well. The bid to transform India's industrial sector is truly getting a fillip.

The views expressed are personal

Source: www.hindustantimes.com

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JUST-IN-TIME (JIT) INVENTORY EXPLAINED

Quick Summary : In this article, we explain what just-in-time inventory management entails, its benefits and disadvantages, and how Extensiv can help you implement it.

No matter your industry or the product you sell, a warehouse of unsold products costs you money. Everyday your inventory stays there unsold, you lose money in a variety of ways. Let's start with the storage fees, taxes, opportunity cost, insurance, and employee costs. These inventory carrying costs can add up and significantly erode your profit margins.

Discussions about business innovation are often limited to product enhancements, but what about process innovation to prevent issues like this? An example of a process that does just this is the just-in-time (JIT) inventory method.

In other words, goods are made according to demand to reduce lead times. Customer orders trigger requests for new products, which are delivered just before they are needed. Because of this, JIT depends on accurate demand forecasting and planning, precise timing, solid supplier relationships, and **efficient supply chain management**.

Real World Examples of JIT Inventory Management in Action



Zara

On average, Zara releases new designs every 2 weeks, while most of its competitors do every 10 to 14 weeks. This speed is made possible through **Zara's supply chain strategy** built around JIT inventory to minimize waste and drive efficiency in their production process.

Unlike conventional fashion retailers that manufacture and store a large quantity of items in warehouses, Zara makes products in limited production runs and sends them straight to their brick-and-mortar stores. This keeps products from going unsold for long periods and creates a sense of urgency for shoppers since the items they see now won't be around for long.



Motorola

Motorola shows how just-in-time inventory can improve

efficiency and reliability in an industry that's especially sensitive to supply chain disruptions. They implemented a program to handle shortages in three ways: expediting, transferring, or rerouting parts.

Adopting a "zero latency" strategy for inventory, Motorola was able to reduce shortages, control expediting expenses, and decrease the amount of time required to address inventory issues from weeks to hours.



Apple

Apple's JIT inventory management allows them to balance production with consumer demand to minimize waste, boost operational efficiency, and reduce holding costs. Apple relies on advanced technologies like data analytics and automation for demand forecasting and real-time inventory monitoring to avoid challenges like stockouts and overstocking.

At their retail stores, Apple maintains low inventory levels and uses online order fulfillment for flexibility. Apple's supplier relationships are also very solid, which promotes their supply chain efficiency and minimizes risks. All of this contributes to Apple's success and dominance in the market.

The Benefits of JIT Inventory Management

Businesses of all sizes can gain from using just-in-time inventory management to boost their supply chain efficiency. Below are some of the benefits of just-in-time inventory for modern businesses:

Reduces Costs

Improves Efficiency

Enhances Flexibility

Gives a Competitive Advantage

Reduces Shrinkage

Common JIT Inventory Challenges

Although the JIT model is efficient, it still has some drawbacks. Below are some common challenges with using the just-in-time inventory management system:

Lack of Safety Stock

Supply Chain Sensitivity

Unpredictable Demand Forecasting

As the new year comes closer into view, there's no time to waste in preparing for 2025—but you don't have to do it alone. Unlock year-round success with our Ultimate Ecommerce Annual Planning Calendar so you can stay ahead of the curve.

JIT Inventory Management Best Practices

You need a solid strategy to get the most out of just-in-time inventory management. Below are some best practices for implementing the JIT inventory method:

Use Technology for Real-time Visibility

To successfully implement JIT, you need accurate, real-time data on inventory levels, customer demand, and supplier performance. Technology is the key. With the right **inventory management software**, you can easily monitor your inventory and automate reordering.

Additionally, demand forecasting tools can help you predict inventory needs accurately so you don't have to guess what's in stock or when you need to restock. You should also **integrate your technology stack** with your suppliers' and order fulfillment partners' systems for end-to-end visibility over your inventory levels.

Maintain Good Partner Relationships

A JIT inventory system relies on strong partnerships and **integrated logistics management**. Here's a brief to-do list to streamline your relationships:

- Work closely with reliable suppliers to ensure they meet your production schedules.
- Partner with reputable transportation companies and **third-party logistics (3PL) providers** to ensure timely delivery.
- Choose strategic locations for your warehouses close to your customers to minimize shipping times—especially if **outsourcing order fulfillment**.
- Pay attention to setting up agreements or contracts that will give your orders higher priority during peak demand periods.
- Ensure you establish clear communication channels with partners to stay updated on the supply chain process.
- Negotiate long-term contracts that include **key performance indicators (KPIs)** and keep track of their metrics to make sure your partners are keeping to

their end of the deal.

- Work collaboratively on demand forecasts and production schedules to ensure timely delivery.

Focus on Accurate Forecasting

The key to JIT is knowing exactly how much stock you need. Pick the tools that can help you forecast demand accurately and stay on top of sales and market trends. Analyze your sales history to know when your peak periods happen and how your customers purchase your products. This way, you can avoid excess stock or understocking.

You can also use predictive analytics, **artificial intelligence (AI)**, and machine learning to simulate different scenarios like seasonal fluctuations or sudden market changes. This will help you foresee unexpected demands and prepare you for what is to come. You should also regularly update your forecasts with the latest data to stay up-to-date.

Anticipate Risks & Disruptions

JIT inventory management gives you little room for error, so having a backup plan is important. Anticipate risks like supplier delays or transportation problems and come up with contingency plans and a response plan for unexpected delays or demand spikes.

For instance, you shouldn't rely on just one supplier or logistics provider; build a roster of other options that can fill in if your main supplier is unavailable. You should also keep a small amount of emergency or safety stock for when suppliers can't meet unexpected demand spikes.

Encourage Cross-Functional Collaboration

The JIT inventory method requires alignment across different departments, including procurement, production, and sales. Share real-time data between teams using a unified system to encourage collaboration between departments. This will keep them informed on all important business and supply chain conditions so no one's ever left in the dark. You should also train your employees on JIT principles to let them know their roles in the process.

Conduct regular meetings to align production schedules with sales forecasts and to evaluate your system to know what works and what needs improvement. This will allow you to assess your performance over time and make necessary adjustments to improve outcomes.

Source: www.extensiv.com

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PAVING THE WAY FOR THE FUTURE OF SUPPLY CHAIN MANAGEMENT

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The manufacturing sector is experiencing a drastic change, fuelled by technological innovations, changing consumer preferences, and an increasing emphasis on sustainable practices. As we advance through Industry 4.0, cutting-edge technologies such as artificial intelligence (AI) and machine learning (ML) are playing a crucial role in driving economic growth, especially in pivotal industries like automotive, engineering, pharmaceuticals, chemicals, consumer durables, and e-commerce.

In India, the manufacturing industry is an important pillar of the economy, accounting for 17 percent of the nation's GDP and employing over 27.3 million individuals. Government initiatives such as the 'National Manufacturing Policy,' 'Production-Linked Incentive (PLI) scheme,' and the 'Make in India' program are positioning India as an expanding global manufacturing hub. These efforts aim to boost the country's exports to US\$ 1 trillion by 2030 and elevate the sector's contribution to 25 percent of the GDP by 2025.

Trends influencing the future of supply chain management:

To maintain a competitive edge, companies must stay aware of the latest developments in supply chain management:

Omnichannel experience: The omnichannel strategy is transforming customer interactions by delivering a seamless, integrated experience across multiple touchpoints. For example, a customer can shop online, select a product, and choose in-store pickup, with coordinated actions throughout the supply chain ensuring both quality and efficiency.

Integration of advanced technologies: The convergence of AI, ML, Cloud, and IoT is revolutionising supply chain operations. Advanced data analytics and predictive modeling enhance demand forecasting, while IoT delivers real-time visibility, creating a data-rich environment that boosts control and responsiveness. Cloud-based platforms enable seamless collaboration and data sharing among all supply chain participants.

Supply Chain Risk Management (SCRM): Effective risk management is essential in today's unpredictable global landscape. SCRM encompasses the evaluation, detection, monitoring, and reduction of risks within intricate supply chain networks, a focus that has been heightened by global events like the COVID-19 pandemic.

Adoption of ESG standards: Rising regulatory demands and a growing emphasis on sustainability are compelling businesses to implement eco-friendly practices. Initiatives such as fleet electrification, circular supply chains, and the development of sustainable products help companies minimise their carbon footprints and align with consumer expectations for environmentally responsible offerings.

Challenges in contemporary supply chain management:

Today's supply chains are highly interconnected, presenting several challenges such as:

- **Visibility** – Achieving transparency and control over last-mile logistics.
- **Fragmented distribution channels** – Coordinating multiple, often disjointed, distribution networks.
- **Demand volatility** – Adjusting to unpredictable consumer demand fluctuations.
- **Talent shortages** – Bridging gaps in skills and workforce capabilities.
- **Infrastructural limitations** – Overcoming logistical and infrastructural constraints.
- **Cost economics** – Striking a balance between cost-efficiency and operational effectiveness.
- **Compliance** – Navigating complex regulatory landscapes.
- **Dynamic consumer expectations** – Satisfying the continually evolving needs of consumers.

