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# MATERIALS MANAGEMENT REVIEW



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## Memorandum of Understanding (MOU) signed Between **IIMM and AMTZ**



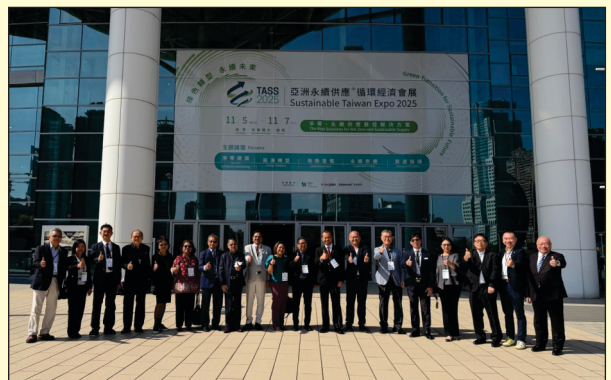
**Mr. Lalit Raj Meena, National President - IIMM and  
Dr. Jitendra Sharma, CEO & Managing Director  
-Andhra Pradesh MedTech Zone (AMTZ)  
Signed Three Different MOU at Visakhapatnam on  
14th November 2025.**



## IIMM & AMTZ



## IFPSM World Summit 2025

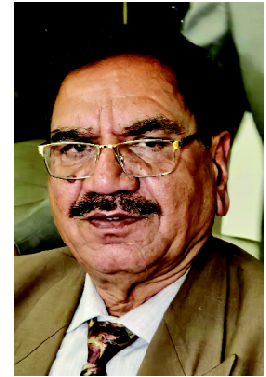






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## *From the Desk of National President & Editor in Chief*



Greetings from your National President!!!

As I write my last message in MMR as National President, the memories of the past two years come alive before me. The tenure of the current NEC began on a very promising note, filled with enthusiasm and a shared determination to achieve meaningful milestones within a short span of time.

NATCOM 2025 scheduled on 29th & 30th November 2025 on the theme - SUSTAINABLE SUPPLY CHAIN: A PATHWAY TO NET ZERO CARBON FOOTPRINT organized by Ahmedabad Branch.

From raw material extraction to last-mile delivery, every step matters—and today's global supply chains face unprecedented complexity. Cross-border operations, evolving regulations, and rising stakeholder expectations for transparency have made sustainability not only a challenge but also a powerful competitive advantage.

Participants will learn and benefit from the latest trends in supply chain management, becoming conceptually clear, staying updated, and applying creativity to solve SCM challenges through technology. They will be able to develop supply strategies tailored to their business verticals and effectively manage current business dynamics. Participants will also learn to identify opportunities arising from emerging disruptions and convert them into profitable outcomes. In addition, they will gain the advantage of enhanced networking with peers across industries and receive cutting-edge insights from visionary speakers.

I extend my best wishes to the NATCOM 2025 for a highly successful and impactful event.

I take this opportunity to express my heartfelt gratitude to my NEC colleagues, NC members, Branch Chairmen, Past Presidents and the NHQ staff members in Mumbai and Delhi for the unwavering support they have extended during my tenure.

I wish all members of my extended IIMM family good health, peace, and prosperity.

With warm personal regards,

A handwritten signature in black ink, appearing to read 'Lalit Raj Meena'.

**Lalit Raj Meena**  
National President  
mmr@iimm.org





# MATERIALS MANAGEMENT REVIEW

Volume 22 - Issue 2

(December 2025)

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# THE 9-P MODEL: A PATH TO SUCCESS FOR MATERIALS MANAGEMENT PROFESSIONALS

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**A**bstract : Success is the result of intentional effort, strategic thinking, and a commitment to growth. To navigate the complexities of a professional career, one must cultivate key qualities that foster excellence. Professional ethics form the foundation, and the “9Ps” framework offers a structured approach to career success, emphasizing the traits that define high achievers across industries. These 9Ps—Passion, Pride in Your Job, Perseverance, Performance Focus, Problem-Solving, Planning, Pragmatic Approach, Partnering, and Presentation (Packaging Your Outcome)—serve as pillars for professional success. Passion is the central driving force that energizes the remaining eight Ps. By mastering these principles, individuals can overcome challenges and leave a lasting impact in their fields. This article presents why each “P” matters, along with real-life examples.

Materials Management professionals operate at the intersection of efficiency, ethics, and enterprise. Their decisions influence cost, quality, and continuity across the value chain. The 9-P Model—Passion, Pride, Perseverance, Performance Focus, Problem-Solving, Planning, Pragmatism, Partnering, and Presentation—offers a holistic framework to guide professional growth and organizational impact. This article extends the original 9-P Model to the context of Materials Management and Procurement, illustrating how each “P” can shape credibility, collaboration, and contribution in this strategic function.

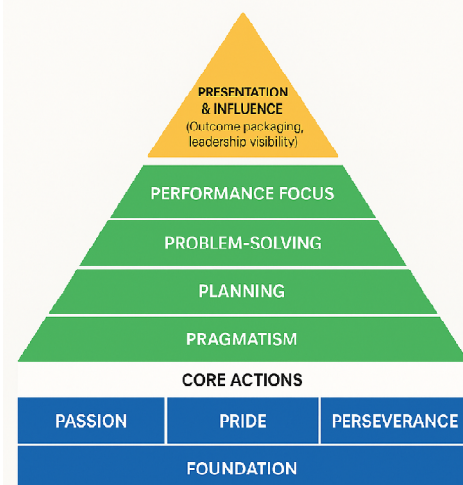
**Keywords:** 9-P Model, Materials Management, Procurement Ethics, Supply Chain Excellence, Professional Growth, Leadership

## 1. Introduction (Improved Flow, Content Fully Preserved)

Materials Management and Procurement functions are critical to ensuring that operations flow without disruption while upholding transparency and cost-effectiveness. Yet, true excellence in this field extends beyond process efficiency—it requires personal ethics, leadership depth, and strategic foresight. Materials Management and Procurement play a vital role in an organization’s success by ensuring that customer delivery, quality, and cost objectives are consistently met.

The 9-P Model serves as a compass for professionals in this domain. Each of the nine principles defines a behavioral and strategic dimension that transforms procurement from a transactional activity into a value-driven enterprise function.

## The 9-P Model for Materials Management Professionals



## 2. The 9-P Framework Extended to Materials Management

**1. Passion Why It Matters:** Passion fuels sustained motivation, creativity, and a relentless pursuit of excellence. Professionals who are passionate about their work inspire others and push boundaries to achieve greatness.

**Real-Life Example:** J. R. D. Tata embodied passion through his vision for industrial progress. His relentless enthusiasm for quality, innovation, and national growth continues to inspire professionals across sectors.

**Extension to Materials Management:** The Materials Management professional interacts continuously with both internal and external stakeholders. Demonstrating passion in every aspect of this engagement is vital, as it reflects commitment, credibility, and ownership. A passionate materials leader approaches supplier management not as a routine task but as a mission. They initiate supplier innovation forums, promote local sourcing excellence, and infuse enthusiasm within cross-functional teams. Passion ensures that procurement remains purpose-driven, not merely process-driven.

## 2. Pride in Your Job

**Why It Matters:** Taking pride in one’s work leads to job satisfaction, credibility, and professional fulfillment. It drives individuals to deliver their best, regardless of challenges or recognition.



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**Real-Life Example:** Dr. Verghese Kurien, the architect of India's White Revolution, exemplified pride in purpose. His deep respect for farmers and unwavering commitment to quality created a cooperative movement that transformed rural India.

**Extension to Materials Management:** When Materials Management professionals take pride in their role as ethical custodians of company resources, procurement evolves into a symbol of trust and responsibility. Pride ensures compliance, fosters respect among stakeholders, and sustains the organization's reputation for fairness. Every materials manager is, in essence, an ambassador of the organization to the external world. They must demonstrate the utmost pride in their job, their organization, and their function — for this pride becomes visible in every negotiation, partnership, and professional interaction.

### 3. Partnering (Collaboration & Stakeholder Engagement)

**Why It Matters:** Collaboration fosters innovation, builds trust, and drives collective success through effective engagement with stakeholders.

**Real-Life Example:** Ratan Tata's strategic partnerships — such as the acquisition of Jaguar Land Rover and collaboration with Starbucks — showcased the power of mutual growth through collaboration.

**Extension to Materials Management:** Partnering is a critical competency for every Materials Management professional and a cornerstone of long-term success. The professional must clearly understand internal stakeholder requirements and collaborate with suppliers to source, develop, or tailor solutions that align with organizational goals. Today, supplier partnerships extend far beyond contractual boundaries — they nurture co-innovation, agility, and sustainability. A partnering mindset enables long-term relationships, joint development initiatives, and alignment with ESG objectives, leading to shared growth and organizational resilience.

### 4. Performance Focus (Result Orientation)

**Why It Matters:** A strong focus on performance and results drives professionals to set ambitious goals and remain committed to achieving them.

**Real-Life Example:** Taiichi Ohno, creator of the Toyota Production System, redefined performance through continuous improvement and waste reduction, making operational excellence a measurable science.

**Extension to Materials Management:** The Materials Management professional plays a key role in achieving organizational profitability through cost savings and cost avoidance. Their commitment to meeting target pricing and managing supplier performance directly influences the success of projects and organizational outcomes. Performance focus in procurement translates into measurable KPIs such as cost savings, on-time delivery, supplier quality, delivery commitments, and continuous improvement. By aligning these indicators with strategic objectives, materials professionals transform operational efficiency into strategic business value.

### 5. Planning Skills

**Why It Matters:** Effective planning minimizes risks and maximizes opportunities by ensuring efficient time, resource, and priority management.

**Real-Life Example:** Dr. E. Sreedharan, known as the "Metro Man of India," exemplified planning precision by delivering complex infrastructure projects on time and within budget through structured foresight.

**Extension to Materials Management:** Planning in procurement integrates demand forecasting, supplier lead times, and logistics. Through proactive scheduling and scenario-based simulations, materials planners balance cost and continuity with strategic agility.

### 6. Pragmatic Approach

**Why It Matters:** A pragmatic mindset balances idealism with practicality, enabling professionals to navigate challenges with realistic solutions.

**Real-Life Example:** Narayana Murthy, founder of Infosys, combined idealism with pragmatism to build a global IT enterprise rooted in ethics yet responsive to market realities.

**Extension to Materials Management:** In the Materials Management function, pragmatism often becomes indispensable. Situations such as urgent shortages, unexpected supplier constraints, or sudden production demands require quick thinking and practical decisions. A pragmatic professional balances ideal solutions with feasible options — enabling flexible sourcing, tactical substitutions, and effective negotiations while safeguarding ethics and compliance. Pragmatism is not compromise; it is the ability to act decisively and responsibly when facing real-world constraints.

### 7. Perseverance

**Why It Matters:** Success rarely comes on the first attempt. Perseverance ensures resilience in the face of failure, enabling individuals to learn, adapt, and continue progressing toward their goals.

**Real-Life Example:** Dr. A. S. Kiran Kumar and the ISRO team demonstrated extraordinary perseverance during India's Mars Orbiter Mission. Overcoming repeated setbacks, they proved that persistence and teamwork could achieve the impossible.

**Extension to Materials Management:** A Materials Management professional must embody a resilient mindset, particularly during new part development, qualification challenges, cost pressures, yield expectations, or supplier readiness issues. Perseverance enables professionals to stay composed, sustain momentum, and coordinate across stakeholders until solutions are reached. While performance defines targets and pragmatism guides feasible choices, perseverance sustains the effort through delays and setbacks. During shortages, shipment disruptions, or price volatility, perseverance helps transform challenges into opportunities for strengthening collaboration and improving system robustness.

### 8. Problem-Solving

**Why It Matters:** The ability to analyze problems and find innovative solutions is crucial for overcoming

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obstacles and creating value in any profession.

**Real-Life Example:** Rattan Tata transformed obstacles into opportunities through innovative thinking — most notably the Tata Nano, a solution to India's mobility challenge built on empathy and engineering precision.

**Extension to Materials Management:** Effective buyers are not just negotiators — they are problem-solvers. From resolving customs delays to managing supplier insolvencies, their analytical thinking and collaborative coordination prevent disruptions and ensure business continuity. For a Materials Management professional, problem-solving is part of everyday work — addressing supply shortages, lead-time issues, cost expectations, and conflicts between internal and external stakeholders. The professional represents the organization's image at every interface and must exercise judgment, empathy, and balance to maintain trust while achieving results.

### 9. Presentation (Packaging Your Outcome)

**Why It Matters:** Strong presentation skills enhance the impact and perceived value of an idea, product, accomplishment, or outcome.

**Real-Life Example:** Indri Nooyi redefined leadership communication at PepsiCo by aligning performance metrics with purpose and presenting business strategy through compelling storytelling.

**Extension to Materials Management:** A Materials Management professional faces numerous challenges — from supplier constraints to project timelines — yet their achievements often go unnoticed within the organization. The ability to articulate team accomplishments, contributions, challenges, solutions, and results is essential for visibility and credibility.

They must learn to communicate problems, solutions, outcomes, and risks in the context of overall organizational goals. Procurement professionals influence decisions through clarity and communication. Whether through supplier dashboards, cost-reduction proposals, or executive reviews, effective presentation transforms operational data into strategic insights and positions the function as a key enabler of organizational success.

The Materials Management function serves as the fulcrum between internal and external stakeholders. The ability to accurately interpret internal stakeholder needs and effectively communicate them to external partners — and vice versa — is vital. This articulation not only ensures alignment and transparency but also strengthens trust, responsiveness, and long-term partnership success.

### 3. Conclusion

The 9-P Model represents far more than a collection of professional traits — it is a mindset that integrates excellence with ethics and performance with purpose. In the realm of Materials Management, where every decision influences cost, continuity, and credibility, these nine dimensions form the true measure of leadership maturity.

Just as Virat Kohli's cricketing journey demonstrates

how Passion fuels perseverance, Pride anchors self-belief, and Performance focus sustains results, materials professionals too can build their own leadership innings around these virtues. Planning becomes the strategy board that guides direction, Problem-solving becomes the response to adversities, and Pragmatism becomes the calm judgment under pressure. Partnering mirrors team synergy, and Presentation reflects the art of converting outcomes into inspiration.

In a world shaped by volatility, digital acceleration, and sustainability imperatives, the 9-P framework emerges as a new playbook for leadership — reminding every professional, much like Kohli's ethos, that true success lies not merely in winning matches or meeting targets, but in redefining standards with integrity, passion, and perseverance.

When these nine forces operate in harmony, the professional transforms from a process follower into a strategic champion — balancing numbers with nuance and compliance with conscience. The 9-P compass helps procurement and materials managers evolve from buyers to value creators, from controllers to collaborators, and from administrators to influencers of organizational trust.

**Closing Quote:** "Success is not just about talent or luck; it's about discipline, resilience, and the will to keep evolving." — Dr. M. A. Narasimha Murthy

**About the Author :** Dr. M. A. Narasimha Murthy is a distinguished professional and thought leader with over 35 years of experience in Quality Management, Operations Management, Strategic Consulting, Industrial Engineering, and Leadership Development. He currently serves as Senior Director – Quality Management at a leading German multinational, driving major initiatives across global software quality domains.

A Fellow of the Indian Institution of Industrial Engineering (IIIE) and a CII-EXIM Bank National Assessor, Dr. Murthy integrates ancient Indian wisdom with contemporary management through his original leadership frameworks, including the 9-P Model, the 3-T Compass, and the START-UP & CRYSTAL Frameworks. He is a certified Lead Auditor across multiple international standards and an intacs®-certified Principal Assessor in automotive software quality.

Dr. Murthy has served on the Governing Councils of IIIE, BSPIN, and QCPI, and has chaired several national and international conferences. A recipient of the prestigious IIIE Fellowship and the Firodia National Award, he was recently honored by the World Quality Congress as one of the Most Iconic Quality Leaders for his outstanding contributions to the field. He also contributes actively to academia as an Adjunct Faculty, Governing Council Member, and Board of Studies Member at leading engineering institutions.

Guiding Philosophy:

True excellence emerges when intellect aligns with integrity and deep introspection converge

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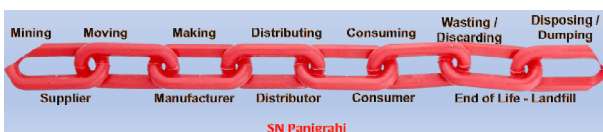
# CIRCULAR SUPPLY CHAINS: BUILDING SUSTAINABLE VALUE AND COMPETITIVE ADVANTAGE

SN Panigrahi, PMP®, ATP I (PMI - USA), FIE, C.Eng; LSS BB  
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Member Board of Studies & Adjunct Faculty SCDL,  
Ex NC & Life Member IIMM, Consultant, Corporate Trainer, Mentor & Author

## Introduction to Circular Supply Chains

**“Transform Today, Sustain Tomorrow - The Circular Revolution Begins with Us”**

The traditional linear supply chain—**Mining ! Moving - Making ! Distributing ! Consuming ! Wasting / Discarding ! Disposing / Dumping** —creates devastating impacts: resource depletion, pollution, and environmental degradation.



**Catalyzing a Regenerative Future.** The pivotal moment for **profound economic transformation** is upon us. In the face of intensifying challenges—including **rapid urbanization, the escalating climate crisis, and diminishing natural resources**, we are called to move beyond conventional linear models and decisively embrace the **Circular Economic Model**.

This model is architected to be fundamentally **Conservative, Restorative** and **Regenerative** by design, establishing a new benchmark for success that honors **People, Planet, and Prosperity** as interdependent and equally vital pillars.

Achieving this ambitious, regenerative future is a shared mission that demands **concerted action and unwavering collaboration** across the entire value chain.

**Success depends on every stakeholder**—from leading organizations and their suppliers to conscious consumers, visionary financial institutions, and proactive governments—**working in seamless concert** to build a global economy that thrives within the ecological limits of our planet.

**Let us seize this moment to design the flourishing world we want to inhabit.**

**Key Words :** Circular Economy, Circular Supply Chain, Value Chain, 10R's of Circular Supply Chain®, Sustainability.

## 3 Fundamental Principles of Circular Supply Chain:

**“Close the Loop, Open Possibilities - Where Waste**

## Becomes Wealth”

As articulated by **S.N. Panigrahi**, the **Circular Economy** is defined as a closed-loop system fundamentally built on the continuous flow of materials through **Conservation, Restoration, and Regeneration**. This design imperative aims to **eliminate waste** while **maximizing resource value** across the entire lifecycle.

**Conservation** reduces resource use and extends product life, while **Restoration** channels materials back into productive cycles with renewed purpose. **Regeneration** then strengthens natural systems and powers operations with renewable sources, creating a future where businesses grow sustainably and the planet thrives.



The Circular Supply Chain **empowers every stakeholder**—suppliers, manufacturers, customers, and service providers—toward optimal resource utilization, waste minimization, and value recovery.

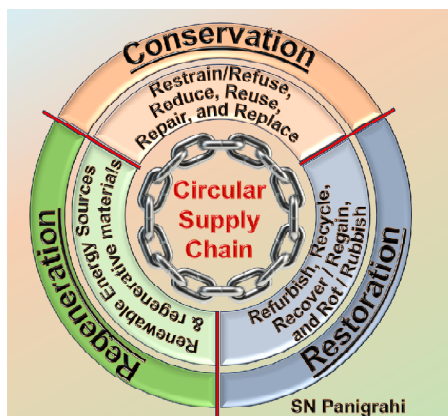
Key strategies include intelligent product design, lifecycle extension, green procurement, waste transformation into inputs, reverse logistics, and comprehensive after-sales service.

**The mission:** Guided by conservation, restoration, and regeneration principles, our mission is to conserve resources by optimizing material use, restore value by managing residuals effectively, and regenerate economic opportunities by transforming waste into valuable new products.