Industry solutions for streamlined supply chain management

Achieving success in manufacturing and distribution depends on key elements such as market coverage, targeted promotions, and precise market intelligence. Utilising integrated digital solutions equips businesses with the necessary tools to efficiently manage these complexities. Distribution Management Systems (DMS), Sales Force Automation (SFA), and Business Intelligence (BI) platforms are crucial for overseeing complex supply chains, improving efficiency, transparency, and optimisation. These technologies enable businesses to integrate distributors, warehousing firms, small retailers, and e-commerce platforms into a unified system, constructing a comprehensive logistics framework.

Significance of retail intelligence platforms

There is a myriad of platforms designed to tackle supply chain challenges, among which a few stand out as a sophisticated solution for optimising supply chain management. There are systems like cloud-based distributed management system that interlinks supply chain participants across the distribution network, delivering extensive control and real-time visibility. It automates secondary sales processes, improves inventory management, and integrates effortlessly with ERP systems, ensuring a seamless and cohesive connection with all supply chain partners.

Future outlook : The future of supply chain management in manufacturing looks promising with ongoing changes. Using AI, IoT, and cloud computing, businesses can achieve higher efficiency, better visibility, and improved collaboration. The move towards an omnichannel approach shows a focus on customer satisfaction, while the emphasis on sustainability reflects a commitment to eco-friendly practices. As businesses adapt to these changes, digital solutions will be essential. These tools will help automate tasks, increase productivity, and meet the ever-changing needs of the global market.

Source: www.expresscomputer.in

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RISE OF GRADE A WAREHOUSING IN INDIA

INDIA'S WAREHOUSING SECTOR IS FORECASTED TO REACH INR 3,107.5 BILLION BY 2032. GOVERNMENT POLICIES, INSTITUTIONAL INVESTMENTS AND TECHNOLOGICAL ADVANCEMENTS, ARE PIVOTAL TO ITS GROWTH STORY.

The opportunities abound for the warehousing segment especially with industrial development and infrastructure expansion of the country. As N Shridhar – CEO- Greenbase Industrial & Logistic Parks says, “Over the coming few years, the Indian warehouse industry will grow significantly as our economy overcomes the odds of global geopolitical turmoil. The government is focused on strengthening its global competitiveness by investing in factors such as expanding infrastructure networks, developing last-mile connectivity, implementing the GST, adapting automation technology, and adopting beneficial government policies. The above measures will play a pivotal role in improving warehouse operational efficiency, rising yields, creating jobs, attracting investments, and reducing logistical costs to 8%.”

Rajesh Jaggi, Vice Chairman – Real Estate, The Everstone Group adds, “The industrial and logistics warehousing market in India presents a compelling and strategically significant real estate asset class underpinned by favourable market dynamics and government-led initiatives. Its resilience and stability are at the heart of this asset class's appeal. The prevalence of long-term lease agreements and controlled rent escalations provides a solid foundation for consistent cash flows and reliable returns. Moreover, the exponential growth in demand from sectors like manufacturing, 3PL, ecommerce and retail speak of the strategic importance of this asset class. The Indian warehousing sector is uniquely placed to leverage these megatrends, cementing its role as a critical enabler of the country's economic growth. The government's role in catalyzing the warehousing sector's development is equally crucial.

Initiatives like the National Logistics Policy, with its goal of reducing logistics costs to below 10% of GDP, demonstrate a clear commitment to enhancing the sector's operational efficiency and competitiveness. By aligning our vision with the government's policy directives and leveraging the sector's inherent strengths, we can unlock unprecedented value and position the industrial and logistics market as a cornerstone of India's economic resurgence.”

Madhusudhan Gunda, Chairman & Managing Director, Sumadhura Group shares, “India's industrial market is showing robust growth, with the manufacturing sector, propelled by government initiatives such as Make in India, contributing 25% to GDP and employing 30% of the workforce. Effective warehousing can boost businesses by providing a 20% cost reduction, 30% improvement in order accuracy, and a 25% increase in customer satisfaction and repeat business. Warehouses are moving closer to production hubs in cities like Chennai, Hyderabad and Bengaluru bolstered by the government's infrastructure push-dedicated freight corridors and industrial corridors are streamlining logistics. It is worth noting that more than half of India's warehousing stock is contributed by Delhi NCR, Mumbai, and Bengaluru. The logistics industry's recent infrastructure status and initiatives like the PM Gati Shakti plan further has made investors happy. It has translated to a space boom. Total warehousing stock in major cities jumped 15% year-on-year in 2023, with Grade A and B spaces leading the charge. As demand outpaces supply, vacancy rates are plummeting, creating a prime market for modern, high-quality warehousing solutions.”

While the Indian warehousing Industry holds a lot of promise, what are the challenges that need to be addressed?

N Shridhar is of the view that the dominant factors like economic resilience, GDP growth, and domestic consumption, China Plus One policy, robust infrastructure network, and demographic dividends played a pivotal in driving sustained demand. “As the spillover effect of pandemic-led disruptions seems to be subdued, the warehousing industry continues to face challenges like higher logistics costs, delayed approvals, lack of clear land titles, complex regulatory compliances, and volatility in real estate raw material costs. Additionally, global headwinds continue to impact economic and business sentiment with high inflation, muted private capex, compressed profit margins, and tax burden. Addressing these challenges will require collaborative efforts from industry stakeholders, government intervention to streamline regulations, and strategic investments in technology, infrastructure, and talent development to drive the sustainable growth of the warehousing and logistics sector in India,” he added.

Madhusudhan Gunda, agrees that India's warehousing industry is full of potential, but to truly flourish, we must address some key challenges. "Our infrastructure, particularly transportation networks, including roads and rail, need an upgrade to ensure smooth movement of goods. There is a concerning skills gap – the demand for qualified warehouse workers far outstrips the available talent pool. Investing in training programs is essential to bridge this gap. Additionally, complex regulations and a lack of transparency in land acquisition can create hurdles for warehouse development.

Streamlining these processes can significantly incentivize growth in the sector. From the workforce point of view, creating a positive work environment that prioritizes well-being, recognizes contributions, and offers clear career advancement paths fosters a sense of value and long-term commitment from employees. By prioritizing these strategies, companies can cultivate a loyal and thriving workforce."

What have been the important developments for your Company in the warehousing segment in recent years?

"As India's largest warehouse developer and operator, IndoSpace has continued to anticipate industry trends and proactively met evolving needs, taking our national footprint to 52 Grade A logistics parks across 11 cities today. Our significant presence in key industrial hubs like Chakan Pune (500+ acres) and Oragadam in Tamil Nadu (400

+ acres) serve major logistics, manufacturing, and automotive industries. The expansive reach of over 600+ acres across the NCR facilitate inter-state commerce. Moreover, the newly launched INLOGIS Chembur facility in Mumbai is offering flexible in city warehousing solutions," said Rajesh Jaggi

Talking about the future plans he added, "IndoSpace has a planned growth strategy for the next decade. Currently, we are in the process of deploying our fourth fund which should add another 20-25 million square feet to our portfolio in the next 2-3 years. With a strong footprint across India, IndoSpace plans to deepen its presence in 11 existing markets and expand into the top eight tier-I markets within the next three years. IndoSpace is also dedicated to enhancing sustainability by integrating green infrastructure designs, such as rooftop solar panels, natural ventilation, eco-friendly materials, and water conservation measures, to minimize the carbon footprint and promote efficient business operations."

Greenbase, the Hiranandani-Blackstone JV platform, has forayed into the development and leasing of Industrial and Logistics Parks since 2019. **N Shridhar** elaborates, "The company has a healthy portfolio mix, comprising 70% industrial buildings and 30% warehouses. To date, the platform has delivered over 5 mn sq.ft of leased space across regions like Oragadam near Chennai and,

Talegaon in Pune. Its unique expertise lies in land development, robust process, timely approvals, precision engineering, financial acumen, quality, design efficiency and committed delivery. The company intends to actively expand its footprint across metros and tier cities. Besides the existing parks in Chennai, Pune, and Nashik, the group has acquired an additional 90 acres of land parcel in MMR, Chennai, and Bengaluru, and it has tie-ups for another 150 acres. The company is optimistically evaluating land acquisition opportunities in MMR, Noida, West Bengal, Bengaluru, and other promising markets in the advent of robust infrastructure development. This bullish outlook is derived from a sustainable demand from the dominant players across E-commerce, Automotive, Renewables, FMCG, EV, Manufacturing, and lightweight Engineering industries."

Sumadhura Group embarked on an exciting new chapter of warehousing, leveraging its three-decade legacy of building 11 million square feet of best-in-class properties in Bangalore and Hyderabad. "Now we're proud to introduce Sumadhura Logistics Park, our Warehousing Solution in Bangalore, said **Madhusudhan Gunda** He shared, "Strategically located in Hoskote, East Bangalore, to serve warehouses increasing demand. Sumadhura Logistics Park is Sumadhura's first built-to-suit warehousing project, largest in Bangalore city. The state-of-the-art logistics and warehouse park sprawls across 100 acres and offers 2.5 million square feet of commercial warehouse space. This is a Grade A+ warehousing facility and is strategically located to provide easy access to key industrial and manufacturing clusters, as well as consumption markets within the city. Recently we have leased three lakh sq.ft built-to-suit warehousing space to the Zomato, their largest in India. Sumadhura Group plans to invest 600 crore in the first phase of development of the Logistics Park, and aims to increase the total warehouse space to 6 million sq.ft. in the second phase."