**Designing Circularity: Embedding the 10R's of Supply Chain® into the Core Principles - Conservation,**

## Restoration & Regeneration”

The author **SN Panigrahi**, introduces the **10R's of Circular Supply Chain®** as a powerful, structured blueprint that provides a clear roadmap for building transformative, future-ready supply networks. Each R represents a purposeful step toward more resilient, regenerative, and efficient operations—guiding businesses toward smarter resource cycles, deeper sustainability integration, and enduring value creation. These 10R's are strategically webbed into the **Three foundational Principles of the Circular Economy: 1. Conservation; 2. Restoration; 3. Regeneration.**



The **Conservation principle** focuses on preventing waste at its origin through **Restrained/Refuse, Reduce, Reuse, Repair, and Replace**. Together, these actions minimize resource consumption, extend product lifecycles, and strengthen supply-chain resilience, enabling organizations to protect both profitability and environmental performance.

The **Restoration principle** brings materials back into productive use at their highest possible value. The R's of **Refurbish, Recycle, Recover/Regain, and Rot/Rubbish** help organizations reclaim assets, extract secondary materials, and convert biological waste into useful outputs—reducing reliance on virgin resources and stabilizing long-term supply availability.

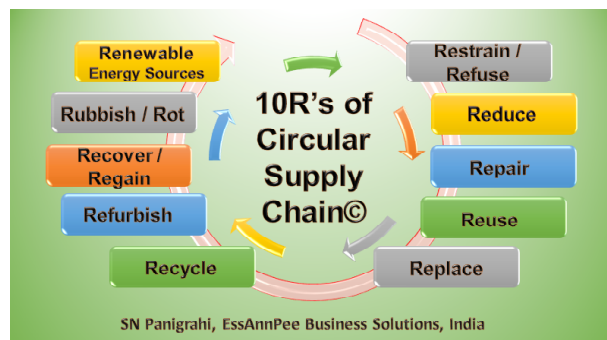
The **Regeneration principle** ensures the system replenishes itself, creating sustained positive impact. By integrating **Renewable Energy Sources** and regenerative materials, businesses reduce emissions, enhance energy security, and rebuild natural capital. When all three principles—Conservation, Restoration, and Regeneration—are harmonized with the 10R framework, organizations unlock a robust circular supply chain that drives competitiveness, innovation, and sustainable growth.

### “Ten Pillars of Change - Building Bridges from Waste to Worth”

The **10R's of Circular Supply Chain®**, authored by **SN Panigrahi**, presents a pioneering and systematic

framework for organizations seeking to transition from linear operations to fully circular, future-ready supply networks. His model distills complex sustainability concepts into ten actionable pathways, enabling businesses to conserve resources, restore material value, and regenerate natural systems with clarity and precision. This influential framework serves as a practical guide for leaders aiming to build resilient, efficient, and sustainable supply chains.

Refer to 10R's of Circular Supply Chain (© S.N. Panigrahi). YouTube: <https://youtu.be/UJsicTRFaJk>



**1. RESTRAIN / REFUSE - “The Power to Say No”.** When we say **NO** to what harms the planet, we say **YES** to a cleaner, safer future. : Harness deliberate self-control to stop harmful actions before they start and curb wasteful behaviors. Government policies restricting harmful materials, NGO awareness campaigns, and individual choices create self-restrained societies. **Say NO**—firmly and consciously—to one-time-use items, unnecessary products, and disposable materials that create waste instead of value. Example: **Say NO** to single-use plastics. India's single-use plastic ban (2022), EU's unified USB-C charger law (2024).

**2. REDUCE - “Don't create waste if you don't have to. - Every Action Creates Impact”** : Minimize consumption and waste generation. Reduce material use through better design, minimal packaging, bulk purchasing, energy-efficient equipment, carpooling, natural lighting, and mindful purchasing. Reduction directly reduces your carbon footprint and resource depletion.

**3. REPAIR - “Fix It, Don't Ditch It”** : Restore functionality and extend lifespan. Repair reduces greenhouse gas emissions from new manufacturing while cutting waste. Examples: computer upgrades, industrial machine restoration, furniture refinishing, appliance repairs.

**4. REUSE - “Give It Another Life”** : Utilize items multiple times. Discover innovative applications: waste heat capture, wastewater reuse in alternative processes, container reuse, design component reuse, and donation programs transforming potential waste into valuable resources.

**5. REPLACE - “Switch to Better Alternatives”** : Substitute with superior environmental alternatives maintaining



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comparable functionality: bamboo toothbrushes, steel water bottles, cloth diapers, reusable bags, compostable materials, and eco-friendly cutlery.

**6. RECYCLE - "From Waste to Wonder" :** Transform waste into usable new products through collection and reprocessing. This eco-friendly method conserves natural resources, reduces pollution, and protects ecosystems. Examples: metal, glass, plastic, and paper recycling; wastewater treatment; energy recovery from industrial processes.

**7. REFURBISH - "Revive, Renew, Rejoice" :** Renovate and restore to excellence—rebuilding original form and structure through comprehensive renovation: painting, repairs, and cleaning to enhance aesthetics and functionality for extended service.

**8. RECOVER - "Nothing is Lost - Every Fragment Holds Value" :** Utilize waste products productively without preprocessing. Examples: waste oil energy recovery reducing fossil fuel dependence; methane gas recovery from decomposing garbage for energy production.

**9. RUBBISH / ROT (COMPOST) - "Return to Earth" :** Final residual management through responsible composting of organic materials—food and garden waste—creating optimal decomposition environments. Proper waste management prevents health hazards and environmental damage.

**10. RENEWABLE ENERGY - "Harness Nature's Power" :** Utilize abundantly available, inexhaustible energy sources: solar, wind, geothermal, hydropower, ocean energy, and bioenergy. Renewable energy dramatically preserves fossil fuels (coal, oil, natural gas) while reducing emissions.

A circular future is built on conscious choices—refusing what harms, reducing what we consume, renewing what we use, and restoring what we waste. When individuals, businesses, and governments unite behind these principles, resource cycles strengthen, communities thrive, and sustainable value multiplies. The shift begins with one decision, but its impact reshapes entire systems for generations.

**Circular Supply Chains - Value Creation Insights: "From Chain to Circle - Creating Value at Every Turn" :** The **Value Chain** encompasses the complete transformation process from raw materials to finished products and beyond—including design, production, marketing, distribution, returns, reverse logistics, and waste-to-wealth conversion.

**Linear supply chains** prove neither cost-effective nor environmentally sustainable, following wasteful paths to disposal. **Circular Value Networks** represent interconnected activities maintaining or increasing social, financial, and environmental value. **"Closing Loops. Creating Value. Powering a Regenerative Future."**

Circular Value Networks transform traditional supply chains into intelligent, regenerative ecosystems where every material, component, and process continuously creates value. They **align the 10R's and the three principles of Circular Economy** to build systems that are efficient, future-ready, and resilient by design.

**Stakeholder collaboration drives success. :** Stakeholder collaboration is the engine that drives circular success. Comprehensive value realization demands collective commitment through strategic alliances among producers, brand owners, distributors, retailers, logistics partners, technology providers, financiers, consumers, regulators, urban local bodies, waste collection agencies, material recovery facilities, recyclers, innovators, and the informal workforce and extended producer responsibility (EPR) partners.

Strategic partnerships with waste authorities—and proactive government facilitation of cross-industry collaboration—unlock true circularity while generating dignified green jobs and inclusive economic growth.

**Value Unlocked: Transformative Gains from Circular Supply Chains and Collaborative Networks: "Reap the Rewards – Where Sustainability, Prosperity & Society Thrive Together"**

Circular supply chains and collaborative value networks unlock powerful economic, environmental, and operational gains by maximizing resource efficiency and enabling continuous value creation across the lifecycle. Through integrated action, shared responsibility, and cross-sector partnerships, organizations achieve lower costs, reduced waste, enhanced resilience, and inclusive growth—propelling a truly regenerative future.

- Ø **Environmental:** Conserves natural resources through extended material use, regenerates ecosystems, prevents depletion, reduces pollution, slows climate change, and secures long-term ecological availability.
- Ø **Economic:** Cuts landfill waste, lowers dependence on virgin materials, reduces energy consumption, drives cost savings, creates new value streams, and strengthens economic resilience through localized or domestic sourcing.
- Ø **Social:** Promotes fair employment, improves worker safety, supports community well-being, encourages responsible consumption, fosters skill development, and contributes to healthier, more inclusive societies.

**Government Initiatives : "Policy Meets Purpose - Governments Leading Change"**

The Ellen MacArthur Foundation estimates circular economy adoption in India will generate **Rs 40 lakh crore (\$624 billion) annually by 2050 while reducing GHG emissions by 44%.**

India's proactive policy frameworks include: Natural Resource Efficiency Policy, Plastic Waste Management Rules, Construction and Demolition Waste Management Rules, Metals Recycling Policy, Extended Producer Responsibility, and E-waste Management Rules 2022.

### **"Rethink to Rebuild: Transforming Supply Chains Through Circular Value Networks"**

Rethinking traditional supply chains into circular value networks unlocks new efficiencies, resilient operations, and continuous material value across the entire lifecycle.

By aligning the 10R framework with strong stakeholder collaboration, organizations accelerate sustainable growth, reduce waste, and drive regenerative impact at scale.

### **"Think Boldly, Act Bravely – Systems Thinking that Sparks Transformation"**

#### **RETHINK. REIMAGINE. REINVENT.**

The circular economy thrives on **systems thinking**—a mindset that sees connections, anticipates impacts, and designs solutions that benefit the whole network. Every decision made today shapes tomorrow's value chains.

- ❖ When we rethink our choices, we confront how human activities—resource overuse, pollution, deforestation, fossil fuel dependence, and poor waste habits—drive climate disruption, soil degradation, water scarcity, and rising health risks.
- ❖ When we act differently, we begin to shift from linear strain to circular strength.

#### **Transform with Purpose:**

- ❖ **Educate teams, suppliers and consumers** to build awareness, enable informed choices, and strengthen responsible consumption.
- ❖ **Engage stakeholders** across the value network to establish aligned, long-term commitment toward circular performance.
- ❖ **Mobilize communities and industry groups** to catalyze collective sustainability action and accelerate systemic change.
- ❖ **Practice the 10R's—from Refuse to Recover**—across every process to embed circularity into design, operations, and end-of-life management.
- ❖ **Empower supply-chain partners** with digital tools that enhance traceability, optimize resource flows, and monitor circular metrics.
- ❖ **Integrate the informal sector** as a formal value partner to improve waste recovery rates, create dignified green jobs, and strengthen recycling ecosystems.

- ❖ **Co-create cross-industry alliances** that convert waste into feedstock, share resources, and unlock new regenerative business opportunities.

**Change begins when thinking expands and actions align.**

#### **Conclusion**

**"Together We Rise - Every Stakeholder, Every Action, Every Day"**

All stakeholders—**industries, service sector, governments, NGOs, civil society, individuals**—are called to engage, practice, and contribute to the **10 R's of Circular Supply Chain®**, realizing benefits while halting natural resource exploitation and ensuring sustainable availability for future generations.

Beyond preservation, you reduce extraction activities and minimize pollution-generating refining. The **10 R's** save energy and resources while reducing greenhouse gas emissions, tackling climate change, preventing environmental degradation, and **saving Mother Earth sustainably**.

**The future we create today is the legacy we leave tomorrow.**

**Choose circular. Choose sustainable. Choose now.**

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# STEEL TO STRUCTURES: PROCUREMENT LESSONS FROM PRESSURE VESSELS TO TRANSMISSION LINES

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## Introduction

**P**rocurement is never one-size-fits-all. Having worked in two very different industries — **heavy engineering (process equipment at Godrej s Boyce)** and **EPC transmission projects (at Bajel Projects, formerly Bajaj Electricals)** — I've seen how the same word "steel" can mean two entirely different procurement realities.

In the **pressure vessel industry**, we bought **raw materials**: boiler quality (BQ) plates, stainless steel, and high-nickel alloys. These were mill-dependent, long-lead items with strict metallurgical requirements. A delay in one batch of plates could derail an entire project.

In **transmission projects**, I now buy **ready-made lattice towers**.

These aren't about metallurgy — they're about fabrication capacity, logistics, galvanizing quality, and, most importantly, the ability to deliver disassembled bundles (with proper

tower-wise bundling) that can be erected smoothly on site.

On paper both are "steel procurement." In practice, they are different games. This article

unpacks the differences, the risks, and the practical tools procurement teams can apply — whether buying plates for a pressure vessel or towers for a Transmission line.

## 1. Different Starting Points: RM vs Finished Goods

• **Process equipment (raw material procurement):** The battle starts with specifications. Grade, standards, chemistry, toughness, thickness, and traceability dominate. Steel is tested to suit PWHT (Post weld heat treatment cycles). Lead times stretch into months, and approved mills are limited.

• **Transmission projects (finished goods procurement):** Here, protos are done drawings and shop sketches are frozen, towers are fabricated, bundled, and sent in bundles to site. The risks shift: galvanizing, fitment, packaging, and **site erection readiness** matter more than chemistry.

**Takeaway:** Raw materials demand **metallurgical assurance**; finished goods demand

**logistics and assembly assurance**. Procurement must adapt its strategy accordingly.

## 2. Supplier Selection: What to Actually Look At

In both industries, "lowest bidder wins" is a trap. Procurement must go beyond price.

### For raw materials in process equipment industry:

- Consistency of MTCs and compliance with codes (ASME CASTM)
- On-time delivery despite mill scheduling pressures.
- Traceability and stamping discipline.
- Relationship strength with mills and stockists.

### For lattice towers in transmission business:

- Fabrication slot booking and adherence.
- Tower bundling and adherence to it.
- Galvanizing bath quality and coating thickness.
- Fitment accuracy - no re-drilling, cutting bending at site.
- Logistics competence for oversized loads to remote sites.

**Practical rule:** In raw materials, bad metallurgy = scrap. In towers, bad bundling = cranes standing idle on site. Both cost a fortune, just in different ways.

## 3. Practical Tools That Work

**A. Quick supplier scorecard** Forget complex formulas. Use a **1–5 rating** against the right criteria for each industry.

### For plates s alloys (RM for process equipment)

- Metallurgical reliability C MTC consistency
- Delivery lead-time C regularity
- Total cost (not just PO cost)
- Financial strength / capacity (V important)

### For lattice towers (finished goods for Transmission line):

- Fabrication capacity C slot adherence
- Logistics C site delivery capability
- Galvanizing C fitment quality
- Tower-wise bundling

### B. Concentration check — three simple questions

1. Is more than 60% of this item sourced from one supplier? (Capacity booking and geographical challenges may lead to this)
2. Do the top two suppliers cover over 80% of spend? (In some cases this is ok but diversification is the key)
3. Would it take longer to qualify a replacement than your disruption tolerance? If yes ! diversify, add safety

stock, or negotiate allocation.

For critical steel grades, always have **two approved mills** or one mill plus an approved multiple stockist.

#### C. Towers: site-erection realities you must control

Since towers are **disassembled** and then erected on site, procurement must secure:

- Match-marked components and bolt sets, packaged span-wise.
- Trial erection (Protos) before bulk production.
- Galvanizing thickness guarantee + touch-up backup plan for site damage.
- Staggered delivery plan (erectable batches in full kit, not full dump).
- Shortage reduction to bare min or rather eliminate it. (Shortages hurt like anything on site)

#### D. Acceptance rules — non-negotiable

- **For RM:** No MTC = no acceptance. Quick PMI checks on arrival.
- **For towers:** Factory acceptance, protos, quality check by third party or your in house QA team before dispatch.

#### E. Pocket checklist

##### Procurement Non-Negotiables (Pressure Vessel RM)

1. **MTC and PMI mandatory** for all raw material batches.
2. **Dual sourcing** for critical steel grades (SA516, SS304/316, Inconel, Monel, duplex, super-duplex, etc.).
3. **Traceability's stamping discipline** — every plate linked to its heat number.
4. **Supplier mill approval** — only buy from technically approved mills/stockists.(EIL approvals)
5. **Lead-time guarantees with LDs** for delayed dispatch.
6. **Signed rolling schedule** and mill production slot before order release.
7. **Right-to-inspect and audit** mill facilities and testing labs.

##### Procurement Non-Negotiables (Transmission Towers)

8. **Tower proto / trial erection** mandatory before bulk production.
9. **Match-marking and packaging discipline** — bolts and tower parts span-wise.
10. **Staggered deliveries** aligned with site readiness and erection sequence.
11. **Galvanizing thickness compliance** with touch-up procedures for site damage.
12. **Lead-time guarantees with LDs** linked to project

milestones.

13. **Right-to-inspect and audit** fabrication, galvanizing, and packing facilities.

#### 4. Contracts s Safeguards

Procurement must write risk controls into contracts, not PowerPoints:

- Lead-time guarantees + LDs tied to project milestones
- Price variation formula for long lead-time steels
- Right-to-inspect and audit (mills + fabricators)
- PBG's (Performance bank guarantees for finished towers.

#### 5. Why This Matters

Both industries share one truth: **procurement mistakes show up quite late, at the site or shop floor, when the cost of fixing them is much higher and the end client LD's hurt us.**

- In pressure vessels, the wrong plate grade or missing MTC leads to rejection or safety risks.
- In transmission projects, missing parts, fitment issues, improper bend issues, poor galvanizing, or late logistics cause crane idle time, erection gang idle times, penalties, and chaos at site.

Procurement isn't just placing POs; it is **risk management with commercial discipline.**

#### Visual: Comparative Procurement Focus

Procurement Focus	Pressure Vessel RM (Plates/Alloys)	Transmission Towers (Finished Goods)
Key Risk	Metallurgy C MTC traceability	Fitment, bundling, logistics
Supplier Type	Limited mills, stockists	Fabricators, galvanizers.
Lead Time	Long (months)	Medium (weeks, high volume)
Acceptance	MTC, PMI, destructive tests	Trial erection (proto), galvanizing checks, sample tests
Procurement Lever	Mill approvals, Contracts	Slot booking, staggered deliveries, contracts, PBG's.

**Conclusion :** Buying "steel" is not the same across industries. In pressure vessel manufacturing, procurement is about **chemistry, codes, and mill relationships**. In transmission projects, it's about **fabrication, proto, bundling and site readiness**.

Treat them with the same playbook and you'll pay in delays, rework, and penalties. Treat them differently — with the right scorecards, concentration checks, acceptance rules, and contracts — and procurement becomes a competitive advantage.

That is the real lesson: **procurement is not clerical; it is strategic risk management.**

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# BUILDING A SPECIALIZATION IN PARCEL & LOGISTICS HIGHLIGHTS IMPORTANCE OF CUSTOMER EXPERIENCE

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**T**oday's consumers and businesses anticipate a seamless, transparent and personalized delivery journey, mirroring the convenience found in other on-demand services. Based on this trend, customer experience is increasingly a topic for discussion due to its strategic importance for any parcel and logistics provider in both B2B and B2C supply chains. Here are five key areas that point out why customer experience truly matters today more than ever.

## 1 Realistic ETA Windows: A New Standard

According to Jen O'Shaughnessy, VP of business development at GLS US, accurate and realistic estimated time of arrival (ETA) windows are fundamental for building trust and reducing customer anxiety. For instance, the proliferation of food delivery apps, such as DoorDash, has set a new standard for real-time tracking and proactive updates, creating a "new norm" for delivery expectations. While only very few carriers provide that true advanced, real-time tracking, according to study conducted by Capgemini, 76% of consumers say an accurate estimated delivery time is a top expectation when choosing a shipping provider.

Moreover, for perishable or high-value shipments, precise ETA windows are even more crucial, with customers preferring a delivery window of 30 minutes to two hours, in order to know exactly when to be home rather than waiting all day. This level of precision requires advanced route optimization, especially with perishable goods like wine delivery.