"As India's digital transformation accelerates and its consumer market expands, the need for sophisticated, high-quality logistics and infrastructure solutions will only intensify" -**Rajesh Jaggi**

Addressing the challenges will require collaborative efforts from industry stakeholders and government to streamline regulations and strategic investments in technology, infrastructure, & talent development. **N Shridhar**

Keeping pace with the ambient growth, the warehousing sector is experiencing a surge, and is projected to reach \$35 billion by 2027 (CAGR 15.64%) with at least 40% Grade A stock - **Madhusudhan Gunda**

Source: **REALTY PLUS**

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UNLOCKING SUSTAINABILITY WITH 3P + 4R THINKING

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Abstract: In the contemporary business landscape, the integration of sustainability practices has become paramount. This article delves into the transformative approach of 3P + 4R thinking, amalgamating Profit, People, Planet, along with Reduce, Reuse, Recycle, and Regenerating/Reproduce. By exploring each element and providing real-world examples, we aim to unravel the profound impact of this comprehensive framework on corporate sustainability.

Keywords: Sustainability, 3P + 4R Thinking, Profit, People, Planet, Reduce, Reuse, Recycle, Regenerate, Corporate Responsibility.

Introduction: As global challenges like climate change and resource depletion intensify, businesses are increasingly recognizing the need for holistic sustainability. The 3P + 4R framework emerges as a powerful tool, intertwining economic, social, and environmental considerations. Let's dissect each component and illustrate their application through current examples.



SN Panigrahi

The 3P Framework: Balancing Profit, People, and Planet: The 3P framework posits that true success lies in achieving a harmonious balance between profit, people, and planet. This means:

Profit - Sustaining Financial Viability: Businesses must operate efficiently and generate financial returns to ensure their own viability and contribute to economic growth. In the realm of sustainability, Profit extends beyond mere financial gains. It encapsulates long-term economic viability intertwined with ethical business practices. However, profit should not come at the expense

of the environment or social well-being.

Examples:

Ø **Reliance Industries Limited (RIL)**

Reliance Industries, led by Mukesh Ambani, showcases a commitment to sustainable profit through its diversified business ventures. The company has made substantial investments in clean energy, including the development of the world's largest oil-to-chemicals complex with a focus on reducing environmental impact. RIL's integration of technology, innovation, and sustainable practices reflects a holistic approach to profitability aligned with environmental responsibility.

v **Godrej Green Building (Mumbai):**

This LEED (Leadership in Energy and Environmental Design) Platinum-certified office building maximizes energy efficiency through solar panels, rainwater harvesting, and innovative ventilation systems, demonstrating environmental responsibility and cost savings. LEED (Leadership in Energy and Environmental Design) is the world's most widely used green building rating system. LEED certification provides a framework for healthy, highly efficient, and cost-saving green buildings, which offer environmental, social and governance benefits.

v **Hira Sweets:** Hira Sweets is a market leader in the sweets and snacks business in Delhi, established in 1912. This traditional sweets company sources ingredients locally and ethically, minimizes packaging waste through reusable containers, and invests in employee training, proving that sustainable practices can boost profitability.

v **Fabindia (Pan-India):** This handicraft retailer collaborates with artisans across rural India, preserving traditional skills and providing fair wages while achieving commercial success through high-quality, ethically sourced products.

People - Fostering Social Equity

People-focused sustainability endeavors involve nurturing human capital, promoting diversity, and ensuring fair practices. Prioritizing the well-being of employees, communities, and consumers is essential for sustainable development. This includes fair labor practices, responsible sourcing, and investing in social programs that improve lives.

Examples

v **Tata Group**

The Tata Group, under the leadership of various Tata companies, prioritizes people-centric sustainability. Through initiatives like Tata Consultancy Services' (TCS) community development programs and Tata Steel's efforts to enhance the well-being of local communities, the group emphasizes social responsibility. Their commitment to employee welfare, skill development, and community engagement exemplifies a holistic approach to fostering social equity.

v **Aravind Eye Care System (Madurai):**

The group has vision of Provide compassionate and quality eye care affordable to all This network of hospitals provides affordable, high-quality eye care services to underserved communities, including free surgeries for the underprivileged, improving health outcomes and empowering lives. By prioritizing social responsibility, they reinforce the integral role of 'People' in the sustainability equation.

v **SELCO (Solar Electric Light Company) Foundation** (Bangalore, established in 1995): This organization provides solar lighting solutions to off-grid rural communities, improving access to education and livelihood opportunities while promoting clean energy adoption.

v **Self-Help Groups (SHGs): Community-Driven Development:** These microfinance groups empower women in rural areas through collective action, providing access to financial resources and income generation opportunities.

v **Telemedicine Initiatives:** Programs like **eSanjeevani** bring healthcare services closer to remote communities, bridging the accessibility gap.

v **Mid-Day Meal Scheme:** This program provides nutritious meals to children in government schools, improving nutrition and promoting education access for underprivileged families.

v **Barefoot College: Inclusive Skill Development:** A community-based grassroots organization working to make marginalized communities

sustainable and self-sufficient since 1972. This organization empowers rural women by training them to become solar engineers, providing them with skills, income, and access to clean energy.

Planet - Preserving Environmental Harmony

Planet-centric strategies address ecological impact, emphasizing conservation and responsible resource utilization. Environmental stewardship is paramount. Businesses must minimize their environmental impact through resource conservation, pollution reduction, and responsible waste management.

Examples:

v **ITC Limited**

ITCLimited, a diversified conglomerate in India, has embraced sustainable practices to minimize its environmental footprint. Through the 'Responsible Luxury' initiative in its hotels, ITC integrates green building designs, water and energy conservation, and waste management. By aligning business operations with environmental preservation, ITC demonstrates how companies can contribute to the health of the planet while remaining economically viable.

v **Saahas Zero Waste (Bangalore):** This waste management company diverts over 90% of waste from landfills through composting, recycling, and upcycling initiatives, promoting resource recovery and circular economy principles.

v **Solar Power in Indian Railways:** India's ambitious plan to install solar panels across railway stations and trains aims to generate 100 GW of renewable energy by 2030, reducing carbon footprint and promoting clean energy transition. Indian Railways, in its ambitious move towards sustainability, has significantly ramped up its renewable energy capacity, by commissioning about 211 MW of solar plants and around 103 MW of wind power plants as of October 2023. The Guwahati railway station in the capital city of Assam is the first railway station in the country to be fully solar-powered.

4R - The Pillars of Circular Thinking

The 4Rs: **Reduce, Reuse, Recycle, and Recover / Regenerate / Repurpose**. They're the pillars of circular thinking, a revolutionary approach that challenges our linear "take-make-waste" model. **Reduce** our consumption, **reuse** what we have, **recycle** materials into new treasures, and **regenerate** natural resources for future generations. It's a closed-loop waltz, where every step is a swirl towards a greener, more vibrant future.

Reduce: Minimize the use of resources at the source.

This involves designing products for durability, opting for reusable alternatives, and promoting mindful consumption habits.

Examples:

v **Coal Sector's Stride into Energy Efficiency; Steps towards Carbon Neutrality.**

Coal India Limited has entered into an **MOU with Energy Efficiency Services Limited** to implement comprehensive Energy Efficiency Programs at CIL and its subsidiaries. This initiative encompasses **Building Energy Efficiency Projects (BEEP)**, the replacement of outdated fans, air conditioners, and conventional light fittings, motors, the adoption of electric vehicles, and the installation of distributed and rooftop solar projects.

From FY 2021-22 to December 2023, Coal/Lignite PSUs have made commendable efforts towards energy efficiency, including the replacement of 4.24 lakh conventional lights with LED lights, 5357 energy-efficient air conditioners, 83236 super fans, deployment of 201 electric vehicles, 1583 efficient water heaters, 444 energy-efficient motors for pumps, 2712 auto-timers in street lights and the installation of capacitor banks.

The adoption of energy efficiency measures led to notable accomplishments, **yielding a total energy savings of 14.34 crore kWh and financial savings amounting to Rs 107.6 crore**. Further, these endeavours played a vital role in promoting environmental sustainability, culminating in a collective **reduction of 1.17 lakh tonnes of CO₂ equivalent in carbon emissions**.

v **Electric Vehicles (EVs):** The widespread adoption of **Electric Vehicles (EVs)** is anticipated to contribute significantly to the reduction of carbon emissions. By replacing traditional internal combustion engines with electric powertrains, EVs eliminate tailpipe emissions, reducing the overall carbon footprint of transportation. Studies suggest switching from a petrol car to an EV in India can lead to a **60-70% reduction** in annual carbon emissions, depending on factors like driving patterns and electricity sources.

v **Alternative Energy Generation: Reduction in Emissions**

Solar Power:

Solar photovoltaic (PV) systems can significantly reduce carbon emissions, with estimates suggesting a **reduction of approximately 90% compared to conventional**

fossil fuel-based electricity generation. The process involves converting sunlight directly into electricity, emitting minimal greenhouse gases during operation. Compared to coal-fired power plants, **solar can avoid up to 0.8-1.2 tons of CO₂ per megawatt-hour (MWh) of electricity generated**.

Wind Power:

Wind energy is a clean and renewable source that produces electricity through the rotation of wind turbines. Wind power can achieve a **carbon emissions reduction of about 80% compared to traditional fossil fuel-based power generation**, as it involves no direct emissions during electricity production. **Compared to coal, wind power can prevent 0.6-0.8 tons of CO₂ per MWh**.