## 2 Customized Messaging: Enhancing Communication and Reducing Friction

Personalized notifications, delivered via tailored texts or emails, also significantly enhance the delivery experience by keeping customers informed and making interactions more relevant. A significant pain point in customer service is the "where is my order" (WISMO) call, which accounts for 50% of all customer service inquiries according to a 2023 Salesforce State of Service Report. In the current SMS era, enabling customers to not only receive updates but also to respond back is extremely important. Providing customized messaging for customers allows recipient responses to integrate directly into internal systems, enabling proactive problem-solving and ensuring successful first-attempt deliveries. This "white glove approach" makes customers feel informed and valued, assuring them that their package matters. It therefore builds customer loyalty that reflects positively on a carrier's brand.

## 3 Flexible Delivery Options: Empowering Customer Choice

Offering flexible delivery choices, such as scheduled windows, alternative locations or rerouting, empowers customers and significantly increases convenience. One of the most frustrating experiences for a customer is receiving a door tag for a missed delivery multiple times. By allowing customers to text back, they can not only provide additional information but also suggest alternate delivery addresses. This flexibility is crucial for receiving packages on a customer's home doorstep or at a business.

Moreover, the ability to communicate back to the shipper and adjust delivery times according to customer availability, and for the carrier to acknowledge that request, is increasingly vital. O'Shaughnessy notes that 73% of online shoppers say convenience and flexibility are the most important aspects of delivery. So, providing diverse service offerings and allowing customers to choose where and when they want their delivery in real-time is extremely important, from the checkout process onward.

## 4 Account Management: Proactive Support and Strategic Partnerships

In the service industry, disruptions are inevitable, but having dedicated teams to proactively investigate network performance and conduct root cause analyses is essential. This approach allows parcel and logistics providers to shift from reactive problem-solving to proactively identifying and resolving issues before customers are even aware.

The use of business intelligence (BI) and predictive analytics further strengthens this proactive model. These tools help uncover delivery trends and pinpoint improvement opportunities — such as addressing missed deliveries caused by closed businesses or incorrect addresses. Predictive analytics also enhances route optimization and accuracy of estimated delivery windows.

Establishing a dedicated customer service model with assigned representatives introduces a "local hero" approach — offering personalized, high-touch support. This is further reinforced by a tenured sales team acting as consultative advisors, focused on providing actionable insights and fostering long-term customer relationships, rather than simply driving sales.

## 5 Branded Delivery Experience: Reinforcing Identity and



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**Trust** : A branded delivery experience — using a business's own branding elements, such as its logo, colors and messaging, throughout the delivery process, even when those functions are performed by a third party — goes beyond packaging and presentation. It's a powerful tool for reinforcing brand identity and leaving a lasting positive impression. Aligning with partners who share core values enhances brand recognition and solidifies a company's identity.

A focus on mutual corporate environmental, social and sustainability goals not only fosters positive delivery experiences but also strengthens dedication to reputation and service excellence. Both corporate and private customers value these commitments beyond a delivery service alone. For instance a company highlights its commitment to a reduced carbon footprint by lowering emissions through optimized routes and the launch of electric vehicles in states like California.

**Seamless, Branded Delivery with GLS** : Founded in 1999, GLS US has evolved into a key player in North American logistics, focusing on enhancing the customer experience through strategic innovation. As part of GLS Group, GLS US offers seamless parcel delivery between the U.S., Canada and Europe, featuring live tracking, flexible redirection options, and simplified service through a single provider. In a competitive market, GLS

US sets itself apart by combining local expertise with global reach.

According to O'Shaughnessy, GLS US leads the industry in advanced, real-time tracking, which has "completely changed the environment" by significantly reducing customer inquiries about order status. GLS US enhances customer empowerment with features like interactive text messaging for additional shipment details and alternate address updates.

GLS US also prioritizes a branded delivery experience, employing logoed vehicles and uniformed drivers to bolster professionalism and trust. O'Shaughnessy stresses the importance of branded service, emphasizing that it ensures deliveries are recognizable and secure.

Additionally, GLS US employs proactive account management, leveraging business intelligence and AI-driven predictive analytics to preemptively address network issues. Complemented by a dedicated customer service team and experienced sales professionals, GLS US aims to provide consultative support and stay ahead of customer needs.

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



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## REVOLUTIONIZING AEROSPACE MANUFACTURING WITH HIGH-PRECISION TOOLING

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### **The Impact of Increasing Demand for Lightweight Aerospace Components on Advancements in High-Precision Tooling within India's Aerospace Manufacturing Sector**

Kennametal's portfolio spans the full spectrum of aerospace manufacturing needs—from engines and structures to landing gear, composites, and other critical components. As this industry increasingly adopts advanced materials such as CFRP, titanium, aluminum, and hard alloys to reduce aircraft weight and enhance fuel efficiency, the demand for tooling solutions capable of machining these materials with precision and consistency are on the rise.

These advanced materials, while providing several benefits, present certain machining challenges, as they require tight tolerances, superior surface finishes, and high thermal stability. To address these demands, aerospace manufacturers are turning to tooling solutions that deliver not only precision and high metal removal rates but also faster cutting speeds and greater flexibility—all while maintaining excellent tool life.

This is where Kennametal's deep-rooted expertise in materials science and tooling innovation comes into play. For example, our HARVI™ IV Solid Carbide End Mills were specifically engineered for machining titanium—one of the toughest materials in aerospace. This tool delivers exceptional productivity, consistently removing up to twenty cubic inches of titanium per minute, with a tool life exceeding one hour.

Similarly, products such as the KSEM™ modular drills and 7792VX high-feed milling cutters enable efficient material removal while maintaining tight tolerances, crucial for structural components like ribs, panels, and landing gear.

Over the years, Kennametal has developed a comprehensive portfolio of advanced tooling solutions that empower the aerospace industry to innovate and build better every day.

**Tooling Innovations Tackling Thermal Expansion, Tool Wear, and Vibration to Achieve Micron-Level Precision in Aerospace Manufacturing in India**

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Aerospace machining demands innovative solutions that can withstand extreme conditions while delivering precision and durability.

Superhard materials such as Cubic Boron Nitride (CBN) and Polycrystalline Diamond (PCD) offer excellent wear resistance and maintain sharp cutting edges at high temperatures. Kennametal's PCD-tipped tools and KCU series CBN inserts are designed specifically for high-performance aerospace machining. Coatings such as TiAlN and AlTiN enhance tool life by improving thermal stability and reducing friction. Kennametal's Beyond™ Evolution™ AlTiN-coated inserts are a strong example of this innovation in action.

Tool geometry also plays a critical role. Features like lower approach angles, variable helix angles, and larger core diameters help reduce cutting forces and vibration. Kennametal's HARVI Ultra 8X Solid Carbide End Mills exemplify this, offering stability and performance in titanium and nickel-based alloys. Tools with internal coolant channels—like the KenTIP™ FS modular drill system—enable efficient chip evacuation and cooling, essential for dimensional consistency.

### **Integrating Automation and AI-Driven Machining to Enhance High-Precision Tooling Efficiency in Aerospace Manufacturing**

The aerospace industry has been witnessing a rapid adoption of digital engineering, IoT and AI. Intelligent systems are being integrated throughout the aircraft lifecycle by OEMs and tier suppliers to cope with ever increasing component manufacturing complexities. One of the key areas where we're seeing transformative impact is digital twin technology. By creating virtual models of aerospace components, machining environments and processes, we can simulate performance, optimize tool paths and predict tool wear before production even begins. This reduces trial-and-error on the shop floor, minimizes downtime and improves first-pass yields—especially critical in high-stakes sectors like aerospace and automotive.

Our IoT-enabled tooling solutions provide real-time data on parameters like temperature, vibration and cutting forces, allowing for predictive maintenance and smarter decision-making. For example, we helped an aerospace manufacturer improve productivity by 50% and achieve significant cost savings while machining Inconel.

### **Leveraging High-Precision Tooling to Meet International Certification Requirements in Indian Aerospace Manufacturing**

To meet stringent global aerospace standards like AS9100 and NADCAP, Indian manufacturers are turning

to high-precision tooling solutions that ensure dimensional accuracy, surface integrity, and process repeatability. Given the complexity of working with materials such as CFRP, titanium, aluminum, and hard alloys, it can be challenging to maintain consistency across high-tolerance applications using conventional tooling.

To address this, manufacturers are increasingly adopting advanced tooling systems from global leaders like Kennametal. Solutions such as HARVI Ultra 8X and KOR6™ DT end mills, Beyond Evolution AlTiN-coated inserts, GOdrill™ solid carbide drills, KCU series CBN inserts, PCD-tipped tools, and KenTIP™ FS modular drilling system offer high metal removal rates, thermal resistance, and repeatable performance—critical for qualifying under international certification protocols. These tools are engineered to handle difficult-to-machine alloys while minimizing tool wear and maintaining part integrity.

Additionally, digital platforms like Kennametal's ToolBOSS™ enhance traceability, inventory control, and compliance by offering detailed usage reports and tool lifecycle visibility. This supports not only productivity but also the documentation and process control required for audits and certifications.

### **Emerging Technologies and Process Innovations Set to Redefine High-Precision Tooling for Aerospace Manufacturing in the Next Five Years**

Aerospace manufacturing is continuously evolving—both in the materials used and the processes followed—to meet the growing demand for lighter aircraft, efficient fuel consumption and reduced emissions. In the next five years, high-precision tooling for aerospace manufacturing will be transformed by technologies like IoT-enabled CNC machines, advanced tooling solutions and sustainability.

The integration of IoT-enabled, multi-tasking machines is revolutionizing factory operations enabling OEMs to build factories of the future. Augmented and Virtual Reality are also being adopted for remote machine commissioning, and troubleshooting.

In the coming years, the need for innovative tooling solutions will be paramount to keep pace with the demands of machining advanced aerospace materials, as mentioned earlier. Simultaneously, the industry is increasingly focused on sustainability, with efforts to reduce emissions, noise, and material waste for managing a green product lifecycle.

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

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# 'COLLABORATION, NOT ISOLATION': INDIA'S PATH TO BECOMING A GLOBAL ENERGY STORAGE SUPPLY HUB

SHREEYASHI OJHA

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**P**artnerships will determine whether India can emerge as a global hub for battery manufacturing and energy storage.

This was a key takeaway from a discussion between industry leaders and policymakers at the Energy Storage Summit India 2025, held in Greater Noida by our publisher, Solar Media. During the panel discussion titled 'How India Can Be the Next Global Supplier Hub?', moderated by Shubhra Thakur, country director – India, Long Duration Energy Storage Council (LDES Council), panelists underscored that India's ambitions to become a manufacturing powerhouse depend on ecosystem development, technology partnerships, and policy coherence across ministries.

Thakur said that India's growing energy demand and the corresponding need for large-scale storage infrastructure. Citing projections from the National Electricity Plan, she said India's energy storage requirement could reach 400GWh by 2032 – a figure that dwarfs the country's current domestic cell production capacity of just 2GWh.

"Globally, around 500GWh of annual battery manufacturing capacity exists today, but much of it is concentrated in a single region," she said. "As supply chains diversify and countries seek to de-risk from regional dependencies, India stands at a pivotal moment – we must decide whether to remain a large energy market or become a global supplier where the entire value chain thrives."

## Collaboration over isolation

Manu Srivastava, additional chief secretary, Government of Madhya Pradesh, urged policymakers and industry stakeholders to move away from protectionism and towards global collaboration.

"Over the past few years, we seem to have developed a tendency to identify certain 'villains' in the global economy – to see the world as a film with clear heroes and antagonists," he said. "But earlier, we believed in the world as a global village, where efficiency and collaboration determined progress. Returning to that mindset would be far more effective."

He argued that creating barriers to technology, trade, or knowledge transfer is counterproductive to India's ambitions.

"If our goal is to lower costs domestically and become a robust supply hub, we cannot afford isolation. We must work with global partners, learn from established ecosystems, and leverage their strengths to accelerate our own growth," he added.

"When something is looked after by more than one department, it often ends up being looked after by none," he noted, referring to the fragmented oversight of

renewable manufacturing across ministries. "However, coordination is improving, and several states are taking proactive steps."

Srivastava highlighted the Mohasa-Babai industrial area in Madhya Pradesh's Shajapur district, developed to promote renewable manufacturing. The zone offers incentives, including capital subsidies, R&D grants, and training programmes, to attract investors in clean energy and battery production.

## Bridging the manufacturing gap

Vikas Jaiswal, project manager for renewable energy and battery storage at Indian independent power producer (IPP) Prozeal Energy, said that while India has made strides in supporting technologies like battery management systems (BMS) and liquid cooling systems, the country still depends heavily on imported battery cells – which account for nearly 80% of total battery system costs.

"At present, we mainly assemble imported cells into packs and integrate them into storage systems," Jaiswal said. "To move forward, we need to build an integrated ecosystem — from raw material processing and cell manufacturing to recycling."

He added that India currently lacks the expertise in critical processes such as lithium purification and remains reliant on international suppliers.

"Partnerships with global companies that already have advanced ecosystems and automation experience are essential," he said. "We also need strong domestic R&D, robust testing and validation facilities, and skilled engineers who can drive innovation at home."

Jaiswal credited the government's Advanced Cell Chemistry Production Linked Incentive (PLI) scheme as a strong starting point but said deeper collaboration between public and private sectors would be vital to scale manufacturing and achieve cost competitiveness.

## Building a resilient ecosystem

Closing the discussion, Thakur noted that India's policy foundation – through initiatives such as Make in India and the PLI programme – is well established. However, she said the next phase must focus on execution and ecosystem integration.

"The way forward is not isolation but collaboration – across technologies, industries, and governments," Srivastava said. "Only through coordinated action and innovation can India evolve from a major energy market into a reliable global supplier hub for the clean energy era."

Source: [www.energy-storage.news](http://www.energy-storage.news)

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# LOGISTIC SERVICE PROVIDERS 3PL VS 4PL VS 5PL IN SUPPLY CHAIN

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Organisations want to succeed, grow, in the long run, to manage the logistic service provider network is likely to mitigate the problems of risk in transportation, as this becomes essential for Logistic service providers are a part of the essential services, as they provide various supply chain management solution, that is likely to simplify the warehouse operations, order processing, also better transportation in supply chain.

Logistic Service providers are mainly an organisation of repute, which focus on delivery on supply chain management, simply assisting warehouse operations, order process, with better transportation, on a dependable factor for development of corporate growth.

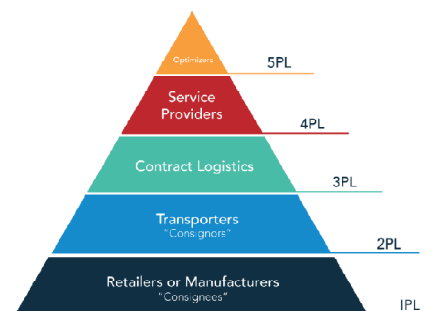
As Logistic Service Providers helps to organise to optimize the development, expeditiously, planning, on a potential growth, with the risk of outsourcing logistic may require frequency, as an essential process for the growth of the curve in an profitable organisation, with a suitable Logistic Service Providers in supply chain.

Network of Logistic providers for the organisation is responsible for carrying the goods, materials, products, distribution, delivery, shipping operations on the products, either on-line, to be stored, since arise of the E-commerce, has made a significant contribution on the different available logistic providers, Single logistic provider, Second logistic provider, Third logistic provider, Fourth Logistic provider, also the Fifth Logistic provider adopting the unique system of distribution, shipping delivery on a technology aspirant basis in supply chain

Organisations requirement of a logistic service providers, which is different from a Single logistic service provider (1PL), can go up to Six Logistic provider services, in order to settle the most utilised services, which can be categorised as Second Party Logistic Providers, Third Party Logistic Providers, Fourth Party Logistic Providers, Fifth Logistic Providers, as services providers to hire third party, fourth party, logistic in which an organisation can offload the logistic activities to single outsourcing supplier in supply chain.

On a single logistic providers (1PL) does agree to transport, convey the products owned by them, on their own vehicles, that transports their products, with their own employee, pick-up raw materials, as this is time consuming, cost-effective, as Single Service provider specialises on geographic area, also specialises in certain types of goods, shipping.

While in a Second Service Logistic provider (2PL) entails using a different transportation system, hires a transporter to pick-up, also takes the assistance of another transport for delivery of the finished goods, as the supply chain brings in better sales, on outsourcing, logistic operations, as referred as a sub-contractor for the organisation transporting the goods, or to move the materials, products, based on the equity, that they are liable to use their own transportation, as the delivery may not have a better control, arose during the course of globalisation, with a development of trend in lean management, when organisation began to outsource logistic activities in order to focus on their own organisation in supply chain.



Second Service Logistic providers works on call, while Third party logistics works on the future load envisaged, this is usually on a short term contract in supply chain.

In a Third party logistic providers (3PL) providers distribution of the products, managing multiple transporters, in a warehouse, storage, inventory management, packaging, consolidating shipping, freight forwarding, does depend upon the focus of transporting many products, also in accompanying various management aspects, services, on which majority of the accomplishment on packing, custom clearance, service at cross-road terminals, cross-docking, supplier management, tracking, tracing using the best management services, mapping, on the distribution of the various products, goods, also dealing with disruption, risk, road-block that is likely to arise on the domestic, global on the variety of solutions that is likely to arise in supply chain.

As an operational model in supply chain, Fourth Party Logistic provider, in which the entire outsourcing of business in supply chain, is to be extended to an external service provider, unlike Third Party Logistic, which oversees a part of the supply chain, operations on the



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business as a Fourth Party Logistic provider (4PL) is considered as a single point of contact in a supply chain management, as the provider has a broader scope of responsibilities that includes managing the resources, technology, digitalisation, with the support of software on the transaction also on the infrastructure, providing strategic insights to management in supply chain.

Key components on the part of the Fourth Party Logistic service providers does not operate with their own transportation, as they contact with other Logistic Service providers, with the integration, controlling, outsourcing, operation, providing information resources, as providing Fourth Logistic providers with a support in an organisation work closely on the facilities, of storage, on warehouse transaction, procurement, packing, tracking, tracing, shipping the products from the manufacturer, to the right customers pertaining to supply chain. On the other hand Fourth Party Logistic providers, is to make the organisation, conceive into a complete supply chain network, distribution, delivery, personally optimize customer service, effectively communicate, with the co-ordination of the Third Party Logistic providers, also encourage on the advantages of the Third Party Logistic providers, on giving preference on the specific approval on the conditions of invoicing, logistic approach on the workflow, with the help of Fourth Party Logistic providers, on any disruption, risk, without any approach or preference in supply chain. Fourth party logistic providers role demands on intense involvement from the service oriented, suppliers, clients, business activities in supply chain.

On the concept of Fifth Logistic Service Provider (5PL) the reference is to as the logistic aggregator, also focus on the leverage of creating efficiency, as they are likely to pool the products, materials, on the request of Third Party Logistic service providers, also of the other smaller units, in order to negotiate the price lower, than compared with other Logistic Service Providers, on network, mainly giving preference to E-Commerce operations, managing 3PL, 4PL, providing the best technology, adopting better methods, artificial intelligence, innovation on space requirements, with high technology content as a Logistic Service Provider in supply chain.

Planning, procurement, co-ordination sourcing of materials in production, involves the use of Logistic service providers, as Single Logistic service Providers agrees to move the goods all by himself, as the services are owned by the organisation, while the Second Logistic service provider gets the assistance of outsider to co-ordinate transportation, activities like pick-up, from different sections, on the other hand Third Logistic service providers, co-ordinates, manages multiple transportation, consolidates, freight forwarding, the concept of the Fourth Logistic service provider in the part of planning is to outsource the entire mapping system, to extent of outsourcing the entire activities of sourcing materials, while the Fifth Logistic service provider is to use the latest technology, adapt better

methods as logistic service provider in supply chain.

Distribution, Product management, involves handling procured, sourced materials, also the supply, storage at the location where the warehouse or stores are located, in the case the First Logistic service provider initially takes up the direct distribution on their transportation, also collection of materials, while the Second Logistic service provider gets the services of another transporter for distribution, by an outsider, also coordinates the distribution, taking care of the product brand, while the Third logistic service provider does coordinates transportation, collection, custom clearance, as being a Fourth Logistic service provider, is to outsource the distribution, on with efficient, reliable transport, so as to help in to protect the brand image, as being the Fifth Logistic service provider the use of the technology, like the artificial intelligence, ChatGPT in order to keep in abreast of the latest technology in supply chain.

Sales management is necessarily a combined effort with proper distribution, of sales, also to ensure that products are delivered to customer using First Service logistic providers, as the transport are of their own, monitoring of customer, stages of delivery network, from warehouse distribution can be obtained, being a Second Logistic service provider sales can be finalised by using a different transport, coordination of delivery can be envisaged, but on the Third logistic service providers, collection of items to be delivered to the customer, on the available inventory, while the Fourth Logistic service provider does to outsource the products that sold, using the best transportation, so as to reach the customers or the consumer, on the behest of the Fifth service logistic providers, uses the best technology for selling the brand on a digital marketing application in supply chain.

Reverse logistic is generally transporting of the products from the end-user, helping in the process, managing returns, refund, unwanted, damaged, unusable, products as this is a part of the logistic operation of reverse logistics, sent back to wholesalers, retailers, distributors, warehouse, in this instance Single logistic service providers takes the opportunity to take back the product at their own risk, while the Second Logistic Service provider employs a secondary logistic provider for collection of the product, so that it is delivered back to the retailer, warehouse, wholesalers, distributors, in the case of Third Logistic service provider provides to transport the goods, product on collecting from the end-user, transports the same to the warehouse, distributors, while the Fourth logistic service provider provides a provision to transport the goods, returned for re-work, refurbishing, having to attempt to make use of the best available transportation of product back to warehouse, wholesalers, retailers, taking care of Fifth Logistic service providers uses the provision technology, like artificial intelligence, ChatGPT methods, in order to bring to the conclusion that the goods are returned to the distributor in supply chain.

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# DIGITAL TRANSFORMATION FOR SUSTAINABLE AND RESILIENT SUPPLY CHAINS IN INDIA

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**Abstract:** Digital transformation has become the cornerstone of modern supply chain management, enabling efficiency, sustainability, and resilience in a rapidly changing business environment. In India, the convergence of technologies such as Internet of Things (IoT), Blockchain, Artificial Intelligence (AI), Cloud Computing, and Digital Twins is reshaping industries from manufacturing to logistics, retail, healthcare, and agriculture. This article highlights how digital tools are helping Indian supply chains reduce costs, minimize disruptions, and align with national priorities like sustainability, Atmanirbhar Bharat, and Net Zero 2070. It explores sector specific case studies, identifies key challenges, and outlines future pathways for building robust and environmentally responsible supply chain in India.

**Keywords:** Digital Transformation, Supply Chain Resilience, Sustainability, India, IoT, Blockchain, AI, Cloud, Industry 4.0.

**Introduction :** The global supply chain landscape has witnessed unprecedented disruptions over the last decade, from the COVID-19 pandemic to geopolitical uncertainties and climate-related risks. For India, these shocks underscored the importance of building supply chains that are not only efficient but also sustainable and resilient.

Digital transformation is central to this journey. Technologies such as IoT, Blockchain, AI, Cloud, 5G, and Digital Twins are being deployed across Indian Industries to enhance transparency, reduce wastage, ensure regulatory compliance, and prepare for unforeseen disruptions. Government initiatives like Digital India, the National Logistics Policy (2022), and the Unified Logistics Interface Platform (ULIP) have accelerated this momentum, enabling both large corporations and MSMEs to embrace Industry 4.0

The Indian context is unique: while advanced manufacturing hubs and large enterprises are rapidly digitizing, MSMEs and rural supply chain face infrastructural and financial barriers. Hence, the digital transformation journey must be inclusive, scalable, and aligned with India's socio-economic and environmental priorities.

## Digital Transformation and Sustainability in Indian Supply Chains

### 1. Enhancing Efficiency and Green Operations

- IoT-enabled monitoring in logistics reduces fuel consumption and emissions. For example, the Serum Institute of India used IoT sensors to monitor vaccine cold chains, cutting wastage during COVID-19 distribution.
  - 3D printing reduces material wastage by enabling decentralized just-in-time production. GE Aviation India has saved up to 60% of raw material in aerospace component manufacturing through additive technologies.
  - Blockchain in agriculture ensures ethical sourcing and reduces spoilage. Ninjacart, for instance, uses Blockchain and IoT to reduce post-harvest losses by 25%.
2. Circular Economy and Waste Reduction Digital tools are enabling the transition towards a circular supply chain:
- Reverse logistics systems, powered by AI and Cloud platforms, facilitate product returns and recycling in e-commerce.
  - Blockchain improves traceability of sustainable raw materials, ensuring compliance with environmental standards.
3. Supporting India's Net Zero 2070 Target

Digital twins and AI-driven energy optimization are being adopted by Tata Power and other utilities to reduce carbon footprints. These technologies allow for smarter grid management and integration of renewable energy.

**Table 1: Digital Technologies in Indian Supply Chains – Applications and Benefits**

Technology Cluster	Key Indian Application	Sustainability Benefit	Resilience Benefit	Reference Case
IoT + Blockchain	Serum Institute vaccine cold chain	Reduced wastage	Real-time visibility	MoHFW, 2021
AI + Big Data	Delhivery route optimization	Lower fuel use	Faster response to disruptions	Delhivery, 2022
Cloud + ULIP	Unified Logistics Interface Platform	Efficient multimodal transport	Scalability across MSMEs	NLP, 2022
3D Printing	GE Aviation aerospace parts	60% material savings	Localized production	GE Additive, 2021
Digital Twins	Tata Power energy grid	Smarter energy use	Predictive maintenance	Tata Power, 2023

## Digital Transformation and Resilience in Indian Supply Chains

### 1. Building Shock-Resistant Systems

The COVID-19 pandemic highlighted the vulnerability of global supply chains. In India, digital tools helped businesses withstand these shocks:

- Digital twins in pharmaceutical cold chains reduced risks of vaccine spoilage.
- AI-driven predictive analytics enabled logistics companies like Delhivery to optimize routes across 17000+ pin codes, even in disrupted environments.

### 2. Reducing Dependency and Improving Self-Reliance

Platforms like the Open Network for Digital Commerce (ONDC) empower small retailers by integrating them into digital supply chains, reducing reliance on multinational platforms and boosting resilience of domestic trade networks.

### 3. Risk Management and Compliance

Blockchain and RPA are increasingly used in pharmaceutical and healthcare supply chains to ensure regulatory compliance, enhance traceability, and reduce counterfeit risks.

## Sectoral Insights from India

### 1. Manufacturing

- Adoption of IoT and Cloud has enabled predictive maintenance and smart factories.
- Bosch India reported an 18% reduction in downtime through IoT-enabled production systems.

### 2. Retail and E-Commerce

- ONDC democratizes e-commerce by connecting MSMEs and local kirana stores to digital platforms.
- RPA and AI-driven demand forecasting are streamlining order fulfillment.

### 3. Agriculture

- Blockchain and IoT improve traceability and reduce wastage in perishable supply chains.
- Digital platforms connect farmers directly with markets, improving incomes and reducing middlemen inefficiencies.

### 4. Healthcare and Pharmaceuticals

- IoT-based cold chain monitoring systems have transformed vaccine distribution.
- Blockchain ensures secure tracking of critical drugs and medical supplies.

### 5. Logistics and Transportation

- AI, 5G, and Edge Computing enable real-time fleet tracking and dynamic route optimization.

- ULIP, a government-backed platform, integrates data across multiple ministries, enhancing multimodal logistics visibility.

### 6. Energy and Utilities

- IoT and Blockchain support peer-to-peer renewable energy trading pilots.
- Digital twins enable predictive maintenance for critical energy infrastructure.

## Challenges and Barriers in India

Despite progress, challenges remain:

1. Infrastructure Gaps – Limited high-speed internet and uneven 5G rollout restrict adoption in rural and semi-urban areas.
2. Financial Constraints – High costs of Digital twins, IoT sensors, and advanced analytics deter MSMEs.
3. Skill Gaps – India faces a shortage of over 200,000 AI/ML professionals, slowing adoption.
4. Cybersecurity Risks – With more data moving to cloud platforms, cyber threats pose significant risks.
5. Policy and Regulation – Fragmentation between multiple government initiatives sometimes creates compliance complexity.

**Table 2: Challenges and Enablers of Digital Transformation in India**

Barrier	Impact	Suggested Enabler
Infrastructure gaps (5G, internet)	Limits IoT & cloud adoption in rural areas	Govt. investment in BharatNet, 5G rollout
High upfront costs	MSMEs struggle to adopt	Subsidies, modular low-cost solutions
Skills shortage	Slows AI/Blockchain uptake	Training under Digital India, PPP skilling programs
Cybersecurity risks	Threat to data integrity	Stronger regulations + cybersecurity frameworks
Policy fragmentation	Confusion across multiple schemes	Harmonized national digital supply chain policy

## Future Pathways for India

### 1. Inclusive Digital Transformation

- Develop low-cost, modular solutions tailored to MSMEs.
- Encourage public-private partnerships for pilot projects in rural supply chains.

### 2. Skill Development and Reskilling

- Expand digital literacy and workforce training in AI, Blockchain, and supply chain analytics.

3. Green and Circular Supply Chains
  - Promote digital platforms for reverse logistics, recycling, and carbon tracking.
  - Align digital adoption with India's Net Zero commitments.
4. Harmonized Policies
  - Integrate initiatives like ULIP, NLP, and ONDC under a unified national supply chain strategy.

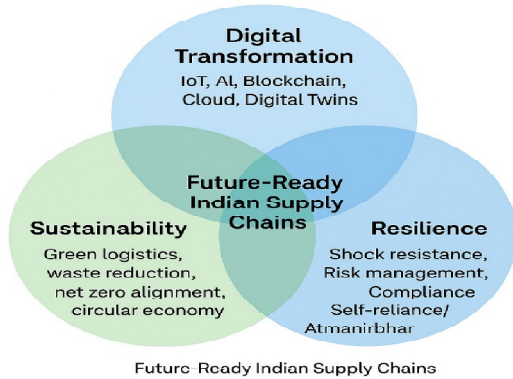


Figure 1: Framework of Digital Transformation for Sustainable and Resilient Supply Chains in India

## Conclusion

Digital transformation is no longer optional for Indian supply chains – it is essential for achieving efficiency, sustainability, and resilience. From smart manufacturing and green logistics to Blockchain-enabled agriculture and digitalized cold chains, India's industries are witnessing a technological revolution.

However, to fully realize these benefits, India must address infrastructural gaps, financial constraints, and skill shortages while ensuring inclusivity for MSMEs and rural stakeholders. With the right mix of innovation, policy support, and capacity building, digital transformation can make Indian supply chains globally competitive, environmentally sustainable, and resilient against future disruptions.

As India moves towards becoming a \$5 trillion economy and achieving its climate goals, digitally empowered supply chains will serve as the backbone of this transformation.



# INDIA AND THE UK INK A HISTORIC FREE TRADE AGREEMENT

SHARADA PRAHLADRAO

After over three years of negotiations, India and the United Kingdom have formally agreed to a Free Trade Agreement (FTA), marking a major milestone in their bilateral relations. Commerce Minister Piyush Goyal called the deal a new benchmark for "equitable and ambitious trade between two large economies." Although the full text of the Agreement has not been released, the Indian industry has welcomed the development, even as concerns remain over potential impacts on agriculture and MSMEs. The deal is expected to be signed in three months and will take over a year to implement.

Amid rising protectionism and geopolitical tensions, the UK-India Free Trade Agreement (FTA) emerges as a strategic accord. It represents a significant milestone in Britain's Indo-Pacific "tilt," providing UK firms with a safeguard against over-reliance on any single region or country-centric supply chains, thereby ensuring trade continuity in the face of potential US tariff impositions.

## Trade Landscape and Economic Impact

Currently, the UK is India's 16th largest trading partner, while India ranks 11th for the UK. Bilateral trade stands at approximately \$60 billion, with India maintaining a positive trade balance. The Indian government estimates this could double by 2030. According to the British government, the FTA could add \$34 billion to this trade volume.

### India currently makes up a small share of UK trade

Percentage of total value of goods exports and imports, 2024



Source: Office for National Statistics • Includes the top five trading partners plus India



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This Agreement is the most economically significant trade pact signed by the UK since Brexit, following similar deals with Australia and Japan. Although the EU remains the largest trading partner for both countries, the India–UK deal symbolizes a strategic reorientation and a step toward more diversified trade relationships. From India's perspective, the trade deal complements its ambition to become a preferred manufacturing destination, encouraging businesses to diversify their investments. Indian industries anticipate further free trade agreements (FTAs) as these trade pacts are essential for integrating into the global value chain, according to the President of the Confederation of Indian Industry (CII).

### Highlights of the India-UK Free Trade Agreement

- 99 percent of Indian exports to benefit from zero duty in the UK market.
- Indian import duty will be slashed, locking in reductions on 90 percent of tariff lines, 85 percent of these becoming fully tariff-free within a decade.
- India is reducing tariffs for: whisky, medical devices, advanced machinery, and lamb, making UK exports more competitive.
- Goods with reduced import duties for Indian consumers: cosmetics, aerospace, lamb, medical devices, salmon, electrical machinery, soft drinks, chocolate, and biscuits.
- Products with cheaper prices for British shoppers: clothes, footwear, and food products, including frozen prawns.
- Automotive tariffs will go from over 100 percent to 10 percent under a quota.
- Three-year exemption from social security payments for Indian employees working in the UK.
- Export opportunities for labor-intensive sectors such as textiles, marine products, leather, footwear, sports goods and toys, gems and jewellery, engineering goods, auto parts and engines, and organic chemicals.

### Significance of the Agreement

The Agreement goes beyond trade. It reflects a broader geopolitical shift as both countries navigate a changing global order. For the UK, which has struggled to define its post-Brexit trade strategy, this deal is a move toward engaging with high-growth economies. It represents an opportunity for India to assert its position as a global economic power, aligned with its “Viksit Bharat” 2047 vision of becoming a developed nation.

In a joint statement, the Prime Ministers of both countries said the FTA and accompanying social security arrangement would catalyze trade, investment, innovation, and job creation. They emphasized that the Agreement would foster deeper people-to-people ties and pave the way for a stronger strategic partnership.

Negotiations faced delays over complex issues, including visa liberalization demands from India and social security contributions. While the final deal does not alter UK immigration policies, it does include the three-year social security exemption for Indian workers. The British government noted that while there are no immediate immigration changes, the FTA will simplify temporary skilled worker mobility.

### Looking Ahead

While the UK may not currently be among India's top five trading partners, this FTA sets a strong precedent. It could encourage further bilateral deals with major economies like the United States and the European Union. This Agreement is a strategic declaration, signalling a shift in how trade, power, and diplomacy intersect in this century. It indicates India's evolving role in shaping a more inclusive global trade architecture and reaffirms its position as a key player in the post-pandemic, multipolar economic landscape.

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

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# SUPPLY CHAIN SECURITY FUNDAMENTAL TO MAKE IN INDIA 2.0

**PARMOD SAGAR, CHAIRMAN & CEO  
RHI MAGNESITA INDIA LTD.**

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Since its inception, the Make in India programme has been pivotal in elevating India in the global manufacturing landscape. Presently the Make in India 2.0 initiative spans as many as 27 parts of the economy and it is clear that there have been significant accomplishments more vigorous than before, further consolidating India's role in the global manufacturing ecosystem. The initiative has also supported in receiving \$ 81.04 billion FDI during FY 2024-25 and is clearly indicative of India's attractiveness despite global risk, disruption and decay in the global economy.

From 2014, till date, the world economy continues to evolve. It has become more and more evident in recent years, that the next phase of success of Make-in-India directly depends on trust and resilience of India's supply chains.

From past to recent disruptions, everything from pandemic-related lockdowns to changing geopolitical tensions and trade wars have highlighted the vulnerable nature of global supply chains. For India, the ability to import raw materials, components, and technology without interruption is not just a manufacturing technicality, it is an economic imperative. The importance of manufacturing to the Indian economy can be seen in its contribution of approximately 12–13% to India's GDP, which is significant in itself, but also holds potential for more domestic value addition.

In other words, shaping trade strategies to adapt to changing global trade policies require Indian manufacturers to exhibit more flexibility and adaptability. Tariffs and regulatory changes can disrupt competitiveness in an instant. Adaptability in sourcing is now a critical strategy for additional productivity, while avoiding the drawback of potential excess inventories or production delays.

International commerce is supported by global supply chain infrastructure, quietly supporting us to reliably move goods between continents, even when disruptions occur. Flagship transformations such as the proposed \$20 billion India-Middle East-Europe Corridor (IMEC), the transformational, multi-pronged network that brings Europe and Asia together through West Asia, will provide new trade routes and strengthen links to manufacturing and key global markets. Advanced technologies, such as AI and digital integration, are transforming logistics in all modes, improving tracking and visibility, and reducing risk within supply chains across geographies. Governments globally are encouraging these transformational business models by continuing to implement policies that embrace sustainability, promote a culture of data, reduce costs while shortening

the timeline for new multimodal transport assets, and build out resilient, multimodal transport systems that support new economic development opportunities. Collectively, integrated, technology-driven infrastructures will continue to enable capacity for global supply chains to grow, evolve, and adapt to political or climate disruptions, all while continuing to create economic centrepieces for new areas of growth, benefiting from enhanced efficiencies and reduced logistics costs.

Global manufacturers are feeling greater pressure to reduce their dependence on manufacturing in concentrated geographies. India's improved manufacturing capabilities, talented workforce, and developing infrastructure are driving its attractiveness and viability as an alternative sourcing location. India's overall political and economic stability offers additional reassurance to global supply chain planners who now recognise India as a vital and viable component of their risk management strategies and a long-term growth engine.

Recent disruption in the supply of rare earth minerals presented a major challenge for India's auto industry, as the industry has seen shortages of rare earth magnets, is an example of this.

The Indian government has initiated the National Critical Mineral Mission to accelerate domestic exploration and discovery of critical minerals, to strengthen local capacity and increase the long-term resilience of the industry. As a result, the National Critical Minerals Mission will lead the resilience of critical mineral resources' value chain with a budget of Rs.34,300 crore over the span of 7 years.

The impact of the PLI scheme has been transformational for India's industrial base. PLI scheme beneficiaries have increased capabilities for local production and have indicated by local production of components, , increasing security of supply chains, shortening lead times and increasing quality control. The renewed direction of sourcing domestic materials for key inputs is supporting India's manufacturing climate to adapt more quickly to changing international government regulations and respond to global and regional supply shocks. Overall, the scheme is adding to production capacity, adding auxiliary job creation and therefore working on the economy.

Going forward, for the infrastructure sector, the security of India's supply chain for magnesite, a critical raw material used in the production of refractories for the steel, cement, and glass industries, should be viewed as

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a strategic priority for the Make in India initiative and for the country's infrastructure development objectives. There are calls for policy reform to diversify sourcing of magnesite and reduce reliance on single source for imports on critical raw materials for refractories.

The importance of investing in diversification of magnesite supply chain is strongly linked to India's current infrastructure development programs and the increase in demand for refractories made from magnesite. By securing a steady supply chain for magnesite, the steel and cement sectors will be able sustain production that supports infrastructure projects. Implementing circular economy principles such as recycling refractories, will help secure supply and reduce the challenges faced with raw material

shortages and environmental impacts. These initiatives will advance the Make in India vision while developing a sustainable manufacturing system based on supply chain security and self-reliance in critical materials.