Hydropower:

Hydropower, generated by harnessing the energy of flowing water, is a low-carbon energy source. Large-scale hydropower projects can achieve **a reduction in carbon emissions of approximately 35-70% compared to fossil fuel-based electricity generation**, depending on factors like reservoir size and construction. Compared to coal, hydropower helps **avoid 0.9-1.1 tons of CO₂ per MWh**.

Biomass Energy:

Biomass energy, derived from organic materials, can vary in its carbon emissions reduction. While burning biomass releases carbon dioxide, it is considered carbon-neutral when the carbon released is balanced by the carbon absorbed during the growth of the biomass. Advanced technologies, such as gasification, can further reduce emissions. **Compared to coal, well-managed biomass can avoid 0.4-0.7 tons of CO₂ per MWh**.

Reuse: Give materials a second life by finding new uses for them before discarding them. This can involve product repair, creative upcycling, and implementing sharing platforms. Reuse is a sustainable practice centered on extending the lifespan of products or materials by utilizing them for the same or similar purposes without significant alterations. Unlike recycling, which involves processing and transforming materials into new products, reuse focuses on preventing unnecessary waste and conserving resources. Embracing reuse not only reduces the demand for new raw materials but also minimizes energy consumption and environmental impacts associated with manufacturing. From repurposing containers for storage to refurbishing electronics, the essence of reuse lies in promoting a circular economy and fostering a culture of responsible consumption, where items are valued for their longevity and versatility.

Examples:

- Ø **“Saahas Zero Waste”** in Bangalore: Used oil drums find new life as water storage tanks in schools and community centers, tackling water scarcity and waste simultaneously.
- Ø **Fabscrap**: This Delhi-based startup collects textile waste from garment factories and transforms it into stylish clothing and accessories, giving discarded fabrics a second life on the runway.
- Ø **Oxfam India’s ‘Second Life’ Project**: This initiative collects surplus food from weddings and events, repackages it hygienically, and distributes it to underprivileged communities, tackling food waste and food insecurity. Between 15-25 percent of the food in social gatherings is wasted, according to a survey (Report on Assessment of Wastage of Food and Ostentatious Behaviour During Social Gatherings (Marriages/Parties/Meetings, etc) in National Capital Region Delhi, by Department of Consumer Affairs).
- Ø **Kabadiwalas 2.0**: These tech-enabled startups connect informal waste collectors (“kabadiwalas”) with consumers, facilitating efficient collection and reuse of recyclable materials. They emphasize reusable packaging, reducing single-use waste and fostering a culture of sustainability.

Recycle: Recycling is the process of collecting, sorting, processing, and transforming used materials into new products, reducing the need for virgin raw materials and minimizing waste. It’s the backbone of a **circular economy**, where resources are recycled after use, minimizing waste and environmental impact. In India, several initiatives exemplify the impact of recycling on environmental sustainability:

Examples:

- Ø **“Bhool Na Jana, Plastic Bottle Lautana” - Coca-Cola & Reliance Retail – Joint Program:**

Coca-Cola India and India’s largest retailer, Reliance Retail, have launched a sustainability initiative for PET container recycling through reverse vending machines and collection bins titled **“Bhool Na Jana, Plastic Bottle Lautana,”**

The project aligns with the government’s Swachh Bharat Mission and has launched in 36 Reliance Retail stores including Smart Bazaar and Sahakari Bhandar stores in Mumbai and Delhi, and will expand to 200 stores across the country by 2025 with a target of collecting 500,000 PET bottles annually in the pilot phase.

As part of the initiative, **Reverse Vending Machines (RVMs)** and collection bins will be

installed in the participating stores, providing consumers with a convenient method to deposit used PET bottles.

In return, **consumers will receive attractive discounts on Coca-Cola India products.** The collected PET bottles will be responsibly managed and recycled by Reliance Industries (RIL), a leader in polyester and plastics recycling.

- Ø **Ecaware:** This company produces biodegradable and compostable tableware made from plant-based materials like sugarcane bagasse. They offer an alternative to single-use plastic plates and cups, reducing plastic waste significantly.

Recover / Regenerate:

The concepts of Recover, Regenerate, and Reproduce in the context of recycling focus on reclaiming materials, restoring ecosystems, and sustainably reproducing products. Recovering involves the retrieval of valuable materials from discarded items; restoring or replenishing natural resources and ecosystems. By actively contributing to ecosystem restoration, businesses can play a pivotal role in replenishing the planet’s resources.

Examples:

- Ø **Ayodhya Ram Mandir - Floral Waste to Natural Incense Sticks:**

Following the divine **Ram Pran Pratishtha Program**, with an anticipated daily influx of 22 lakh devotees to Ayodhya Dham, there was a concerted effort to ensure that the flowers that were offered did not end up as waste within the temples and shrines.

The birthplace of Lord Shri Ram attracted numerous pilgrims annually who offered flowers in temples, generating tons of **floral waste**. To address this issue, the authorities implemented a system where the **collected flowers were sorted and transformed into certified natural incense sticks daily.**

This processing initiative would **provide employment to women in self-help groups** and also **ensure cleanliness through proper recycling of floral waste.**

According to estimates, after the Pran Pratishtha, **9 metric tonnes of floral waste is expected to be recycled** in all the temples of Ayodhya Dham, a significant increase from the current 2.3 metric tonnes.

The responsibility for this environmentally-friendly initiative has been entrusted to an organization called **‘Phool,’** which has signed a

Memorandum of Understanding (MoU) with the Ayodhya Municipal Corporation for the collection and recycling of floral waste.

Ø **OIL, GMC sign MoU to Convert Municipal Solid Waste into CBG:**

In a move towards environmental sustainability and cleaner energy solutions, Oil India Limited (OIL) and Guwahati Municipal Corporation (GMC) have inked a memorandum of understanding (MoU) on Saturday to collaborate on the transformation of municipal solid waste (MSW) into compressed bio gas (CBG).

This initiative aims to contribute significantly to the reduction of carbon footprint and promote a more sustainable and eco-friendly future.

One More R - Rethink!

Embracing the circular economy extends beyond closed material cycles and renewable energy—it necessitates a holistic approach rooted in systems thinking. Every participant in the economic landscape, be it companies, individuals, NGOs, or nations, is intricately interconnected, forming a network where the actions of one entity reverberate through others. Consequently, choices must consider both short and long-term consequences, recognizing the impact on the entire value chain. Rethinking involves a profound consideration of how our actions or inactions resonate with the environment.

Human activities significantly impact the physical environment through overpopulation, pollution, reckless use of natural resources, burning fossil fuels, and deforestation. These actions have precipitated climate change, soil erosion, compromised air quality, undrinkable water, and health hazards. It is imperative to rethink our roles and contributions to halt further deterioration and redirect our efforts toward positive change.

Change considerations include:

- ✓ **Educating employees on corporate sustainability.**
- ✓ **Informing consumers about responsible consumption practices.**
- ✓ **Fostering awareness among all stakeholders.**
- ✓ **Mobilizing a collective movement towards sustainability.**

By embracing these principles, we can actively contribute to a greater mission of halting environmental degradation and steering our collective efforts in the right direction.

LiFE- Lifestyle for Environment : The concept of 'Lifestyle

for the Environment (LiFE) was introduced by **Prime Minister Narendra Modi at COP26 in Glasgow on 1st November 2021**, calling upon the global community of individuals and institutions to drive LiFE as an international mass movement towards “**mindful and deliberate utilization, instead of mindless and destructive consumption**” to protect and preserve the environment.

LiFE puts individual and collective duty on everyone to live a life that is in tune with Earth and does not harm it. Those who practice such a lifestyle are recognized as Pro Planet People under LiFE.

Conclusion: In conclusion, the 3P + 4R thinking framework provides a comprehensive guide for businesses to navigate the complex landscape of sustainability. Through profit, people, and planet considerations, coupled with the 4R principles, organizations can not only secure their financial future but also foster social equity and preserve the environment. Embracing this paradigm shift is not just a choice but a strategic imperative for businesses aiming to thrive in a conscientious and interconnected world.

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COST NEGOTIATION TECHNIQUES

SUSHANT PATARE, CHAIRMAN – IIMM, CSN (AURANGABAD) BRANCH

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Negotiation, as a skill, is the art of finding common ground in discussions where parties have divergent interests. It's not just about haggling over prices but a dynamic process that involves effective communication, strategic thinking, and a balance between assertiveness and adaptability. In essence, negotiation is the key to resolving conflicts, making decisions, and reaching agreements that benefit everyone involved. Whether you're navigating a business deal, seeking consensus in a team, or even deciding on a family vacation destination, negotiation skills are at play.

Price negotiation is a specialized form that centres on reaching a mutually agreeable cost for goods, services, or agreements. In the business world, mastering price negotiation is like using a powerful tool that can significantly impact the success of a deal.

Price negotiation isn't solely about driving costs down; it's about finding a balance that ensures the seller's fair compensation while providing the buyer the product's value. It's a dance of numbers, where both sides aim to maximize their gains within the confines of a mutually beneficial agreement.

Negotiation Techniques- Negotiation techniques are the tools in your arsenal, each serving a specific purpose to navigate the dance of discussions. Understanding and employing these techniques can significantly enhance your ability to influence the direction of the negotiation. Here are few of the most effective ways to successfully negotiate.