Supply chains, rather than being merely a logistical construct, are strategic enablers of India's economic potential. Resilience along the value chain, from sourcing to transport, storage, and distribution, is essential. The current state of uncertainty and ongoing disruption gives robust supply-chain security a means to facilitate the success of the next phase of Make in India.

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

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## GEM RELEASES DETAILED VIGILANCE WEEK GUIDE TO STRENGTHEN TRANSPARENCY IN PROCUREMENT

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**M**ihir Kumar, Chief Executive Officer of the Government e-Marketplace (GeM), has announced a detailed plan for Vigilance Awareness Week, focusing on educating buyers and sellers on the dos and don'ts of public procurement to ensure transparency and compliance with rules.

Mihir Kumar, Chief Executive Officer of the Government e-Marketplace (GeM), has announced a detailed plan for Vigilance Awareness Week, focusing on educating buyers and sellers on the dos and don'ts of public procurement to ensure transparency and compliance with rules.

The Chief Executive Officer of GeM stated that the initiative aims to handhold stakeholders and raise awareness about how procurement under government rules differs from discretionary private purchases. "Government procurement is policy based, rule based. It is very important that you should be aware of the rules," he said.

Explaining the approach, Kumar said the campaign will encourage both buyers and sellers to be "satark" (alert) about procedures to avoid mistakes in procurement. "A bona fide mistake can be pardoned; a mala fide mistake cannot be pardoned. Many times, in the absence of information, people try to colour a bona fide mistake as a mala fide mistake. In order to avoid this, we will be releasing a series of dos and don'ts," he added.

He highlighted that preventive vigilance would be the focus of the exercise. "Preventive vigilance means that you stop it beforehand. Because once there is a mistake, it has to be investigated. Depending on the gravity of the mistake, there can be a departmental inquiry or a criminal investigation also," he said.

The GeM platform, which has been in operation for nine years, is designed to provide a transparent ecosystem for public procurement. Kumar pointed out that the

portal ensures that all bids, registrations, and awarded contracts are visible to the public. "This whole process of transparency tries to negate, to a great extent, that there is a lack of information. We have reduced the asymmetry of information," he said.

He also referred to a study conducted by Ernst & Young across six states, which found that procurement through GeM reduced turnaround time to 30-60 days and showed higher competition levels, with more than five bidders participating on average.

Kumar said GeM is working with states to align procurement rules with central processes. "Many states have taken a step, like Uttar Pradesh, that have completely aligned their procurement process according to GeM. We are persuading other states to adopt best practices," he noted.

The portal has also seen significant participation from micro and small enterprises, women entrepreneurs, and startups. According to Kumar, their contribution is higher than the mandated 25 per cent, reaching over 40 per cent.

GeM has also enabled unique procurements, including vaccines, defence requirements, and examination services. Kumar stressed that the platform is also promoting sustainable procurement in line with government policy on climate change.

As part of Vigilance Week, GeM will continue to release awareness material and maintain communication with stakeholders to reinforce compliance and prevent deviations. "Our request to all is to keep an eye on the do's and don'ts of our upcoming campaign. According to that, keep yourself alert, keep yourself prepared," Kumar said.

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

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## INDIA AND THE SPIRITUAL SIDE OF SUPPLY CHAIN

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This idea first sparked in my mind when I saw one of my colleagues invite a spiritual leader to speak at a supply chain event. It made me reflect on it deeply and specifically through the landscape of India's vast cultural and historical context. India, with a civilizational heritage and culture dating back over 4,500 years to Indus valley civilization embodies an extra ordinary mosaic of traditions, languages, religions, and social practices. The core of this lies in the family and community values, enriched by diverse spiritual beliefs and practices, which are upheld by a robust constitutional and legal framework. **Unity in diversity** is the spirit that drives this country to the best in the world. Interestingly, ancient references to India appear even in the Bible such as in the book of Esther (1:1 and 8:9). where King Ahasuerus's rule is described as extending from India to Ethiopia across 127 provinces. So, with such a profound historical foundation and cultural continuity, India naturally offers fertile ground for building resilient, ethical, and globally admired supply chain systems.

Supply chain discussions usually orbit around, resilience, zero impact, dashboards, disruptions, cost curves, compliances, last mile delivery etc. But when step back for a moment and search, we can see something very deeper in this in the Indian Context; it is a blend of spirituality, quietly how the people, trade, transport, negotiations, concept to create value and reverse the effects; the complete ecosystem embedded in it. Across the world, companies are talking about accountable sourcing, judicious consumption, and sustainability and India has been living with this ethos for centuries. I feel that the spiritual

DNA that guides Indian Societal behaviour has always touched the way, goods move and relationships get transformed to binding and complying. Global supply chain seeks purpose and value, Indian philosophy standing high as a soft power driver on this.

**DHARMA-** the ancient operating system prevailed in India which is about ethics and acts grounded in morality. It is fair play, transparency, accountability, and responsibility which in modern world transformed as ESG, Environmental, Social and Governance. In the Indian tradition it is simply **"Do what is right"**

Contracts and commitments – not for trade but for life  
Suppliers and stake holders – transparency and commitment  
Quality is duty and not a target or KPI  
Customers are God- respect and should not to be

exploited.



In the present scenarios we can see and hear global scandals in procurement and sourcing and the India's dharmic framework offers a refreshing integrity- timeless.

Look at the other important aspect- **SEVA**, this the driver in the Indian Logistics; it is selfless service; the cultural fabric of India. This is the core purpose of any supply chain service delivery and after delivery service. Look at a warehouse personal working late to meet the commitment of dispatch of medical supplies, or a transporter ensuring reaching the perishable commodity to downstream to the needy villages, driving extra miles is all echoing this seva mindset. It is not just transactions but value milestones.



We can see these efforts in the modern supply chain world like; focus of customer centric operations; last mile delivery, multimodal systems, cross docking mechanisms etc., frictionless, and uninterrupted service to human and consumption-oriented logistics designs that is advocated by the modern supply chain practitioners; the complex models, been simplified in



the “Seva” practices.

The **Yoga** is the philosophy of resilience and balancing, removing all imbalances is one of the signature processes of India, that talks about equilibrium and harmony. In the modern world, it is about inventory optimization, supply and demand balancing, integrated and synchronized flow of materials, communications, and finance, optimized operations, and mindful resource use.



We can see the global supply chains are racing for carbon neutrality, circular economy, and manufacturing, zero waste logistics which are the yoga's fundamental principle. It is the philosophy of working with the environment and not against it.

The belief of “**Vasudhaiva Kutumbakam**” is the first globalization theory that originated from India. Long, long ago before the globalization began shaping up, the Indian sages propagated this requirement for world resilience; the world is- just one family and the sustenance depend of the belief of this “**world as one**” thinking. And, today the supply chain professionals believe this as right and required to be followed. Even though we introduced this philosophy for the world, we are still way behind and this may be, because we are not following the culture and the attitude of our ancient sages worshipped for long.



Now if we look at any manufactured product, we could not find a homogenous mix of specific country. To site as an example, if one buys a smartphone, one is buying products from all over the world, many of the parts are from China, US, Africa, Vietnam etc. and no supply chain is hence a local one any more.

India has a unique advantage, as the comfort of civilization, inter connectedness of the country with other parts of the world and the spiritual strength perfectly fits for any global logistics network and to face any challenges. It is a fusion of spiritual enlightens with social economy.

Every supply chain is accountable to the society and the excellence of supply chain rest on it. “**Karma Yoga**” speaks about this accountability- it is performing one's duty sincerely, without any crookedness or excuses. In the modern supply chain this philosophy manifests to; lean processes, TQM (total Quality Management), SOP (Standard Operating Procedure), continuous improvement, zero defects, JIT (Just In-Time), etc.; as an example, a plant operator ensuring resources optimization and zero defects, or a logistics partner maintaining delivery schedules. The essence of Karma Yoga is practice to perfection.

I feel the world needs India's Supply chain spirituality to overcome its geopolitical shocks and tremors, pandemics, climate changes, ethical deterioration as, there is greater demand for meaningful systems and not just merely efficiency. India's model is a humanized model that built on values: -

- Relationship over transactions
- Sustainability over speed
- Fairness over opportunism
- Long term trust over short term gains

The world is tired of disruptions and India's philosophy offers resilience rooted in character, community, and consciousness; the three C's I would love to say and not on technology alone. The technological evolutions will happen and changes are inevitable; like adapting to AI, Blockchain, Robotics, Drones, IoT, AR & VR, Cloud, Algorithms etc. but spirituality on the other side offers what machines are unable to give and are:

- Empathy - provides
- Intuition - support
- Purpose - value
- Ethical judgement – righteousness

The future supply chain will be a blend or fusion of both technology and spirituality. It is not just going to temple, churches, and mosques; it is living in the spirituality. India with its spiritual intelligence and practical wisdom is placed to lead the supply chain for the world and that is India's competitive advantage. The sad side of it is that India is still in the awakening but the world had already discovered it.

The global supply chain community is increasingly turning towards the values like, ethics, sustainability, balance, and collective well being articulated thousands of years ago by India. Ironically, while the world recognizes and integrates these ideas with greater enthusiasm, India itself is only beginning to rediscover the depth of its own heritage. For decades, Indian businesses often chased Western models of efficiency,

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economy, and maximization of profit, overlooking the spiritual wisdom embedded in their own cultural DNA.



But today, amid global disruptions and ethical crises, the world is circling back to the ancient Indian blueprint; Dharma, Seva, Yoga, Vasudhaiva Kutumbakam, and Karma Yoga as a foundation for resilient, and responsible supply chains. At the same time Europe's advanced supply chain evolution can not to be separated from the Biblical values that shaped its culture of ethics, accountability, fairness, and responsible enterprise. The question however is, whether India has truly identified its own civilizational strengths and embraced these values or not? not fully and at least not yet. But an awakening has begun and can India ultimately lead? I believe it can. With its deep and ancient spiritual wisdom combined with modern digital capability, INDIA hold the potential to shape the world's most ethical, sustainable, and visionary supply chains.

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## THE FUTURE OF CONTRACT MANAGEMENT: EMBRACING SUSTAINABLE PRACTICES FOR BUSINESS AND THE PLANET

JOY CUNANAN

In a world increasingly attuned to the pressing need for environmental and social responsibility, contract management is emerging as a potent instrument for fostering sustainability. Lexagle, Asia's foremost contract management provider, recognizes the pivotal role of sustainable practices within the contract lifecycle. In this comprehensive article, we embark on an enlightening exploration of a timely and vital topic – the imperative of sustainable contract management. We will delve into how businesses can effectively integrate sustainability principles into their contract processes, driving not only positive social and environmental outcomes but also enhancing their own reputations and bottom lines.

### The Imperative for Sustainable Contract Management

To appreciate the significance of sustainable contract management, we must first grasp the compelling reasons behind its rise.

**Regulatory and Legal Frameworks :** Governments worldwide are responding to pressing environmental and labour concerns with increasingly strict regulations. Sustainable contract management is pivotal in ensuring compliance with these evolving legal standards. It encompasses measures like environmental clauses to enforce environmental regulations, ethical labour provisions to uphold labour and social responsibility laws, and continuous monitoring to adapt to regulatory changes. This proactive approach not only mitigates legal risks but also safeguards against legal liabilities and reputational damage while aligning organizations

with ethical and environmental best practices, promoting a positive image in an increasingly conscientious global landscape.

**Stakeholder Expectations :** Stakeholders including customers, investors, and employees are placing growing importance on sustainability. They actively seek out businesses that demonstrate a commitment to sustainable practices. By embedding sustainability principles within contracts, organizations not only meet these expectations but also strengthen stakeholder trust and loyalty. This alignment with sustainability values reinforces the organization's reputation, fosters positive stakeholder relationships, and positions it as a responsible and attractive choice for customers, investors, and employees alike.

**Risk Mitigation :** Sustainability risks, encompassing environmental, social, and governance (ESG) factors, have emerged as critical considerations that can significantly impact both business operations and reputation. Sustainable contract management plays a pivotal role in identifying and proactively mitigating these risks. By incorporating sustainability clauses and compliance measures into contracts, organizations effectively safeguard themselves against potential ESG-related pitfalls. This strategic approach not only minimizes the financial and legal consequences associated with sustainability risks but also bolsters an organization's resilience and reputation in an ever-evolving business landscape. In essence, sustainable contract management becomes a powerful tool for navigating the intricate terrain of sustainability

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challenges, ensuring businesses are well-prepared and responsive to the multifaceted risks that the modern world presents.

**Resource Efficiency :** Sustainable practices have a remarkable side effect: they drive resource efficiency and translate into long-term cost savings, positioning businesses for greater competitiveness. By adopting sustainable principles within contracts, organizations can optimize resource utilization, reduce waste, and minimize environmental impact. These efficiencies extend across various aspects, from energy consumption and raw material usage to streamlined supply chains and eco-friendly processes. Consequently, businesses that prioritize resource efficiency through sustainable contract management not only contribute to environmental stewardship but also gain a distinct advantage in a competitive marketplace, where efficiency translates directly into improved profitability and resilience against resource-related challenges.

**Strategies for Sustainable Contract Management :** Transforming your contract management practices to be more sustainable is a multifaceted endeavour. Here are comprehensive strategies to guide your efforts.

**Supplier Collaboration and Assessment :** In the pursuit of sustainability, forging strong partnerships with like-minded suppliers is pivotal. Collaborating closely with suppliers who share a commitment to sustainability can be a game-changer. Sustainable contract management emphasizes the importance of these collaborations and goes further by advocating for comprehensive supplier assessments. By thoroughly evaluating both potential and existing suppliers, organizations ensure alignment with their sustainability objectives. These assessments delve into various facets, such as ethical practices, environmental responsibility, and adherence to sustainable sourcing. Through this dual approach of collaboration and rigorous assessment, organizations not only mitigate supply chain risks but also create a network of partners who contribute to shared sustainability goals. In essence, sustainable contract management transforms supplier relationships into a strategic asset, one that propels businesses toward a more sustainable, ethical, and competitive future.

**Sustainable Procurement Policies :** The foundation of responsible and sustainable contract management lies in the development and implementation of comprehensive sustainable procurement policies. These policies are the compass guiding organizations towards ethically and environmentally sound supply chain practices. They encompass critical considerations such as the environmental and social impact of products, the evaluation of suppliers' labour practices, and the prioritization of ethical sourcing. By embracing sustainable procurement policies, organizations not only make informed choices when selecting suppliers and products but also actively contribute to global sustainability efforts. These policies serve as a clear roadmap for aligning business operations with environmental and social responsibility, safeguarding

against potential supply chain risks, and ultimately strengthening the organization's position as a responsible global citizen, attuned to the complex challenges of our times.

**Incorporation of Green Contract Clauses :** The path to sustainability within contract management involves a strategic step – the integration of green contract clauses. These clauses are the contractual embodiment of an organization's commitment to sustainability. They can encompass a spectrum of sustainability-focused stipulations, such as compelling suppliers to curtail greenhouse gas emissions, embrace renewable energy sources, or minimize waste generation. Crucially, these clauses should be both measurable and enforceable. This approach not only translates sustainability ideals into tangible actions but also ensures accountability throughout the contract's lifecycle. By incorporating green contract clauses, organizations not only uphold their sustainability objectives but also lay the foundation for a sustainable future, where contracts become a powerful instrument for positive environmental change and social responsibility.

**Performance Metrics and Reporting :** A cornerstone of sustainable contract management is the establishment of clear sustainability performance metrics. These metrics, which can encompass reductions in carbon emissions, waste generation, or other environmentally and socially significant factors, serve as measurable benchmarks for progress. Crucially, these metrics are not merely set aside as abstract goals; they are integrated directly into contracts. This integration ensures that sustainability targets are not just aspirations but contractual obligations. Regular monitoring and reporting on progress towards these metrics become standard practice. Transparency in reporting not only strengthens accountability but also builds trust with stakeholders, who increasingly demand visibility into an organization's sustainability efforts. Sustainable contract management, with its emphasis on performance metrics and reporting, transforms contracts into vehicles for measurable, accountable, and transparent sustainability progress, creating a virtuous cycle of commitment and credibility.

**Lifecycle Assessments :** One practice in sustainable contract management is conducting comprehensive lifecycle assessments for products and services procured through contracts. These assessments shine a light on the complete environmental impact of a product or service, from its production to its ultimate disposal or reuse. The data generated from these assessments serves as a beacon for informed decision-making about procurement and contract terms. Organizations armed with this knowledge can make environmentally responsible choices, prioritize eco-friendly suppliers, and embed sustainability considerations into contract negotiations. Lifecycle assessments not only foster a deeper understanding of an organization's environmental footprint but also empower it to forge a path toward more sustainable, ethical, and responsible contracting practices, setting a high standard for the

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industry and inspiring positive change.

**Renewable Energy Agreements :** Exploring renewable energy agreements, such as Power Purchase Agreements (PPAs) is also a step towards the right direction. These agreements present opportunities to shift towards clean, renewable energy sources and dramatically reduce an organization's carbon footprint. By incorporating such agreements into contracts, organizations not only demonstrate their commitment to sustainable energy practices but also contribute tangibly to a greener future. This transition not only aligns contracts with the evolving landscape of environmental responsibility but also positions organizations as pioneers in the global shift toward sustainable energy, setting a powerful example for others to follow. Renewable energy agreements within contract management become catalysts for change, driving not only operational efficiencies but also environmental progress.

**Ethical Labor Standards :** One of the cornerstones of sustainable contract management is the integration of ethical labour standards. Contracts become instruments for promoting social responsibility, embedding clauses that demand suppliers to adhere to ethical labour practices. These practices include guaranteeing fair wages, providing safe working conditions, and enforcing non-discrimination policies. Such contractual clauses not only establish expectations but also hold suppliers accountable for upholding these critical standards. Ethical labour standards within contracts contribute to a broader commitment to socially responsible contract management. By ensuring that all stakeholders are treated with dignity and fairness, organizations not only fulfil their ethical obligations but also establish themselves as advocates for human rights and social equality, setting a higher standard for responsible business practices that resonate positively with consumers, investors, and the global community.

**Circular Economy Initiatives :** Organizations are encouraged to inspire suppliers to adopt circular economy principles, which prioritize waste reduction, material reuse, and end-of-lifecycle product recycling. By actively promoting these initiatives within contracts, organizations not only manifest their commitment to sustainability but also encourage a fundamental shift towards more environmentally responsible practices. Contracts that support circular economy principles become catalysts for change, where products and materials are no longer seen as disposable but as valuable resources to be managed sustainably. Through these visionary contract approaches, organizations take a bold step towards a more sustainable future, where circular economy practices reduce waste, conserve resources, and pave the way for a world where sustainability is the norm, not the exception.

**Transparency and Stakeholder Engagement :** This involves maintaining open and honest lines of communication with stakeholders regarding an organization's sustainability efforts. Engaging proactively with customers, investors, and employees

fosters a sense of shared responsibility for environmental and social impact. This two-way dialogue not only cultivates trust but also showcases a genuine commitment to sustainable contract management. By actively involving stakeholders in the sustainability journey, organizations become catalysts for change, setting a precedent for responsible business practices that resonate positively with consumers, inspire investor confidence, and motivate employees toward a collective vision of a more sustainable future. In essence, transparency and stakeholder engagement within sustainable contracts become powerful instruments for fostering trust, collaboration, and a brighter, more sustainable tomorrow.

### **Technology's Role in Sustainable Contract Management**

Harness the power of technology, such as Lexagle's contract management platform, to streamline and enhance your sustainable contract management efforts. Technology offers several advantages.

**Automated Tracking and Reporting :** Contract management software can automate the tracking of sustainability metrics and generate reports in real-time. This simplifies the monitoring and reporting process, ensuring compliance with sustainability clauses.

**Data Analytics :** Advanced contract management platforms utilize data analytics to provide insights into sustainability performance. These insights can inform decision-making and drive continuous improvement in sustainability practices.

**Collaboration and Transparency :** Technology facilitates collaboration among stakeholders and enhances transparency in contract management. It enables real-time access to contract data, making it easier to align actions with sustainability goals.

**Efficiency and Compliance :** Automated workflows and reminders ensure that sustainability clauses are consistently enforced and monitored throughout the contract lifecycle, reducing the risk of non-compliance.

**Embrace Sustainability with Lexagle. :** In an era where sustainability is no longer a choice but a mandate, businesses must embrace sustainable contract management as a core practice. By weaving sustainability principles into their contracts, organizations can contribute to positive environmental and social outcomes while bolstering their own reputations and financial resilience. Lexagle, with its commitment to innovation and excellence in contract management, stands ready to support your journey toward sustainable contract management. Together, we can forge a future where contracts not only drive business success but also contribute to a more sustainable and equitable world for all.

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

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# A NEW CASE FOR MANUFACTURING AND SUPPLY CHAINS IN INDIA WITHIN THE CURRENT GEOPOLITICAL CONTEXT

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**Introduction :** The May 6, 2025, India-Pakistan conflict has raised questions about the future of South Asia's regional economic integration. India has ceased all direct and indirect trade with Pakistan, halting a \$10 billion annual exchange of goods. South Asia, as a region of aspiration, seems lost for some time. However, the geographical reality of proximity, common borders, and cultural affinity cannot be changed. India is a key destination for the shift of supply chains from China, and the region is the catchment area for these benefits. How, then, can the region play its role as the next big trade hub?

There are currently three imperatives for India to emerge as a manufacturing hub. The first is the Trump tariff effect, where India faces 26% reciprocal tariffs on exports to the US, the world's largest high-income market. A second factor is Pakistan, whose tepid growth, low productivity, and lack of domestic reform are hindering the region, depriving it of the benefits of developing a supply chain ecosystem and ultimately prosperity. Thirdly, China and East Asia's integration into global supply chains, which has generated jobs and unprecedented prosperity, provides valuable lessons for others, even amidst global trade policy uncertainty.

This indicates that South Asia is increasingly leaning towards trade in the new geopolitical context. Indeed, India is enhancing its trade engagement with the world, showcasing a series of free trade agreements (FTAs). Recently, Sri Lanka signed FTAs with Thailand and Singapore. Meanwhile, Bangladesh has been discussing FTAs with various Asian countries. This reflects a regional aspiration to establish the supply chain ecosystem necessary for an ambitious trade agenda.

It is none too soon. Starting in June, all of Apple's iPhones for the U.S. market will be made in India, still cheaper despite the new U.S. tariffs. Samsung, Volvo, Siemens, and Amazon have announced they will expand their manufacturing footprint in the country. This is not a sudden shift following the imposition of U.S. tariffs. Multinational companies had already begun reducing their dependence on China before Covid-19, and its popularity as a manufacturing source was receding, particularly among Western firms.

This essay, therefore, examines the prospects for India and the rest of South Asia. It seeks to address the following questions:

1. Is India rising as a global manufacturing hub?
2. Is trade diplomacy in high gear at last?
3. What lessons can we learn from China?
4. How can India's neighbours be lifted?

## India's Role in Global Manufacturing

The disruption of China-centric global supply chains is underway, with reports indicating that inward Foreign Direct Investment (FDI) has fallen to historic lows for both the U.S. and China (Baldwin, Freeman & Theodorakopoulos, 2023). The migration of labour-intensive supply chains from China to lower-cost locations can be attributed to rising wages, domestic supply chain bottlenecks, and investor concerns about stricter regulation of foreign companies, along with the escalating trade war between Washington and Beijing. Vietnam and Thailand have emerged as significant beneficiaries of these supply chain shifts. India is now being positioned to become a complementary Asian manufacturing hub to China (Wignaraja, 2023), regarded as a reliable alternative destination among the largest global FDI recipients, driven by its rapid economic growth, a large educated labour pool, and a vast domestic market (Economic and Social Commission for Asia and the Pacific, 2023).

An influential view, most prominently presented by Rajan and Lamba (2024), argues that India's services sector is the primary driver of economic growth in an increasingly globalised world of services. They suggest that India should leverage its comparative advantages in labour to enhance its role in both the domestic economy and global services trade, particularly in digitally delivered services. They conclude that India ought to invest more in human capital and skills to capitalise on this strength in services. This view holds some merit, as India does possess favourable demographics with a youthful population, providing ample supplies of low-cost manpower. However, international development history indicates that relying solely on services development may be inadequate for a large economy like India to progress beyond lower middle status and create high-quality jobs.

The crucial role of manufacturing development in generating jobs and prosperity is emphasised by the East Asian miracle story. This narrative begins with the industrialisation of Japan during the inter-war period, followed by the emergence of the four East Asian dragon



economies (Korea, Taiwan, Hong Kong, and Singapore) in the 1960s and 1970s, and China since the 2000s. Looking further back in history, the rise of the UK, Germany, and the US occurred alongside the industrial revolutions of the 18<sup>th</sup> and 19<sup>th</sup> centuries.

Furthermore, the evidence suggests that pessimism regarding manufacturing and supply chains in India appears to be shifting at last. One indication comes from within the Indian manufacturing sector itself. The Purchasing Managers Index (PMI) summarises whether market conditions for manufacturing are expanding, remaining the same, or contracting, as perceived by purchasing managers. India's PMI is well above 50, relatively high compared to comparator economies including China and Indonesia (ADB, 2025). Furthermore, there have been significant micro-level investments by global MNCs in India. Prominent among these is Apple, which has been ramping up its manufacturing of iPhones in India since 2020; Toyota has increased its investment by establishing a new plant in Karnataka, and Hyundai's 2024 investment in Maharashtra has enhanced its capacity and encouraged technological advancement. India's manufacturing sectors in areas such as automotives, pharmaceuticals, and electronics assembly are already well-established and stand to benefit from a series of policy initiatives, which have resulted in a 69% increase in FDI equity inflow in the manufacturing sector over the past decade of 2014-24 compared to the previous decade of 2004-14.

Perhaps most important in uncertain global times has been the visible advancement in India's defence manufacturing sector, largely due to the Make in India initiative (Ahuja, 2024). In 2023-24, it experienced an increase of 174% (CK) over the past decade, along with a boost in exports. India aims to become a defence manufacturing hub, targeting 3 lakh crore (\$35 billion CK) in defence production by 2029. Start-ups, large domestic companies, and multinationals are actively developing a range of products. For instance, in 2024, Airbus, in partnership with Tata Advanced Systems, inaugurated a C295 final assembly line complex in Gujarat for producing military transport aircraft for the domestic market.

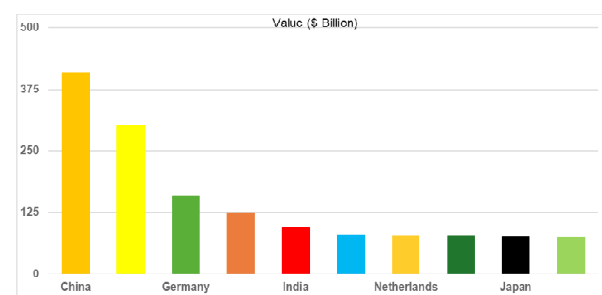
An impressive performance has been that of the BrahMos, a long-range supersonic cruise missile developed collaboratively by India's Defence Research and Development Organisation (DRDO) and Russia's NPO Mashinostroyeniya. India exported the BrahMos to the Philippines in 2024, and in 2025, it has been in talks with Vietnam and Indonesia for similar exports. In the conflict between India and Pakistan on 7-8 May 2025, the vastly superior performance of the BrahMos has resulted in increased inquiries for exports and enhanced discussions between India and Russia for advanced versions of the missile.

With this new confidence, India needs reforms that promote trade openness, reduce the red tape regulations strangling businesses, and facilitate investments in renewable green energy (Das, 2024; World Bank, 2024). Closer policy coordination between the central government and India's semi-autonomous states is essential in areas such as attracting foreign direct investment and cross-provincial infrastructure development (including national highways and high-speed road networks).

Is there some merit in revisiting India's landmark 1991 reforms? Influential commentators like Douglas Irwin (2025) suggest that the political economy of reforms matters. He argues that in 1991, reform-minded technocrats persuaded political leaders to reject what had been a standard response to balance of payments pressure (import repression to avoid a devaluation) and embrace a new approach (exchange rate adjustment and a reduction of import restrictions). Several other elements now need to coalesce. Supply chains rely on a multitude of service inputs. In this vein, India's service sectors (including information and communications technology, financial and professional services, and transport and logistics) are also positioned for growth.

The final goods produced in these factories rely on sophisticated semi-finished goods from abroad, which have contributed to the growing Indian imports of intermediate goods. Thus, a second indication of India's ascent in the global supply chain is its role as a major global importer of intermediate goods. In the fourth quarter of 2023, the WTO ranked India as the fifth-largest importer of intermediate goods (see Figure 1) – up from the 10th rank in the second quarter of 2021. In 2023, India was behind top global importers such as China, the U.S., Germany, and Hong Kong. The country is now positioned ahead of European developed country importers (the UK, Netherlands, and France) as well as Japan. Few foresaw India's emergence as a leading global importer of intermediates a decade ago.

**Figure 1: World's Ten Largest Intermediate Goods Importers**



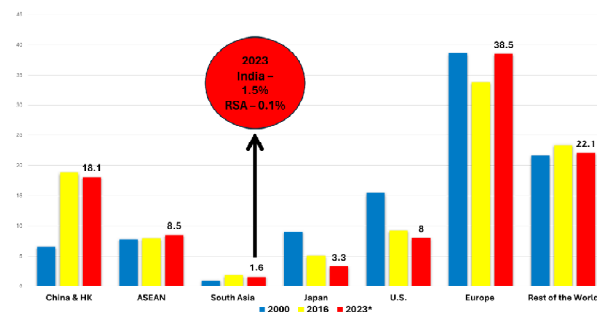
Notes: Figures in \$billion  
Source: World Trade Organisation, 2023

A third indication of India's role in global supply chains

is its position as an exporter of intermediate goods. Here, the data suggest that India and South Asia as a whole are relatively small players in supply chains compared to East Asian or developed economies. Between 2000 and 2023, India's share of world intermediate goods exports doubled from a modest 0.8% to 1.5% (see Figure 2). Adding the rest of South Asia (an estimated 0.1% of world intermediate goods exports) to India's share yields a tiny regional total of only 1.6% in 2023. Meanwhile, China and Hong Kong account for 18.1% of the world share, and ASEAN contributes another 8.5%. Although declining, Japan, the U.S., and the EU hold larger world shares than South Asia.

Furthermore, there are very limited regional spillovers from India's supply chain activities to the rest of South Asia. Intra-regional trade in South Asia, at 5% in 2017, is among the lowest globally. This positions South Asia as one of the world's most economically disconnected regions. Despite its increasing trade volume with the world, India's trade with its neighbours constitutes between 1.7% and 3.8% of its global trade. India's largest regional trading partner is Bangladesh, followed by Sri Lanka and Nepal.

**Figure 2: South Asia in World Shares of Intermediate Goods Export (%)**



Note: \* represents estimates  
Source: WTO (2023), Wignaraja (2023)

**Trade Diplomacy in High Gear :** Since 2022, the Modi government has renewed its emphasis on preferential openings with trading partners through a series of bilateral trade deals, such as the UAE-India Comprehensive Economic Partnership Agreement and the Australia-India Economic Cooperation and Trade Agreement (ECTA). Additionally, it has joined significant regional trade frameworks like the Indo-Pacific Economic Framework (IPEF) (Dhar 2022). A trade agreement signed with the UK in May 2025 offers notable gains in services and ambitious market access (Wignaraja, 2025). This will enhance ongoing negotiations with the EU to conclude an equally comprehensive, high-standard FTA and with the U.S. for a partial Bilateral Trade Agreement. India is a latecomer to Asia's FTA bandwagon but is striving to catch up with East Asia (Kawai and Wignaraja, 2013; Wignaraja, 2022). According to the Asian Development Bank's Asia

Regional Integration Centre database, India has 17 concluded FTAs and another 19 under negotiation (see Table 1). In terms of concluded FTAs, India ranks alongside leading Southeast Asian countries like Indonesia (19), Malaysia (19), Thailand (16), and Viet Nam (18).

The geopolitical signalling regarding trade openness in 2025 is significant. India is progressing with free trade agreements with the Global North, which has positive implications across the board. Firstly, an India-EU FTA alongside an India-UK FTA could strengthen reformed global rule-making on international trade and potentially revitalise the WTO – a stated goal of India. Secondly, FTAs act as a stepping stone to India's membership in the Comprehensive and Progressive Trans-Pacific Partnership (CPTPP). The CPTPP, a high-standard mega FTA that reduces trade barriers for its members and which India declined to join, represents a significant share of world trade. The 12 members, including Japan and the UK, collectively account for 15% of global trade and 15% of world GDP.

The CPTPP includes agendas for services, trade, investment rules, intellectual property rights, government procurement, etc., which support the spread of supply chains. Consultations with businesses during FTA negotiations and the provision of business development services for FTA implementation are essential, as trade and investment do not necessarily increase merely because an FTA is signed.

As Indian businesses gain experience and confidence in trading under the agreements with the Global North, facilitating closer economic integration, India can effectively study the economic benefits and costs of CPTPP accession. It provides access to multiple markets at once, will benefit India from the China+1 strategy, and boost business for MSMEs, which account for 40% of India's exports. This will resonate throughout South Asia, where SMEs are the backbone of these economies but do not yet contribute significantly to exports.

**Table 1: South Asia: Joining the bandwagon of FTAs**

Country	Negotiations launched	Concluded FTAs
Japan	7	21
China, People's Republic of		
Republic of Korea	12	28
Hong Kong, China	1	9
Taipei, China	2	6
Brunei	1	11
Cambodia	1	11
Indonesia	11	19
Malaysia	8	19
Philippines	3	11
Singapore	7	35
Thailand	10	16

Vietnam	2	18
India	19	17
Sri Lanka	5	7
Bangladesh	3	5
Pakistan	6	13
Maldives	1	4
Bhutan	2	3

Source: Asia Regional Integration Center, February 2025

At home, the FTAs will provide the country with a unique opportunity to implement necessary reforms and open up its economy, as it did in 1991. This, in turn, will increase foreign capital, enhance skills, foster R&D and innovation, and drive the country towards a more competitive and open economy.

Thus far, India has undertaken the following initiatives to enhance manufacturing:

- **Make in India:** Launched in September 2014, it aimed to transform India into a global design and manufacturing hub. The focus was on facilitating business by reforming policies to make them more investor-friendly and emphasising infrastructure development.
- **Atmanirbhar Bharat:** Launched in May 2020, the Self-Reliant India Campaign focused on reforming seven key sectors, particularly to facilitate business.
- **Product Linked Incentive (PLI) Scheme:** Launched as a continuation of Atmanirbhar Bharat, this initiative provides financial incentives for increased production and incremental sales across an additional 14 sectors. The objective is to support and enhance India's manufacturing sector.

**Lessons from China :** Some aspects of China's industrial policy may be relevant to India, such as better targeting of multinationals with which to partner for new industrial endeavours that could provide potential comparative advantages. It necessitates improved coordination between the central government and state administrations. Equally important is investment in higher education in science, technology, engineering, and mathematics.

However, industrial policy is a contentious area, and caution should be exercised before India attempts to emulate China's state interventionist template. Significant risks include government failure and cronyism. It would be prudent to engage actively with think tanks to gain insights into what might work. Still, India can learn much from China's experience.

- **Lesson 1: Promoting export-oriented FDI.** Trade liberalisation entails an open-door policy towards FDI in manufacturing and encourages high-level investment, offering competitive incentives and establishing modern SEZs as public-private

partnerships.

- **Lesson 2: Reducing business hurdles.** The digitalisation of taxes, customs fees, and business administration is essential. Industrial policy aimed at facilitating the green transition and trade is increasingly being employed and can yield significant benefits.

- **Lesson 3: Fostering regional supply chains.** India should promote regional supply chains by scaling up the Make in India programme to a Make in South Asia initiative. India can offer fiscal incentives to its manufacturers to expand into Bangladesh and Sri Lanka. The food processing, textiles, apparel, and automotive sectors are suitable for regional expansion, considering the factories and expertise of these neighbours.

**Lifting Up India's Neighbours :** At present, much of South Asia is not a significant part of India's trade narrative, despite the economic potential of certain countries. Therefore, it is economically beneficial for India to disseminate the advantages from this trade regionally, fostering resilient and cost-effective regional supply chains in South Asia. This will stabilise the region, create jobs, and render its neighbours less vulnerable to the potential risks associated with Chinese infrastructure investments, including debt distress linked to high interest, low return port projects, as well as environmental challenges (e.g. deforestation, habitat destruction, water pollution, and increased carbon emissions).

In this spirit, India-Sri Lanka FTA talks could be resumed, with a view to concluding an investment deal, followed by a more comprehensive FTA. Cutting redundant business regulations and strengthening investor protections in Sri Lanka are crucial for attracting Indian foreign investors to the country's ports, logistics, renewable energy, digital economy, and tourism ventures. Such ventures generate much-needed foreign exchange and provide Sri Lanka with a path away from indebtedness and towards transformative growth.

A sure way for South Asia to establish resilient and cost-effective regional supply chains is for Indian businesses to invest in the region and cultivate substantial local linkages and spillovers for their South Asian partners (Kathuria, Yatawara and Zhu, 2021). This is already occurring to a limited extent in Sri Lanka and Bangladesh. The Adani Group, for instance, has invested in a joint venture with John Keels Holdings to develop the West Container Terminal at Colombo Port. This project leverages Sri Lanka's advantageous geographical position along the main East-West global sea route and transshipment trade to India.

Bangladesh was growing rapidly, boasting a larger domestic market and cheaper wages than Sri Lanka, until its internal crisis. It had become an attractive

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destination for Indian FDI in the manufacturing sector. Tata Motors, Hero MotoCorp, Sun Pharma, Godrej, VIP, CEAT Tyres, and Aditya Birla Cement all established factories in Bangladesh. A natural corollary would have been increased private investment in consumer-oriented sectors and start-ups focused on fintech, healthcare, and agritech, aimed at developing a local ecosystem with access to seed funding and technology transfer from India. However, these potential developments are now on hold due to political events.

### **India-Sri Lanka: A Model for South Asian Cooperation**

The joint statement released following Prime Minister Narendra Modi's visit to Colombo in April 2025, and Sri Lanka's President Anura Kumara Dissanayake's visit to New Delhi in December 2024, highlighted India's commitment to assist Sri Lanka in becoming an energy hub, strengthening India-Sri Lanka defence cooperation, enhancing educational, health, and technological exchanges, and promoting Indian FDI in Sri Lanka.

It is evident that India recognises Sri Lanka as a premier partner in transforming South Asia into a progressive economic region amid an uncertain global economy. Sri Lanka has recorded the highest GDP per capita in South Asia, peaking at \$4,388 in 2017, driven by a robust machine of medium and small enterprises. Its decline over five years to \$3,343 per capita has dealt a blow to a country used to a comfortable standard of living. This is what Dissanayake has pledged to reverse. He has affirmed that Sri Lanka will proceed with its 17<sup>th</sup> IMF programme while increasing social spending to alleviate high poverty levels. He is enhancing governance by implementing anti-corruption measures, digitising the government, and modernising agriculture.

The bilateral agreements with India assist the new government in continuing these efforts and shifting the focus of the relationship from aid to trade. India has committed to supporting Sri Lanka in the digitalisation of its public services, a model that India has pioneered, which will aid in fulfilling some of the promises made by the NPP for targeted social protection and anti-corruption. A Memorandum of Understanding (MoU) was signed during PM Modi's visit to Colombo in April 2025 with Sri Lanka to establish a high-voltage direct current (HVDC) connection for importing and exporting power. A tri-partite agreement between India, the UAE, and Sri Lanka to develop Trincomalee into an energy hub is a model that can be replicated in other sectors.