1. Discounts and Incentives : There are tons of different ways you can offer customers discounts or incentivize a purchase. For Example: Limited-time offers, Price breaks, Seasonal deals, Perks like free shipping or exclusive access to certain

features, Price list and Price Breaks.

Whatever tactic you use, the principle behind them is simple: a purchaser should be able to take from customers something extra. Price breaks (i.e., volume discounts) work well for wholesalers, distributors, and manufacturers that want to encourage higher-value orders from their buyers. Seasonal and time-based deals are better for driving a customer toward a purchase decision.

2. Anchoring : The anchoring negotiation discussion refers to the first price or offer made by either party. Buyer says: "We're looking to spend no more than Rs 500,000 for this. With this tactic, the buyer suggests a target price to anchor the bargaining range. Anchoring in negotiation can help save time by cutting to the chase of negotiation

3. Whack Back : The Whack Back is a negotiation tactic where a buyer pushes back on the first price offered, regardless of how reasonable it is. The buyer might say something like, "we need a lower price" or "is that the best you can do?" or "Your price is too high,".

4. Building Relationships : Vendors who trust you or know you personally are much less likely to haggle you. This could either be because they already feel they're getting a good deal, or simply out of respect.

Either way, relationship building is crucial for professional purchase professional. Especially when you're purchasing big-ticket items (e.g., cars, homes, solar, enterprise software), it's harder to get a deal done.

5. Sticker Shock : The buyer shows he is surprised or taken aback by the price offered. It is an unpleasant feeling of surprise at seeing the price of something. In this technique the supplier is rigid

and might be confident that purchaser is unaware of the product costing or anything related to product cost. Here we can call the purchaser an uneducated buyer that has no concept of what the average market value looks like for solution. In such case the purchaser's needs to get well aware of the fact and factors before going into the negotiations.

6. Silence and Patience : Sometimes, less is more. If you think your prospect is more interested in the deal than they're letting on, giving them the impression that you're not too worried about losing the deal will give you a bit of a leg up in the negotiation process. Skilled negotiators know buyers can smell commission breath from a mile away. They won't want to pay more than they have to.

Note: "Silence" is not to be confused with being too passive. You should still be assertive in your responses, practice active listening, and move the conversation forward. Just don't be overzealous in your communication.

7. Cherry picking : Cherry picking this refers to when a customer gets multiple bids, and then tries to get the best or lowest offer on each item by playing one supplier off the others. Cherry picking is a negotiation tactic where a negotiator chooses the best parts of an offer and rejects the rest. In a negotiation, a buyer might cherry pick by selecting the best offer on each item from multiple suppliers. For example, if one supplier has the best price, another has the best terms, and a third has the best warranty, the buyer might ask each supplier to make a proposal with all three.

8. Value-Based Pricing : Value-Based Pricing method is generally driven by seller. This pricing method involves understanding the customer's needs, preferences, and pain points, and aligning the price with the perceived value of the solution offered. It aims to capture the maximum value customers are willing to pay. Many sales teams set up surveys, customer interviews, or even just do some research to find out what motivates their customers most when it comes to buying. This helps them shape a clear narrative about why your product/service is worth more than competitors'. This value can be in the form of superior product quality, exceptional customer service, or innovative features that set them apart from

competitors.

9. Pencil Sharpening : In Pencil Sharpening method, the buyer primes the seller into accepting a price drop. "I need you to sharpen your pencils. Can you do that?" says the purchaser. "Pencil sharpening" is a negotiation tactic where a buyer suggests that a seller lower their price, but without directly asking for a discount. The phrase is a way of saying that the cost of something needs to be reduced.

10. Going, Going, Gone : Going, Going, Gone is a tactic which uses time pressure to get the seller to lower their price. Sometimes, the buyer creates a sense of urgency, even threatening to leave entirely. In "Going, Going, Gone" is a negotiation tactic the purchaser uses time pressure to get a seller to lower their price by threatening to go to a competitor. The buyer might say something like, "I'm talking to [name of your competitor] later. I think they'll go for this. If they do, I'll go with them".

11. Zero-based costing (ZBC) :

Zero-based costing (ZBC) is a bottom-up method for estimating costs in procurement by considering every factor that goes into manufacturing and selling a product or service. It can help companies identify structural budgetary problems and reduce costs without compromising quality or performance.

12. Rate Tracking : Rate tracking in sourcing can involve using metrics to track and analyze procurement data, including: RM delta rate tracking, spend analysis, contract & price list rate, machine hour rate, market rate, circular rate, average quarterly rate. This will help the purchaser to be in keep the rates intact and in command.

13. Intelligence Reports : Intelligence reports are a monthly commodity price monitor report that provides information on the prices of key commodities in the automobile industry. The report includes information on the following commodities: HR steel, CR steel, Alloy steel, Pig iron, Steel scrap, Coking coal, Iron ore, Virgin aluminum, Copper, and Lead. Eg: The Society of Indian Automobile Manufacturers (SIAM).

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BRANCH NEWS

MUMBAI BRANCH

DISHA - ANNUAL SIGNATURE EVENT 27TH & 28TH NOVEMBER 2024 AT HOTEL WESTIN, MUMBAI

Seventeenth edition of Disha - annual signature event of IIMM, Mumbai was held on 27th & 28th November 2024 at Hotel Westin, Mumbai, with theme being 'Supply chain Transformation -Vikas-Sheel to Viksit Bharat' and the subthemes as **'TECHNOLOGY', 'ESG Practices', 'Beyond Resilience', Talent management 'and 'Public sector reforms.'**

The event started with the beats of Dhols. A large troupe of Dholis, comprising mainly of women, perfected their beats to produce rhythmic crescendo in fully packed Westin Hall, to commemorate the beginning of the 50th anniversary year of IIMM and to signal perfect high energy start to Disha24.

The Inaugural session started with National anthem 'Jana Gana Mana' followed by lighting of lamp at the hands of Key note speaker Mr Vijay Kasi, Partner Kearney, IIMM National President Lalit Raj Meena, Past IIMM National President Bala Iyer, IIMM 1st Vice President P.M. Biddapa, Past IIMM Sr VP J S Prakash Rao IIMM, Disha 24 Convener Satish Palekar, Mumbai Chairman Swapnil Dubey and Past IIMM Mumbai chairmen M H Varma, N D Sadri, Ganesh Apte, Surendra Deodhar, Ashok Mhatre.

Satish Palekar, Disha convenor & past Mumbai Branch Chairman made the opening speech and set the context by focussing on Disha 24 theme and emphasised on challenges, priorities for supply chain towards 'Viksit Bharat', like adopting micro mandate, being future ready.

In his address, **IIMM Mumbai Branch Chairman, Mr Swapnil Dubey** spoke about IIMM and presented Mumbai branch activities and its plans. He urged participants to become IIMM member and join in its activities, stressing on its human & humane values.

Quoting **Swami Vivekananda, Mr Bala Iyer** in his short address outlined journey towards Viksit Bharat, through major milestones @2030, 2047 and 2060.

National President, Mr L R Meena then describing IIMM as a big family, shared about its family values, its various educational courses, international connect and about various events planned this year across India, to mark IIMM golden Jubilee. Citing logistics cost as an example, Mr Meena highlighted the responsibility shouldered by supply chain community & IIMM towards Viksit Bharat. He also took the opportunity to honour Mr Satish Palekar, Mr N.D. Sadri and Swapnil Dubey

with President's medal.

Fellow IIMM member, **Mr. Karthik Santhanam** was felicitated by National President & Bala Iyer for moving up the ladder to CEO position in corporate world which was followed with his short address to the gathering.

As **keynote speaker, Mr Vijay Kasi, Partner, Kearney India** shared powerful presentation 'REWIRE supply chains to win in the new world' highlighting challenges & viable solutions, in aligning with fast changing customer needs in the world under poly crisis. Using Global COO's insights and few compelling examples like 'speeds' in Pit stops of formula 4 racing, fashion garment leader Shein from China and quick commerce industry, he propounded the concept of 'supply chain rewire'. Refocus on business objective to redesigning of operating model to reimagining of technology. This concluded the Inaugural session with a Vote of Thanks by IIMM Mumbai Hon. Treasurer Arun Mehta.

At the start of technical sessions, **Sushant Roy** conducted pulse survey on participants expectations on Disha24. **Technical Sessions on Day 1 - 27/11/24**

Sitaram Kandi, Chief Human Resource Officer, Tata Motors while sharing his experiences captivated the entire audience throughout his talk on 'Motivating Energetic Teams – Handling Gen Z at workplace'. Some of his key insights while highlighting Gen X to Gen Z relations, were importance of family dinner table, 'job is part of life and not life', and emergence of reverse mentoring. He also shared on challenges faced while inducting women workers on tata motors assembly line and how they have overcome it to a stage where some of premium Tata car assembly lines are fully managed by women.

Ashwani Narang, Vice President & Business Head - Intelligent Spend and Business Network of SAP India & South Asia presented on 'Technology to support SCM'. As per him, focus on recent technology & AI, cost savings lead by ESG Talent management are some of the thrust areas, and with suppliers are expected to do most part of administrative work.

Next **Satish Palekar** succinctly expounded on entire spectrum of energy transition scenario, within India as well as globally, describing many push & pull levers for transition. Using nicely designed slides, Mr Palekar explained all aspects of energy transition like power capacities of various sustainable power generation types, inadequacies of energy storage systems, future on capacities as well as recent technologies to bridge the gap.

Post lunch **Mr HR Dash, General Manager - Major projects,**

BPCL spoke on 'Contract Management: Issues and Challenges' at Pre-Award Contract stage and Post Contract Award Stage. Effective conceptualisation, effective planning, proper documentation, adherence to Quality, HSE standards, allowing no cost overruns were some of the success factors highlighted through his well-structured presentation.

Biju Mathews, Chief Supply Chain Officer - Chemicals, Fashion Yarn & Insulators Business of Aditya Birla group then shared on SCM Challenges in the Chemical business. Using well-structured PPTs, Mr Mathews highlighted SCM challenges in transport industry like complexity in transportation and how it amplifies global disruptions in supply chain and, potential solutions like continuous risk analysis near shoring or off shoring, global multi modal transport.

Panel discussion on 'Procurement in a Globalized World' was led by **Mr Bala Iyer** with panellists - **Mr. Sathia Raj CPO, Sr. President, Ultratech Cement Ltd, Ms. Seema Mohanty Global Supplier Manager Bayer India, Mr. Sandeep Karkare, Head Direct Materials Procurement & Licence, Engineering Contracts RIL and Mr. Rupchand Lohana, Head Offshore Analytics group, Central Digital SCM, L&T Energy Hydrocarbon and Offshore.** Some of the issues discussed were technical procurement vs under license procurement, IPR rights, procurement of project material, standardisation and supplier collaboration and digital solutions like collaborative platforms.

High tea with snacks followed technical sessions. This was specifically arranged to facilitate networking opportunity to participants and speakers.



Technical Sessions on Day 2 - 28/11/24

Day 2 began with '**Awakening**' corporate kirtan, by **Mr Sameer Limaye, Motivational speaker**, staunch follower of Ramdas Swami. Drawing upon shlokas from Das Bodh and his previous corporate experience, Mr Limaye enthralled the audience into full belief of 3 key words, Shavan, Manan, Satatya for self-growth. One of the shlokas, rhymes with IIMM ethos, '**Swayam sikh-kar sikhave, vahi Shresth pad pave. Lok jo ulzakar rah jave, Unhe Vivek bal se Sulzaye.**

Followed by **Mr. R. Veeraraghavan, Head Strategic Sourcing, FES,M&M Ltd** spoke on '**Strategic Sourcing: Beyond Resilience**' to share on how resilience is being built at Mahindra's supply chain .Through simple but well-structured presentation, Mr Veeraraghavan shared some of major initiatives towards supplier risk assessment , risk management and its mitigation, on all parameters of operations like Fire, safety, Finance etc over and above global disruptions, through structured

reporting mechanism like BRSR, EPR, QCO (quality control order), ESG, DSA etc.

Next was **Mr. R L Bharadwaj, Head of Procurement Research Centre**, Arun Jaitley National Institute of Financial Management on Public Procurement Reforms. He gave very crisp and self-explanatory presentations on reforms in procurement systems, especially Gem portal.

Ms. Abanti Sankaranarayanan, Chief Public Affairs Officer and Member of the Group Executive Board of M & M Ltd presented on **Building sustainability & ESG with vendor**, highlighting various initiatives under implementation / monitoring at Mahindra's for addressing all issues like greenhouse gases, water scarcity, pollution, land mis use, waste disposal, reduction in resource / material use in addition to use of more & more sustainable energy towards plant positive.

Bridging the Talent Gap was next session by **Dr Sanjay Deshmukh, former vice chancellor, adjunct professor at Mumbai University**. The Presentation based on his research was highly informative and could be useful for skill gap analysis. Dr Deshmukh has graciously agreed to share his research report with IIMM and the delegates attending Disha 2024.

Next up, **Mr Jaykumar, Executive, Indian Foundation for Quality Management**, gave a thought-provoking presentation on 'Getting India Inc. Quality standards to Global Benchmark'. He showed that India's export share has remained fairly stable at lowly 1-1.6%. For 'make in India' to take off India incorp has to not only elevate quality standards, but also to market it, like what Japan, Germany etc did with their JUSE, ASQ, or EFQM. IFQM has been founded by industry leaders like Tata Sons, TVS Motor Company, Sun Pharma, Biocon etc. to fill up that role.

Mr. Harsh Mallia, Senior Vice President P&C, RIL enlightened on **Procurement of Services and associated Challenges**. Some of growth challenges to service industry, as per him are infrastructure, cyber security, Technology, and shortfall of skilled manpower.

Concluding session on **Global logistics** was by **Mr Pavithran M Kallada, Director of BDP logistics**, when he expounded on various challenges to shipping logistics industry, like constant unpredictability due to shipping capacity fluctuations and possible solutions like 'Friends shoring' or creating collaborations across board.

During the event, Disha 2024 Souvenir was unveiled which has 8 articles from immensely knowledgeable authors and practitioners. Also, IIMM Mumbai Chairman launched the Research survey on 'Future Competencies in Supply Chain' which will enable professionals and companies to know the future trends in skill development and also, create learning opportunities for practitioners.

Such megaevent calls for astute anchoring. **Surendra Deodhar** did it brilliantly in his inimitable and eloquent style engaging the audience as well as introducing the

speakers.

Finally, there were two lucky draws with prizes galore. First Lucky draw was for the delegates who visited exhibition booths, with lucky delegates from each Booth winning cash prizes. Second lucky draw was open to all registered participants with five lucky participants getting cash awards. Quiz competitions based on the event sessions was conducted by **Mr Sushant Roy** on day two to keep participants engaged and event lively. Winner and next two Runners up were given cash awards.

The event concluded after formal vote of thanks by Hon. Treasurer, **Mr. Arun Mehta**.

This event, which was extremely well received by about 260 participants, was made possible by tireless efforts of Mumbai team for weeks before & during the event, shaped under guidance, leadership & motivation provided by Disha 24 Convenor Satish Palekar, Past National President Bala Iyer, and Branch Chairman Swapnil Dubey.

IIMM NHQ MUMBAI

The Indian Institute of Materials Management (IIMM) recently organized a successful two-day residential program for Bharat Heavy Electrical Ltd. (BHEL) on December 11th and 12th, 2024, at the IIMM National Headquarters (NHQ) in Belapur, Navi Mumbai.



The program was led by Mr. S. K Sharma and Dr. Jayanta Chakraborty. "The program consisted of a diverse group of management staff from BHEL, who actively participated in the event. The training program focused on 'Optimising Cost Estimation in Thermal Power Plant

Projects", aiming to provide valuable insights and strategies for effective cost estimation in thermal power plant projects. "The program incorporated a range of interactive activities, including case studies and role-plays, to make the learning experience engaging and effective. A test was conducted at the end of the program, which all participants passed successfully. "Overall, the program was highly effective in achieving its objectives, with participants gaining valuable knowledge and skills that can be applied in their professional roles.



CHANDIGARH BRANCH

IIMM Chandigarh branch organised a one day seminar and Awards ceremony on the occasion of 39th Annual day celebration of Branch on 29th November 2024 at Hotel Radisson Zirakpur near Chandigarh. Theme of the seminar was Digital Supply Chain Transformation. Mr Rajesh Gupta welcome the guests and delegates. Mr S K Sharma Former National President emphasised the importance of Supply Chain Management which is the backbone of Indian Economy. Mr G.k.Agnihotri Vice president North shared progress of Northern branches. Mr O.P.Longia Former National President introduced IIMM

to participants. Almost 70 Delegates participated from Industry from Haryana, Punjab and Chandigarh. Theme of the program is Digital Supply Chain Transformation. Papers were presented by Luminous, Godrej, SML Isuzu, K India, Neuman group of industries, Bharat Electronics limited, Nahar paper and board Ltd and motivation lecture by Ex IAS Vivek Attrey. The program was presided over by Sardar Kultar Singh Sandwan Hon Speaker legislative assembly of Punjab. He appreciated the activities of IIMM Chandigarh branch. On this occasion, Mr Rakesh Bhalla CFO SML Isuzu Chandigarh was conferred with Distinguish Supply Chain Management and outstanding CFO award. Ms Aashria Jain of Nahar paper and board Ltd Ludhiana was honoured with Outstanding CEO of the year MSME category and Neuman group of industries Faridabad and K India were given Awards in Innovative and Creative category.



CHH.SAMBHAJINAGAR (AURANGABAD) NEWS

IIMM Aurangabad has conducted Program on Indian Electrical And Electronic Manufacturer Association (IEEMA) has organized grand Preview of ELECRAMA 2025 at Chh. Sambhajinagar on 29th November 2024. The event had taken place at Hotel Hyatt Place.

The Key Guests were Mr. G. Sreekanth. IAS, Commissioner, Municipal Corporation & CEO, Smart City Corporation Ltd, Chh. Sambhajinagar, and Mr. Rahul Gupta, IAS, Joint Managing Director, Maharashtra State Electricity Distribution Co. Ltd., Chh. Sambhajinagar. Mr.Sanjay Sanghai, National Council Member of IIMM as well as President- Group Sourcing, Endurance Technologies Ltd was the guest of Honor. Mr.Sanjay Sanghai in his speech said that it is good that IEEMA has selected Chh.Sambhajinagar for Preview of ELECRAMA. This shows that the city has huge potential. He further said that ELECRAMA is a platform to connect the world with Indian industry in respect of technology, new trends and innovation for future energy transition. It will showcase quality electrical and allied industries products for international buyers with compliance to international standards and environmental aspects. IIMM teams from various branches across India will be visiting the ELECRAMA.