It's a promising start that can elevate the bilateral relationship to resemble the close cooperation evident among Thailand, Cambodia, and the Lao People's Democratic Republic, for instance, in the Greater Mekong sub-region. New Delhi and Colombo can consider piloting a regional PLI scheme in Sri Lanka, similar to the Government of India's efforts to build domestic capabilities in sophisticated manufacturing industries,

including solar panels, electric vehicles, and electronic components. A limited extension of the domestic PLI scheme to Indian businesses for manufacturing solar panels in Sri Lanka will mitigate the risks of overseas investment and foster regional supply chains in the neighbourhood – a key goal for India's China+1 strategy.

Such enhanced cooperation with Sri Lanka is almost a necessity. India is facing a hostile neighbourhood in 2025. Relations with Bangladesh are strained; the debt-distressed Maldives reluctantly accepted a short-term liquidity inflow from an RBI swap after China cooled towards its request for aid. Nepal's Prime Minister K.P. Sharma Oli has just signed a framework agreement with China to implement infrastructure projects under the Belt & Road Initiative. Struggling economically under Taliban rule, Afghanistan risks becoming a regional centre for narcotics trade and illegal migration, as does Myanmar to India's east. Relations with Pakistan remain in cold storage.

These issues concern both India and Sri Lanka. An effective economic partnership in South Asia can serve as a model for others, bolster India's Neighbourhood First Policy, and enhance India's position as a regional power.

**Conclusion :** The slowdown of the Chinese economy and the shift, particularly by MNCs, from China to other, more competitive locations, have opened up business opportunities for latecomers to supply chains in the developing world. The available evidence suggests that Southeast Asia and some South Asian countries, such as India, Sri Lanka, and Bangladesh, could benefit from the supply chain shift, particularly in labour-intensive segments. The shift is underpinned by geopolitics, as well as the availability of skilled and relatively low-cost labour and a large middle class. However, these factors carry constraints: Southeast Asia does not offer scale, and South Asia, which can, is a latecomer to trade-led regionalism, therefore constrained by policy barriers and infrastructure gaps.

Three policy implications arise from the analysis presented in this paper regarding the enhancement of India's and the broader South Asia's role in global supply chains. First, openness to trade and FDI inflows is fundamental for entering and deepening a country's position in global and regional supply chains. The Trump reciprocal tariffs might be viewed as an opportunity for South Asia to implement comprehensive trade and FDI reforms, reduce red tape, and digitise business procedures to improve the ease of doing business and minimise corruption vulnerabilities. It may be prudent to reconsider the case for 'big bang' comprehensive reforms, as gradual, incremental reforms have yielded mixed results.

Secondly, countries should invest in trade-related infrastructure, such as transshipment ports, logistics

services, and connectivity between ports and roads, to significantly reduce trade costs. In this context, enhancing the performance of Special Economic Zones (SEZs) to attract both foreign and domestic investors, along with the clustering of business activities, is advantageous as trade and investment reforms may require time.

Third, concluding comprehensive free trade agreements with India's neighbours, such as Sri Lanka, would help to reduce regional trade barriers and establish rules-based trade in the region amidst global uncertainty. In this context, India should consider time-bound fiscal and financial incentives to encourage the regionalisation of supply chains in its neighbourhood, similar to its own PLI scheme.

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- Source: indiafoundation.in

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# GREEN CONTRACTS: THE FUTURE OF SUSTAINABLE BUSINESS PRACTICES

SONNY STRINGER

**D**iscover practical tips for implementing green contracts and enhancing sustainable business practices.

Green contracts include sustainability clauses that help businesses meet environmental, social, and governance (ESG) goals. These agreements promote sustainable practices and drive ecological benefits. This article will explore what green contracts are, their key components, and the advantages they offer.

## Key Takeaways

1. Green contracts incorporate ESG clauses that mandate adherence to stringent environmental, social, and governance standards, promoting sustainability in global supply chains.
2. The implementation of green contracts is facilitated by solicitors who help tailor agreements to meet specific sustainability goals, despite challenges in interpreting ESG clauses within existing legal frameworks.
3. The Corporate Sustainability Due Diligence Directive (CSDDD) will significantly influence the future of green contracts by establishing binding obligations for businesses regarding their environmental and social impacts.

## Understanding Green Contracts<sup>1</sup>

Sustainability is a concept that revolves around using natural resources in a manner that can be maintained indefinitely without depleting them or causing harm. The United Nations Brundtland Commission defines sustainability as meeting the needs of the present. It also emphasises the importance of not compromising future generations' ability to meet their own needs. The importance of sustainability transformation cannot be overstated, especially in the context of addressing climate change and protecting our environment.

The Corporate Sustainability Due Diligence Directive (CSDDD), which came into effect in July 2024, marks a significant step towards ensuring that companies manage their human rights and environmental impacts across global value chains. This directive promotes a consistent legal framework within the European Union, enhancing international competitiveness and driving innovation in corporate sustainability.

Green contracts, a key component of this sustainability shift, are designed to include sustainability clauses that benefit both clients and the environment. These contracts aim to move towards more sustainable business practices, supporting ecological, human, and economic health and vitality. Green contracts, through their sustainability

clauses, create a structured approach for organisations to positively impact environmental sustainability.

## Key Components of ESG Clauses in Green Contracts

The backbone of green contracts lies in their ESG clauses, which ensure that suppliers adhere to stringent environmental, social, and governance standards. These clauses are critical in addressing risks related to greenhouse gas emissions and waste management within supply chains. Incorporating ESG standards helps companies mitigate potential environmental and social impacts, fostering a more sustainable business environment.

The CSDDD introduces comprehensive obligations for large companies, requiring them to integrate due diligence into their policies and assess their environmental impacts. This directive aims to enhance transparency and trust in business practices, leading to a healthier environment and improved human rights protections. Such regulatory frameworks are essential in ensuring that companies remain accountable for their actions.

In the realm of mergers and acquisitions, warranties related to ESG compliance have become increasingly common. Breaches of these warranties can incur significant financial liabilities, underscoring the importance of adhering to ESG standards. These clauses play a pivotal role in safeguarding the values and capital of companies, ensuring that their operations align with broader sustainability goals.

## The Role of Solicitors in Implementing Green Contracts

Solicitors play a crucial role in the successful implementation of green contracts. Incorporating sustainability clauses allows them to tailor contracts to align with an organisation's specific net-zero objectives. This enables clients to meet their sustainability goals and navigate their transitions towards net-zero emissions.

Beyond merely drafting contracts, solicitors are instrumental in addressing climate risks by integrating sustainability considerations into every transaction. This not only enhances their practice but also contributes positively to the environment. Solicitors, therefore, become key players in promoting sustainable practices within the legal framework.

However, challenges do exist. The formalistic approach of English contract law can sometimes hinder the interpretation of ESG clauses, as it does not typically consider social or environmental contexts. Despite these challenges, solicitors can leverage their expertise to navigate these complexities and drive the adoption of green contracts.

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## How SkootEco Supports Solicitors with Green Contracts

At SkootEco, we pride ourselves on being a cornerstone of support for solicitors eager to integrate sustainability into their contractual practices. Our mission is to provide bespoke ESG solutions that empower solicitors to turn sustainability challenges into opportunities for growth. Collaboration is at the core of our approach, ensuring that sustainability practices are seamlessly aligned with business objectives.

Unlike conventional ESG consultancies that deliver isolated reports, SkootEco embeds sustainability into the very fabric of businesses, transforming it from a mere compliance obligation into a catalyst for growth. This strategy not only addresses immediate ESG requirements but also paves the way for long-term economic development and business transformation.

We equip solicitors with invaluable resources, such as the Chancery Lane Project toolkit, which features over 100 climate clauses designed to implement sustainable practices across diverse sectors. By providing these tools, we ensure that solicitors are well-prepared to lead the charge in sustainable legal practices and drive the sustainability transformation forward.

### Challenges in Enforcing Green Contracts

Enforcing green contracts is not without its challenges. The novelty of ESG clauses and the complexity of supply chains that often span multiple jurisdictions can create significant hurdles. Broadly written ESG clauses may lead to interpretational disputes, as they often lack specific, measurable obligations. These ambiguities can complicate the enforcement process, making it difficult to hold parties accountable.

Proving damages related to breaches of ESG clauses presents another challenge. It requires specific evidence linking a supplier's actions to environmental damage, which can be difficult to obtain. The burden of proof in such cases often deters companies from pursuing claims, thereby undermining the effectiveness of ESG clauses.

Moreover, broader challenges such as political changes can significantly alter environmental policies, complicating the enforcement of ESG obligations. The fear of disrupting established supplier relationships may also deter companies from imposing stringent ESG requirements. Despite these challenges, the importance of enforcing green contracts remains paramount in the pursuit of environmental sustainability.

### Overcoming Barriers to Green Contract Implementation

Despite the challenges, there are strategies to overcome barriers to the implementation of green contracts. Contracts provide a flexible mechanism for organisations to start making immediate reductions in greenhouse gas emissions. Integrating sustainability clauses allows companies to take proactive steps towards environmental sustainability.

Effective stakeholder engagement is crucial in this process. Dialogue between public authorities and private companies fosters a collaborative environment for innovation. Engaging stakeholders ensures that sustainability efforts are supported and that there is a

collective drive towards achieving common goals.

Addressing the complexity of multi-jurisdictional supply chains and varying environmental regulations is also essential. Companies must conduct thorough due diligence and be prepared to navigate the intricacies of different regulatory frameworks. Adopting a strategic approach and leveraging the expertise of solicitors enables organisations to successfully implement green contracts and contribute to a more sustainable future.

### Future Trends in Green Contracts

Looking ahead, the landscape of green contracts is poised for significant evolution. The EU's Corporate Sustainability Due Diligence Directive (CSDDD) emphasises the need for binding obligations on businesses to consider environmental and social impacts. This directive is set to shape the future of green contracts, promoting greater accountability and transparency.

The EU's introduction of voluntary model contractual clauses aims to facilitate the implementation of ESG standards across various industries. These clauses provide a framework for companies to integrate sustainability into their operations, fostering a more sustainable business environment.

Regulatory frameworks will continue to play a crucial role in shaping green contracts, and encouraging businesses to adopt sustainable practices. The future possibilities are vast, with technology and innovation driving the transformation towards a more sustainable world. As businesses embrace these changes, green contracts will become an integral part of the global effort to address climate change and ensure environmental sustainability for future generations.

### Summary

In summary, green contracts represent a vital step towards achieving environmental sustainability in business practices. By incorporating ESG clauses, these contracts ensure that companies adhere to stringent environmental, social, and governance standards, addressing the pressing issues of greenhouse gas emissions and waste management.

Solicitors play a pivotal role in facilitating the adoption of green contracts, helping clients navigate the complexities of sustainability requirements. With the support of organisations like SkootEco, solicitors can integrate sustainability into contracts, transforming ESG challenges into growth opportunities.

Despite the challenges in enforcing green contracts, effective strategies and stakeholder engagement can overcome these barriers. Real-world case studies demonstrate the success of green contracts in promoting sustainability and enhancing supply chain management. As regulatory frameworks continue to evolve, green contracts will play a crucial role in shaping a sustainable future. By embracing these practices, businesses can contribute positively to the environment and ensure a better world for future generations.

Source: skoot.eco



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# THE LATEST MICROSOFT AI DEAL HIGHLIGHTS TIGHT LINKS IN AI SUPPLY CHAIN

EVAN SCHUMAN, CONTRIBUTOR

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**M**icrosoft's partnership with Nvidia and Anthropic continues the incestuous couplings that may force changes in how IT makes AI choices.

When Microsoft, Anthropic and Nvidia announced their latest partnership arrangement on Tuesday, analysts said that what appeared to give flexibility to IT buyers might instead complicate their choices.

"This partnership will make [Anthropic's] Claude the only frontier model available on all three of the world's most prominent cloud services. Azure customers will gain expanded choice in models and access to Claude-specific capabilities," the Microsoft statement said. "Anthropic is scaling its rapidly-growing Claude AI model on Microsoft Azure, powered by Nvidia, which will broaden access to Claude and provide Azure enterprise customers with expanded model choice and new capabilities. Anthropic has committed to purchase \$30 billion of Azure compute capacity and to contract additional compute capacity up to one gigawatt."

The statement also said, "Nvidia and Microsoft are committing to invest up to \$10 billion and up to \$5 billion respectively in Anthropic."

In an accompanying video, Microsoft CEO Satya Nadella said, "For us, this is all about deepening our commitment to bringing the best infrastructure, model choice and applications to our customers. And of course, this all builds on the partnership we have with OpenAI, which remains a critical partner for Microsoft, and provides more innovation and choice."

More choice or less?

But multiple analysts raised eyebrows, questioning whether this move will deliver more choice, or less.

Some said this partnership, along with similar efforts recently involving Oracle and Softbank, are reshaping some of the AI choices for IT leaders.

"A lot of CIOs are starting to question whether their current AI infrastructure choices will hold up in the long run. It's not just about picking a cloud provider

anymore. The lines between cloud, models, and hardware are blurring fast," said Sanchit Vir Gogia, the chief analyst at Greyhound Research. "This deal also reveals how tightly linked the AI supply chain has become, with cloud capacity, model availability, and silicon strategy now moving in lockstep rather than as separate decisions."

Gogia stressed that the potential purchase decision strategy changes could be much more significant.

"Here's the part that matters to CIOs: when you pick a model now, you're not just picking a model. You're picking a hardware path, a cloud footprint, and a cost profile that will shape how your AI projects scale or don't. Microsoft's move to integrate Claude into Foundry and Copilot isn't just about more choice. It signals a shift in posture. What used to be a one-model strategy is now moving toward a portfolio play. That gives buyers more options, but it also introduces more complexity," Gogia said.

He added, "there is also a deeper pattern emerging. The flow of capital, compute and model access between these companies is becoming circular in nature. Infrastructure vendors are funding the very AI labs that become their largest customers, which can blur the real economics for enterprises planning long-term budgets. You'll need stronger governance to keep those options manageable."

But another analyst said the new partnership highlights Anthropic's growing needs.

"Anthropic, like OpenAI, needs to hedge its bets across multiple XPU and GPU vendors," said Patrick Moorhead, CEO of Moor Insights & Strategy. "This is smart, as they can compare TCO across all the vendors over time and keep vendors hungry."

Forrester Senior Analyst Alvin Nguyen agreed, noting, "[because] Anthropic has partnerships with AWS and Google as well, I see this as a hedge to ensure they are not locked in to any single vendor. This also acts as a hedge for Microsoft and Nvidia to ensure they are not locked in too closely with OpenAI."

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Nguyen added that some of this is simply an admission that the soaring size increases of all of the key enterprise AI vendors makes such cross-pollination deals essential.

One player can't serve all AI demand

"No single vendor is able to satisfy the entirety of the demand for AI. Anthropic is at the size where their growth will be limited by staying with too few vendors," Nguyen said. "This brings concerns, [given that] virtually all major AI vendors are invested in each other. The ultimate take for enterprises is to not bet on any single one."

But even these partnerships don't necessarily make it easy to shift from one company to another. "The data egress costs start to cost quite a bit," Nguyen said.

But, Gogia added, the focus of this deal really should be on Anthropic.

"What this really shows is Anthropic continuing a very deliberate multi-chip strategy. They are using Nvidia, TPU v5 and AWS Trainium for different strengths, rather than trying to push everything through one platform," Gogia said. "Nvidia gives Anthropic stronger inference performance, wider enterprise reach, and access to an ecosystem that already powers most production AI deployments. The partnership also includes joint engineering on future Claude models for upcoming Nvidia architectures. That kind of co-design creates long-term benefits for both sides, but it does not replace Anthropic's reliance on TPUs or Trainium."

Gogia said that he doesn't see this deal as signifying Anthropic has chosen a winner in the AI battles. "It is Anthropic making sure it never becomes dependent on a single hardware source," he said. "GPU supply volatility, rising inference costs, and the scale of future models are all pushing the company toward a diversified compute strategy. If anything, this move signals to enterprises that the smartest AI builders are hedging across all major chip platforms, and that long-term resilience will require the same mindset."

He added, "Anthropic isn't cutting ties with other platforms. They're still working with Google's TPUs and Amazon's Trainium chips. That's a smart hedge. It also tells us something important: no single cloud or hardware vendor owns the future of AI infrastructure. We've also seen a jump in CIO involvement in AI hardware decisions. Nearly half of enterprise tech leaders are now weighing in directly on chip selection, which would've been unthinkable just two years ago. AI infrastructure is

no longer a back-end topic. It's a boardroom one."

Phil Smith, systems engineer for AI architecture for Substratos, said the technologies' capabilities and limitations were a powerful driving force behind this alliance.

"Frontier models saturate HBM [high bandwidth memory] bandwidth long before they saturate raw FLOPs. Nvidia and TPU memory topologies hit different limits, which makes diversification essential," Smith said. "And make no mistake: this does appear to be diversification. There is no mention of exclusivity." Smith also weighed in on whether this partnership involved choosing a winner, arguing that some elements suggest yes and other elements suggest the opposite.

On the "yes it was choosing a winner" side, Smith said, "by aligning so deeply with Nvidia's architecture on the hardware side, Anthropic is signaling that it believes Nvidia's platform will be a key winner for large-scale AI training and inference. The cooperation to optimize Anthropic's workloads for Nvidia future chips suggests a bet: that Nvidia's next-gen hardware will form the base of a major model deployment pipeline."

Smith added that Microsoft is "reinforcing their ecosystem — Azure + Anthropic — which leverages that same stack. This is classic vertical integration around a preferred hardware platform."

That said, Smith also noted some opposing points. "The AI hardware landscape remains highly competitive and multi-node. Many players, including cloud providers, chip vendors and custom ASICs are in play. Aligning with one major vendor doesn't exclude future diversification. Even here, Anthropic may not be publicly committing to only Nvidia, at least not in this announcement, though it's heavily biased. Microsoft and Anthropic still need to remain competitive with other ecosystems, including Google, AWS and custom chips, so a single-vendor alignment is risky if that vendor stalls or gets constrained by supply chain, regulation or export control."

"In effect, this is both a bet and a hedge. [Anthropic] is placing a big bet on Nvidia and Microsoft's stack, but likely still preserving some optionality," Smith said. "So yes: it is a strong signal that Nvidia is being bet on, but I'd avoid saying it is locked in. The war is not over yet."

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

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# THE LOGISTICS LEAP: HOW INDIA IS BECOMING THE WORLD'S NEXT SUPPLY CHAIN SUPERPOWER

SUNIL KUMAR, CEO EVERFAST FREIGHT FORWARDERS (P) LTD

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India is in the middle of a quiet revolution—one that's reshaping how goods move within and beyond its borders. Over the last few years, a combination of strong policy reforms, massive infrastructure investments, and rapid digital adoption has set the stage for India to emerge as the world's next big supply chain hub.

## A world looking for new supply chain partners

Global supply chains have been under pressure. The pandemic, geopolitical shifts, and trade tensions exposed how dependent many countries were on a handful of manufacturing centers. As companies look to diversify, India has stepped up as a serious contender—offering not just cost advantages but also scale, location, and capability.

India's logistics sector, currently valued at around USD 250 billion, is growing by 10–12% every year. Analysts expect it to reach nearly USD 380 billion by 2027, fueled by booming domestic consumption, expanding exports, and a strong government push toward efficiency.

## Policy reforms paving the way

Several key initiatives have accelerated this transformation. The National Logistics Policy (NLP), launched in 2022, aims to cut logistics costs to below 8% of GDP by improving coordination between different transport modes. The PM Gati Shakti platform digitally integrates 16 ministries, helping infrastructure projects align in real time to avoid overlaps and delays.

At the same time, projects like the Dedicated Freight Corridors are speeding up the movement of goods by shifting bulk cargo from roads to faster rail lines. The Sagarmala and Bharatmala programs are enhancing port and highway connectivity, linking India's heartland to global trade routes more seamlessly than ever before.