Mr.Sushant Patare, Chairman of Indian Institute of Materials Management (IIMM), Chh.Sambhajinagar said that IIMM is supporting ELECRAMA 2025 and has urged all the life members, Industrial associations and Executives working in SCM to visit ELECRAMA. He further said that ELECRAMA is the flagship showcase of the Indian Electrical Industry ecosystem and the largest standalone show in the electrical and allied equipment industry and also the largest T&D show in the world. It is a gateway to the world of electricity. ELECRAMA will be held at India Expo Mart, Greater Noida, Delhi NCR from 22nd to 26th February 2024.

Indian Institute of Materials Management (IIMM), Chh.Sambhajinagar has organized an One day Training program on SAP MM at IIMM Excellence Training Centre as on 22nd Dec 2024.

Mr.Vaibhav Chaudhari, Senior Associate Consultant SAP MM & PP at INFOSYS was the Key Trainer. The Topics covered during Training were : Introduction to SAP, Various aspects of MM which includes Material Master, Vendor Creation, Purchase requisition, PO creation, PO Amendment, Storage locations, Good Receipt (MIGO), Transfer Posting, Goods Issue, Transfer Posting, Sub-Contracting management, Stock transfer order and T-Codes used in MM Module.

The Co Trainers were Mr.Datta Khodse, Asst Manager- Purchase at Marathwada Auto Compo Pvt Ltd and Mr.Bappa Golhar, Manager- Logistics at Marathwada Auto Compo Pvt Ltd.

The participants were provided with Training Material and SCM-Pro E-Magazine on Theme : The Science of Supply- Advancements in Modern Materials

Management, A Study by Mr.Sushant Patare, Chairman of IIMM CSN Branch.

Mr.K.Srihari (Past Chairman), Mr.Paras Mutha (Secretary) and Dr.Narendra Joshi (NC-Member) felicitated the Trainer and the Co-Trainers. Mr.Shrikant Muley, Mr.Ramesh Jaulkar, Mr.Lalit Lohade, Mr.Ameya Kolte took efforts to make the Training successful. Mr.Sushant Patare, Chairman distributed certificate to the Participants. The full day class room training was attended by 35 participants.



Group Photo with Faculty Participants of SAP MM Training on 22nd Dec. 2024



Mr.K. Srihari Past Chairman offer Memento to Faculty Mr. Vaibhav Chaudhary



Mr.Paras Mutha -Secretary of Branch offer Memento to Co-faculty Mr.Datta Khodse

BANGALORE BRANCH

26.10.2024 – Monthly Lecture Program / Free Webinar: The IMM Bangalore Branch had organized a monthly lecture program/free webinar on “**Supply Chain Analytics: Effective Supply Chain Management through Data-Driven Decision**” on 26th October 2024 (Saturday) at 7.00 pm on MS. Teams Meet. Speaker was **Mr. Kamalendu Sith, General Manager—Process Excellence and Digital Transformation, Gokaldas Exports Ltd.** Well attended by members and received good feedback from the participants.

08.11.2024 – Monthly Lecture Program / Free Webinar : IIMM Bangalore Branch has organized a monthly lecture program/free webinar on “Sustainable Materials Management” by Mr. Girija Shankar Mahapatra, Microprism Technologies LLP (Managing Partner), on 8th November 2024 (Friday) from 6:30 PM to 7:30 PM on MS Teams. Well attended by the participants and received very good feedback.

22.11.2024 – One-day workshop : IIMM Bangalore Branch had organized a one-day workshop on “**Negotiation Skills**” on 22nd November 2024 at Paraag Hotel, Raj Bhavan Road, Bangalore. Mr. A.V. Shama Sundar, Branch Chairman, welcomed speakers and delegates. Mr. S.M. Nagaraj, Senior Consultant, addressed the participants about IIMM Activities. Sessions Speakers: Mr. Rajendran P.K. and Mr. G. Balasubramanian. About 31 participants, including members from various sectors and organizations, attended the workshop. The interactive workshop has received very good feedback.

23.11.2024 – CXO Meet : IIMM Bangalore Branch had organized a CXO Meet on 23rd November 2024 (Saturday) on MS Team Meet at 4.00 pm.

Participated by leaders from various industry verticals and SCM/MM professionals. Mr. A.V. Shama Sundar, Branch Chairman, welcomed the gathering. Mr. Balasubramanian, course coordinator, presented about IIMM & SCALE journey. The moderator was Mr. Sunil Bhardwaj, Partner, Impact Easer Consulting. Panellist: Ms. Asha Sampath, brand expert and independent director in various corporates, Dr. Shalini Mathur, lead merchandising at Silver Spark Apparel Ltd. (A Raymond Lifestyle Initiative) and a sustainability expert, Mr. Sampath Raghavan, Head of Exim & Logistics, Silver Spark Apparel Ltd. (A Raymond Lifestyle Initiative) and a sustainability expert, Mr. Debo Jyothi Dey, Vice President, Dept. of Research, Multi Commodity Exchange of India Ltd.

Mr. Channamallikarjun B. Patil, Director of AI Policies and Strategy, Neurons AI. Discussed and highlighted on “Sustainable, Resilient, Innovative, and Inclusive Supply Chain and Logistics”, Mr. M.R. Achyuth Rao, Vice

Chairman, proposed a vote of thanks.

06.12.2024 - SCALE - 2024: A great success of appreciation was achieved by the IIMM Bangalore Branch for conducting a one-day mega event, SCALE 2024 (24th Edition), on 6th December 2024 at The Capitol Hotel, Bangalore. The event got praises and accolades for its organizing, hospitality, choice of theme, and host of speakers who unequivocally endorsed the possibility of the theme “**Sustainable, Resilient, Innovation and Inclusive Supply Chain and Logistics.**” The event is a benchmark for expressing IIMM expertise in the field of Supply Chain Management but also proves a huge platform for sharing knowledge on the best and latest in the professional field across the globe. The delegates derived maximum input through various high-powered “**Sustainable, Resilient, Innovation, and Inclusive Supply Chain and Logistics**” technical and power panel sessions, which are extremely useful for their day-to-day professional field, implementing professional development.

Mr. Lalit Raj Meena, National President, addressed the gathering about the activities of IIMM.

Dr. Vamshi Krishna, IRS, Additional Commissioner of Customs, was the chief guest for the inaugural function of the SCALE 2024 program. **Mr. Sampath Raghavan, Head-Exim and Logistics, Ramond Lifestyle Ltd.,** delivered the keynote address on this occasion. **Mr. A.V. Shama Sundar, Branch Chairman,** welcomed the gathering. **Mr. Paul George, National Council Member,** spoke about the SCALE and Theme.

On this inaugural session, the short-term certification course on “SCM Analytics” was launched by **Mr. Rajendra Desai, Director, SJIM,** and the course brochure was released by **Dr. Vamshi Krishna, IRS, and Mr. Lalith Raj Meena, NP, IIMM,** accompanied by Mr. P.M. Biddappa, Sr. VP., Mr. Roby T.A., VP South, Mr. Bala Ayer, Past National President, Mr. A.V. Shama Sundar, Branch Chairman, Mr. M.R. Achyuth Rao, Branch Vice Chairman, Mr. Sampath Raghavan, Key Note Speaker, Mr. G. Balasubramanian, Course Co-Ordinator, Mr. Kamalendu, Faculty, Paul George, NC. Member, and Mr. T.R. Parasuraman, Theme Key Speaker. A video on SCM Analytics presented/played by Mr. Rajendra Desai.

Technical Sessions Speakers were **Mr. T.R. Parasuraman, Chairman, KSDC, and Senior Executive Advisor, Toyota Industries Engg,** who spoke on the challenge and way forward in supply chain management. **Mr. Channamallikarjun B. Patil, Director of AI Policies and Strategy, Neurons, on Innovation and Technology Enablement in SCM; Mr. Rajendra Desai, Director of Training and Consulting, SJIM; and Dr. E. Ravi Shankar, Chief Growth Officer, AGX (I) Logistics Pvt. Ltd., spoke on SCM Analytics.** Dr. M.A. Narasimha Murthy, Senior Director, Quality Management and Global Head of

Software Quality Management, Infineon Technologies, on SCM Focus: Legal Eye or Eagle Eye.

Post-lunch sessions at SCALE 2024: Session handled by **Mr. Ramanathan Subramanian** on benefit realization management. **Mr. P.J. Raghavendra Hande, Managing Director, Janani Water Technologies Pvt. Ltd.**, gave the presentation on the pre-treatment plant (tube settler, clarifier, and pure water plant—application equipment). On this occasion, the SCALE 2024 souvenir has been released by **Mr. P.M. Biddappa, Sr. Vice President; Mr. Roby T.A., V.P. South; Mr. A.V. Shama Sundar, Branch Chairman; and Mr. Harsha K.C., Advisor SCALE 2024**, accompanied by organizers Mr. Akash Gupta, EC Member; Dr. G.S. Raju, EC Member; Mr. C.S. Subash, EC Member; Mr. Paul George, N.C. Member; Mr. Karunakara, EC Member; Mr. D. Lakshmaiah, EC Member; and Mr. S.M. Nagaraj, Senior Consultant, IIMM.

Program followed by Power panel session on theme **“Sustainable, Resilient, Innovation and Inclusive Supply Chain and Logistics.”** Opening remarks and addressed by Mr. Bala Iyer, moderator of the Power Panel Session. Panelists were Dr. Adithya Gupta, COO, IIM-Bangalore, and Mr. Sampath Raghavan, Head, Exim and Logistics, Raymond Lifestyle Limited. Mr. Panish Javagal, Former Associate Vice President—Enterprise IT, HGS—Hinduja Global Solutions, and Mrs. Asha Sampath, Founder—Brand Horizon and Independent Director on Multiple Boards.

Participants had an opportunity to interact directly with panel speakers and the moderator. Events were well appreciated by the participants. The entire program was very well organized by the EC and SCALE 2024 team, with the leadership of **Mr. A.V. Shama Sundar, Branch Chairman**.

Mr. Paul George, N.C. Member, IIMM, was Master of Ceremony and well-coordinated by Mr. G. Balasubramanian, Course Co-Ordinator, and Ms. C.S. Subash, Executive Committee Member. **Mr. M.R. Achyuth Rao, Vice Chairman**, proposed a vote of thanks.

The event concluded and received excellent feedback from the participants.

18th and 19th December 2024: In-house Training Program:

IIMM Bangalore Branch had organized an in-house training program on **“Negotiation Skills”** for the executives of Pricol Limited, on 18th and 19th December 2024 at their venue. **Mr. Rajendran and G. Balasubramanian**, senior faculty, handled the sessions. Around 35 participants attended the program. We received excellent feedback from the participants.

20.12.2024: Monthly Lecture Program: The IMM Bangalore Branch had organized a monthly lecture program/free webinar on “Warehousing—Practical

Issues Faced in the KPI's for Branded Commodities” by **Dr. E. Ravi Shankar, Chief Growth Officer, AGX (I) Logistics Pvt. Ltd.**, on 20th December 2024 at 6:30 pm on MS. Teams Meet. Well attended by members and received good feedback from the participants.





IIMM Research Centre

CENTRE FOR RESEARCH IN MATERIALS MANAGEMENT (CRIMM)

IIMM has set up CRIMM in Kolkata jointly with the Techno India University which is one of the renowned and largest Private University in West Bengal. A MOU was signed with TIU on 17th of November, 2017. Techno India University, West Bengal, promoted by the well-known Techno India Group is a leading Private University in the state and the country

Objectives and Activities of CRIMM in brief

- To promote research in materials management discipline.
- To collaborate with industry for furthering the academic advancement of materials management and its application to industry.
- To render assistance to industries in problem solving projects, development activities, etc
- To take up project consultancy work in Materials Management. Centre will act as a nodal point for co-ordination and integration of research information in the field of Materials Management for on-going and completed research work in other countries

Research Fellowship

The candidate should have a Master Degree in any subject/discipline or equivalent professional

Management qualification i.e. PGDBM, PGDMM etc. with at least 50% marks in aggregate at the graduation and post-graduation level. The candidate should have experience in working in Materials Management discipline or allied areas in industries. In case of highly experienced candidate in the field of Materials Management, and/or Engineering Graduates, Master Degree may be dispensed with. Preference will be given to industries sponsored candidates

The fees for such research studies will depend on the specific problem/area and the tenure, which will be borne by the sponsoring organisation. Those who will take up such Fellowship research studies on their own expenses, will have to bear the expenditure on their own. Successful Research Fellow from CRIMM shall have the unique opportunity to pursue PhD in Techno India University, West Bengal with condensed course work.

Governing Committee

A steering Committee has been constituted to oversee the working of the centre consisting of nineteen members, eight from Techno India University, West Bengal, eight from IIMM, and three from industry.

For more information please contact

Prof. (Dr.) Suresh Kumar Sharma

Jt. Chairman –CRIMM

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EXECUTIVE HEALTH

GETTING AT LEAST 5,000 STEPS A DAY COULD IMPROVE DEPRESSION, MOOD

- **A new study found that walking 5,000 or more steps daily was linked to fewer depression symptoms.**
- **More benefits for mental health were seen when people walked at least 7,500 steps a day.**
- **Some people may experience benefits with just 1,000 steps a day, the findings suggest.**

Walking is not just a way to get from one place to another. New research suggests that walking can also improve your mood, adding to the heart-related and other benefits of this low impact form of exercise.

In the paper, published December 16 in *JAMA Network Open*^{Trusted Source}, researchers found that adults who walked 5,000 or more steps a day had fewer depression symptoms compared to people who walked less.

The benefits increased as people walked more. Researchers found that those who clocked at least 7,500 steps a day saw a 42% decrease in depression symptoms.

The study did not look at whether the benefits of walking plateaued at some point beyond that. However, researchers found that even an increase of 1,000 steps a day resulted in a lower risk of depression.

In another analysis, researchers found that people who achieved 7,000 or more steps a day had a lower risk of developing depression compared to those who walked less.

“The implication of this [new] study is that increasing physical movement reliably decreases depression by significant measurable amounts. Walking may also lower the risk of becoming depressed,” said David Merrill, MD, PhD, a geriatric psychiatrist at Providence Saint John’s Health Center in Santa Monica, CA. Merrill wasn’t involved in the new study.

Walking helps reduce depression symptoms

For the new paper, the authors reviewed the results of 33 previous studies looking at whether walking reduced symptoms of depression in adults. Combined, over 96,000 adults were included in those studies.

The researchers also combined and analyzed the results of 29 studies in a meta-analysis. This is a statistical way of creating a study with a larger number of participants.

The studies included in the review measured daily step counts using smartphones, pedometers, or other wearable devices. Most studies recorded daily step counts over seven days, although one monitored it for a full year.

The main outcome measured in the studies was either a diagnosis of depression or self-reported symptoms of depression with no formal diagnosis. Some studies excluded people who reported having depression or who had mild to severe symptoms of depression at the initial study visit.

The new paper had certain limitations. First, it’s possible that people with fewer symptoms of depression walked more each day because they felt better.

“For many people, particularly those battling depression, the idea of engaging in structured exercise can feel overwhelming,” said Supatra Tovar, PsyD, a clinical psychologist, registered dietitian, and fitness expert. However, “walking offers a low-pressure, sustainable alternative.” Tovar wasn’t involved in the new research.

In addition, the new paper didn’t examine whether other factors, such as social connections^{Trusted Source} gained through walking with others, might have decreased depression symptoms.

The location of your walk may also matter. Feeling connected to nature has been shown to improve your mood.

Set a goal of at least 5,000 daily steps

Overall, the results of the new paper fit with an earlier study, which found that older adults who walked 7,000 or more steps a day had a 29% lower risk of having symptoms of depression after two years.

It also adds to research showing that higher levels of physical activity provide protection against developing depression.

“Given [the new] study’s findings, I would encourage my clients — particularly those with mood disorders or looking to improve their mental well-being — to aim for a minimum of 5,000 steps a day as a starting point,” Tovar told Healthline.

“This amount appears to provide significant mental health benefits, with further improvements observed as individuals approach 7,500 steps or beyond,” she said.

The new paper highlights that even small increases in daily steps results in decreases in symptoms of depression.

“You don’t need to start running or even walking marathons to feel better,” Merrill told Healthline. “Even just a little (more) movement can make a big difference.”

The best part is that walking is a low-impact form of exercise that most people can do safely.

“The accessibility of walking is particularly important: it does not require specialized equipment, a gym membership, or extensive fitness knowledge, making it an inclusive intervention that anyone can adopt into their routine,” said Tovar.

“This simplicity removes barriers that often prevent people from pursuing physical activity, especially those struggling with the low motivation and fatigue often associated with depression,” she said.

Walking complements standard depression treatments

Tovar recommends that people start small with goals they can achieve right now, maybe 1,000 to 2,000 steps a day, and increase this by 500 steps at a time when you feel ready for more.

She said you can also incorporate walking into your daily life, such as taking the stairs instead of the

elevator, walking after meals, or parking further away from stores.

In addition, “for individuals with more severe depression or physical limitations, I would recommend integrating safe, enjoyable environments, which can amplify the mental health benefits due to the additional calming effects of natural surroundings,” Tovar said.

While the new paper shows that walking can improve individuals’ mood, those who currently have depression may need more support.

“Combining lifestyle medicine approaches like increasing walking with behavioral health approaches like antidepressants and psychotherapy may result in the best outcomes for persons living with depression,” said Merrill.

“If you’re depressed, there are always more treatment options that can be tried and combined to improve how you’re feeling,” he said. “It’s important to not give up hope.”

Takeaway

Researchers reviewed 33 previous studies looking at whether walking reduced symptoms of depression in adults, with a total of over 96,000 adults included in those earlier studies.

Walking 5,000 or more steps a day was linked to fewer symptoms of depression compared to walking less. People who walked at least 7,500 steps a day saw even greater benefits, with a 42% decrease in depression.

Even a small increase of 1,000 steps a day resulted in a lower risk of depression. The authors of the new paper did not look at whether the benefits of walking plateau at some point.

Experts recommend that people increase their daily step counts to help improve their mood. They suggest starting small and increasing slowly. People with depression may benefit more from combining walking with standard treatments like antidepressants and psychotherapy.

Source: www.healthline.com

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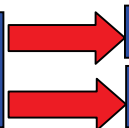
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