## Building the backbone: Infrastructure and warehousing

The physical face of India's logistics sector is changing fast. Modern ports, airports, and expressways are creating faster, more reliable

transport corridors. Multi-Modal Logistics Parks (MMLPs) are being developed to connect road, rail, air, and waterways—helping companies move goods more efficiently and sustainably.

The warehousing sector, too, is booming. With e-commerce and manufacturing on the rise, cities like Nagpur, Pune, Ahmedabad, and Lucknow are emerging as new logistics hubs, featuring large, tech-enabled warehouses that support both domestic and export supply chains.

## Digital transformation at the core

India's logistics leap isn't just about physical infrastructure—it's powered by digital innovation. Platforms like the Unified Logistics Interface Platform (ULIP) enable real-time data sharing between government systems and private players. Technologies such as AI, IoT, and blockchain are being used to predict demand, track cargo, and ensure transparency across the supply chain.

Startups like Delhivery, BlackBuck, and Freight Tiger are bringing fresh energy to the sector, offering smart solutions for route optimization, freight matching, and warehouse automation.

## The road ahead

Challenges remain—especially in last-mile connectivity, fragmented transport systems, and fuel costs—but the direction is clear. With logistics now central to India's growth story, the country is rapidly turning from a follower to a forerunner in global trade.

As the world searches for reliable, diversified supply chain partners, India's logistics leap is perfectly timed. Supported by policy, powered by technology, and anchored in infrastructure, India is well on its way to becoming the next global supply chain superpower.

**Disclaimer: The views expressed in this article are those of the author/authors and do not necessarily reflect the views of ET Edge Insights, its management, or its members**

Source: [etedge-insights.com](https://etedge-insights.com)



# HOW SUPPLY CHAINS NEED TO ADAPT TO A SHIFTING GLOBAL LANDSCAPE

- As geopolitical tensions and economic uncertainty reshape the global landscape, supply chains must evolve to remain competitive in a fragmented world.
- To thrive amid disruption, organizations must build adaptive, digitally enabled supply networks that prioritize diversification, agility, and long-term strategic readiness.
- The World Economic Forum and Kearney present four plausible global outlooks for the future of supply chains, each with distinct implications for trade, regulation and resilience.
- As 2025 unfolds, shifting trade dynamics and geopolitical tensions are reshaping the global order – and with it, supply chains. Amid uncertainty, business leaders and investors remain in a wait-and-see mode. This delays strategic commitments and capital investments, potentially impacting innovation. Prolonged uncertainty, however, should not cause decision paralysis. While clarity on geopolitical and economic trajectories remains elusive, businesses must act to keep supply chains moving.
- How can organizations make strategic supply chain decisions amid uncertainty and build readiness to adapt and execute when clarity emerges?
- In this article, the World Economic Forum and Kearney explore four plausible global outlooks that could unfold simultaneously. Each of these presents distinct operating environments for supply chains. The objective is to identify common priorities where near-term actions can enhance resilience and performance, regardless of the outlook.



Four outlooks take shape, driven by two global forces: Geopolitical Fragmentation and Global Economic Convergence (see figure). While divergence and misalignment between regions are likely, a cohesive global order remains improbable in the near term. Institutions such as the IMF, OECD and UN project continued growth headwinds amid rising global

uncertainty. This will dampen strategic planning and investment. In response, we must adopt a practical lens to define future outlooks reflecting real-world dynamics.

Four Plausible Outlooks: 2025 - 2027. Geopolitical Fragmentation (X axis): Reflects how nations cooperate or compete over diplomacy, trade and global institutions. A multipolar world keeps the fragmentation high to moderate as nations weigh efficiency against sovereignty over critical supply chains and national priorities. Global Economic Convergence (Y axis): Measures whether economies align towards stable, synchronized growth or diverge due to volatility and policy asymmetries. Ongoing shifts towards national policies such as the CHIPS Act signal an accelerating shift towards economic self-reliance and recalibrated global supply chains.

Each outlook presents distinct conditions that reshape how global supply chains navigate regulatory, technological and resilience challenges.

## Outlook 1: Reformed – Supply chains rebalance in a rules-based, multilateral world

Stabilizing the rules-based order recalibrates global supply chains. Trade agreements among the US, EU, India and key Asian economies, alongside a cooling of US-China friction, enable regulatory convergence, reduce tariff uncertainty and support selective cooperation on global challenges such as climate and public health.

Governments define frameworks for digitalization, sustainability and infrastructure resilience. Businesses accelerate investments in digitalization, automation and cyber-secure platforms to enable real-time visibility and offset the costs of localizing production. Workforce upskilling programmes enable management of next-generation systems.

Public-private boundaries blur further. Coordinated industrial policy, R&D funding and immigration reforms increasingly shape private-sector decisions. Many firms await clearer policy signals before investing, particularly in areas like energy transition, data governance and resource access.

## Have you read?

### Global Risks Report 2025

## Outlook 2: Fragmented – Supply chains scale selectively amid competing blocs and regulatory divergence

Global fragmentation deepens as industrial policies expand and protectionist measures surge, particularly in the United States, China and the EU. This focus on domestic priorities fuels isolationist sentiments,

weakening alliances and curtailing external aid programmes. Countries engage transactionally on more economic terms rather than on trust.

Supply chains reconfigure around shifting partnerships and competing spheres of influence. The West pursues reshoring and secure digital infrastructure. Emerging economic blocs in the Global South compete for influence by offering alternative technologies and financing packages. Resource nationalism and opaque bilateral deals drive volatility and input costs higher, forcing firms to localize, hedge through redundant supply networks or stockpile critical resources.

Regulatory fragmentation in climate, technology and data governance intensifies operational complexity as firms navigate overlapping standards and incompatible rules across competing regions. Labour strategies turn inward, limiting mobility and deepening skills mismatches. ESG reporting becomes hyper-local, rigorous in some blocs and diluted in others to attract investments.

#### Have you read?

##### **Beyond Cost: Country Readiness for the Future of Manufacturing and Supply Chains**

##### **Outlook 3: Volatile – Supply chains adapt for endurance in a world of uneven growth and softened tensions**

While geopolitical tensions moderate, volatile economic allegiances introduce a new kind of instability. Growth trajectories split, inflation patterns diverge and capital flows remain erratic, complicating global supply chain planning. Regions once tightly integrated begin to decouple economically. Some economies attract capital surges, fueling rapid technology adoption and infrastructure upgrades. Others face inflation spikes, currency volatility or debt constraints – limiting their ability to modernize or sustain supply chain reliability.

Trade corridors remain open, but weak fiscal coordination and rising interest rates delay infrastructure upgrades, customs harmonization and energy transitions. Technology adoption becomes increasingly uneven as digitally mature regions automate aggressively while undercapitalized economies struggle to replace legacy systems. This creates persistent chokepoints, supply chain blind spots and heightened cybersecurity exposure.

Organizations become cautious, delaying long term expansion and investment plans while awaiting clarity on trade, tax and sustainability mandates. ESG commitments fragment further in the absence of strong global enforcement, with firms maintaining minimal ESG compliance to meet expectations. Labour mismatches intensify as immigration tightens and upskilling lags technological demands.

##### **Outlook 4: Degraded – Supply chains recoil from conflict in a world of fading multilateralism**

Eroding trust in multilateral institutions and rising geopolitical conflict exacerbate economic distress and

unravel global supply chains. Nations prioritize control and security over efficiency and cooperation, triggering an era of deglobalization. Tariffs, embargoes and nationalization efforts trigger severe input shortages, causing firms to hedge through costly stockpiles or black-market sourcing, undermining transparency and predictability.

In conflict-prone and fiscally overstretched regions, infrastructure degrades and critical trade corridors become unusable or controlled by state or non-state actors, forcing rerouting through longer, more insecure pathways. Digital isolation accelerates amid capital constraints and cyberattacks, forcing firms to maintain ageing digital systems. Supply network visibility deteriorates, exacerbated by unreliable data and opaque logistics. Labour markets hollow out due to restricted migration, inadequate training and ageing population in high-income nations.

While multiple outlooks may unfold simultaneously across regions, one strategic imperative cuts across: supply chains must be designed to embrace uncertainty and respond with agility. In an era shaped by geopolitical shifts, regulatory churn, and climate volatility, supply chain competitiveness hinges on the ability to re-route, re-scale and re-align as operating conditions evolve.

Achieving this capability requires moving beyond traditional, one-dimensional approaches such as concentrated footprints or blanket reshoring strategies. Instead, businesses must architect globally distributed, digitally empowered supply ecosystems that embed flexibility and optionality by design. As underscored by the OECD's 2025 Supply Chain Resilience Review, the solution lies not in retrenchment but in re-architecting global networks to be more diversified, digitally enabled, and institutionally aligned.

The outdated notion that scale and agility are mutually exclusive is no longer tenable. Through modern network architecture, the two can – and must – coexist. This means rethinking scale itself: not as a centralized concentration of assets, but as distributed, dynamic capacity across the full global supply chain, enabled by real-time visibility and digital coordination.

#### Have you read?

• These 7 factors are reshaping the global manufacturing landscape

The conversation must now evolve beyond binary choices such as decoupling versus reshoring, towards sophisticated strategies for building intelligent, adaptive supply systems that deliver efficiency, resilience, and responsiveness across any global outlook. This shift requires a practical agenda. It needs to be centered around pragmatic enablers, collaborations, and investments. This will translate vision into concrete steps for global supply chain transformation.

Source: [www.weforum.org](http://www.weforum.org)

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# TOUCHLESS FORECASTING EXPLAINED; TOP TRANSPORTATION IT INVESTMENT TRENDS; MANUFACTURING OUTLOOK 2026 & OTHER GLOBAL LOGISTICS INSIGHTS

## NEW BUZZWORD, EXPLAINED: TOUCHLESS FORECASTING

**A**nother day, another new supply chain buzzword. This time, it's touchless forecasting—an AI-powered approach to demand planning that autonomously gathers, interprets, and analyzes large data sets to deliver precise forecasts with little or no human involvement. The objective is to build a fully automated system that adjusts in real time to market shifts, streamlines inventory management, and frees human planners to concentrate on exceptions and strategic priorities.

That's a mouthful, but it's catching on: Gartner recently predicted that 70% of large-scale organizations will adopt AI-based forecasting to predict future demand by 2030. "The value of AI-based forecasting includes improved strategic decision making, faster responses to market changes, and enhanced collaboration workflows," says Jan Snoeckx, Director Analyst in Gartner's Supply Chain practice. "To help drive successful adoption, planning leaders should clearly articulate a sense of urgency in pursuing touchless forecasting and place AI as a core element within their technology strategies."

While touchless forecasting remains limited today, Gartner recommends this five-part plan for implementation:

1. **Define a touchless forecasting vision:** Assess workflows, tools, and improvements for automation.
2. **Establish the business change parameters:** Redefine processes and metrics; prioritize change management.
3. **Define your touchless data strategy:** Expand data sources; ensure quality and governance.
4. **Create a technology enablement roadmap:** Invest in AI tools; align with data strategy.

**Plan for the adoption journey:** Build trust in AI forecasts through transparency and benchmarking.

**TRANSPORTATION'S EVOLVING ROLE :** Transportation is no longer just a cost center—more than ever, it's viewed as a competitive weapon for shippers and logistics providers. According to Descartes Systems Group's 9th Annual Global Transportation Management Benchmark Survey, a record 81% of respondents now view transportation as a differentiator in business growth and customer value—the highest level in the nine years of the survey.

The study, which surveyed 616 shippers and logistics service providers across North America and Europe, highlights both progress and persistent gaps in

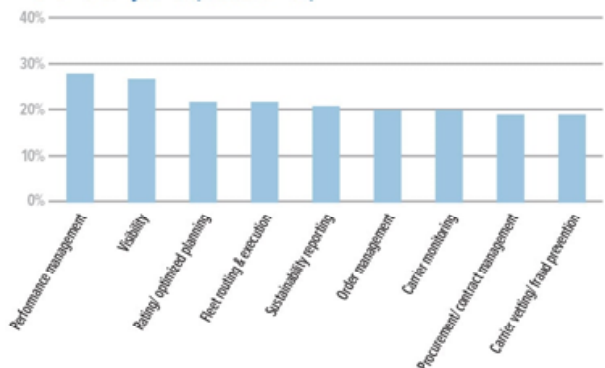
transportation technology adoption.

While transportation management systems (TMS) are recognized as essential, only 17% of respondents report being fully automated, and more than one third remain heavily dependent on manual processes. The divide is particularly stark when comparing leaders—51% of high-performing companies are fully automated—against laggards, where only 5% have achieved full automation.

Other key findings include:

- **AI adoption:** 96% of respondents report using generative AI in their operations, with top applications in data entry (41%), route/load optimization (39%), freight forecasting (35%), automated load matching (35%), and chat bots for customer service (34%).
- **TMS investment:** 80% plan to increase IT spending, prioritizing performance management, visibility, and fleet routing. (See chart below.)
- **Risk-management approach:** Carrier monitoring for insurance, safety, and fraud ranked as a top-three TMS capability, with North American companies placing 7% more emphasis on it than European peers.
- **Growth outlook:** 72% expect at least 5% annual revenue growth over the next two years.

Where will you make your greatest transportation IT investments in the next 2 years? (Select three)



Source: Descartes

## MANUFACTURING OUTLOOK 2026

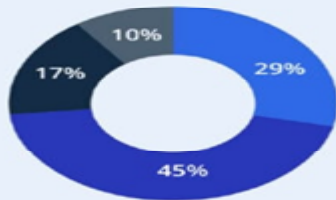
Global manufacturers will enter 2026 under intense pressure to modernize, adapt, and deliver in the face of relentless disruption, finds the 2026 Manufacturing Outlook Report from Xometry, Thomas, and Zogby

Strategies. Survey respondents—300 executives from the United States, U.K., and Europe—see technology, agility, and sourcing resilience as the defining forces shaping the industry's future.

The report identifies four central themes that are influencing the manufacturing industry in 2026: the acceleration of AI and digital tools; the growing demand for operational agility; rising customer expectations for quality and responsiveness; and the need for stable, flexible sourcing strategies. In addition, closing the talent gap to sustain innovation is one key challenge executives agree upon.

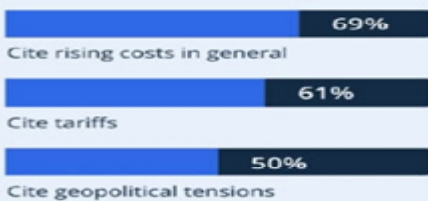
#### A need for stable sourcing strategies is boosting the reshoring trend:

Most manufacturers have reshored facilities or are doing so now.



- Have already successfully reshored at least some of their overseas facilities.
- Are currently undergoing plans to reshore overseas facilities.
- Have not initiated any plans for reshoring but have discussed it.
- Are not discussing reshoring their overseas facilities.

#### The top factors driving reshoring efforts globally are:



**Why it matters:** The supply chain is no longer just about moving goods; it's a competitive differentiator. From reshoring production to deploying AI at scale, manufacturers are investing heavily to meet customer expectations and navigate volatile global markets.

#### HERE ARE SOME KEY TAKEAWAYS FROM THE SURVEY:

**AI as a Growth Engine** 82% of executives view AI as a driver of growth 44% report significant ROI already from AI adoption 85% plan to invest over \$100,000 in AI initiatives in 2026 **Agility as the New Currency** 45% of executives plan reshoring 29% have already reshored facilities

**Customer-Centric Mandate** 54% note rising product

quality demands 46% cite faster delivery as a core expectation 43% of buyers now expect "Amazon-like" supply chain transparency

**Sourcing for Stability** 76% of global companies plan price increases in 2026, but 18% already face pushback from customers—making strategic sourcing crucial 84% will use new tech and partnerships to manage sourcing and pricing risks

#### HIGH-STAKES PEAK SEASON

##### For Consumers, Price is Everything

Looking ahead to peak season shopping, price is the most pressing consumer concern, ranking 3.5x higher than product availability.

##### Top Peak Season Concerns



Further, when asked what the reason for higher prices would be this peak season, consumers were nearly split on inflation and tariffs



As the holiday peak season approaches, two new surveys paint a clear picture of the challenges and opportunities facing ecommerce brands: consumers are laser-focused on price (see charts) and therefore, tightening their wallets, while brands scramble to navigate tariffs, rising costs, and increasingly demanding customer expectations. Together, the findings underscore a high-stakes environment where value, convenience, and supply chain execution will be crucial.

The surveys—Kenco's 2025 eCommerce Peak Season Pulse and Passport's Peak Season 2025 Playbook—offer insights from both sides of the equation: shoppers grappling with inflation, and retailers working to maintain margins while meeting customer demands.

#### CONSUMERS CUT SPENDING BUT DEMAND GREATER CONVENIENCE

Kenco surveyed consumers to understand how economic pressures are shaping holiday shopping behavior. The findings reveal a season defined by inflation concerns, demand for deals, and shifting expectations around delivery and returns:

- **Inflation and tariffs are cutting into holiday budgets:** 28% of consumers plan to reduce holiday spending, up 11% from 2024.
- **Price pressure dominates:** 58% say inflation is their top concern, compared to just 16% citing product availability.
- **Shoppers want deals and control:** 75% would choose slower, free shipping over paying for faster delivery. 57% say easy returns are the most influential shipping incentive. 72% call free return shipping the top return-related perk. 51% are willing to pay extra to guarantee a specific delivery window.
- **Visibility matters:** 58% want real-time delivery map tracking, while 37% want photo confirmation.

#### BRANDS BRACE FOR TARIFFS WHILE BETTING ON CROSS-BORDER GROWTH

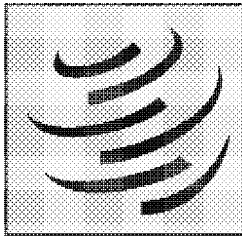
Passport, a global ecommerce solutions provider, partnered with Drive Research to survey 200 ecommerce leaders across the United States, U.K., and Canada. The research reveals how brands are managing tariffs, fulfillment challenges, and customer expectations heading into peak season. Here's what they found:

- **Tariffs reshape pricing:** 87% of brands have already raised U.S. prices to offset tariffs, and 99% say trade shifts are directly influencing peak-season planning.
- **International sales outlook remains bullish:** 96% expect cross-border orders to rise in Q4 2025 compared to 2024.

- **Execution risks are high:** only 31% of leaders are "extremely confident" in their ability to handle cross-border fulfillment.
- **Customer-first priorities:** 57% rank fast, reliable delivery as their top goal this season. 41% say shipping costs are a main focus, with many exploring in-country fulfillment. 37% cite customer satisfaction as their most important KPI.

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

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## WTO UPDATE

# WTO CHIEF CALLS ON INDIA TO LEAD GLOBAL TRADE REFORMS AMID SUPPLY CHAIN SHIFTS

TEAM ANGEL ONE

**W**TO urges India to champion global trade reforms amid changing supply chains, rising digital trade & opportunities in green commerce.

World Trade Organization (WTO) Director General Ngozi Okonjo-Iweala has called upon India to take the lead in reforming the global trade framework. With global supply chains evolving rapidly and digital trade surging, India is strategically poised to play an increasingly influential role.

### India Positioned to Drive Inclusive WTO Reforms

Speaking at the 30th CII Partnership Summit on November 14, 2025, WTO Chief Ngozi Okonjo-Iweala emphasised India's unique opportunity to lead reform discussions at the multilateral trade body. She stated global trade must remain rules-based, resisting a shift towards a power-centric model. India, she highlighted, is already benefiting from supply chain reorientation and growing interest in South-South trade.

She underlined the importance of correcting systemic imbalances while ensuring developing and smaller economies receive necessary support through a flexible and cooperative framework. Through strategic involvement, India could assist in making the WTO more effective and equitable for all its members.

### Digital and Green Trade Opportunities for India

With digitally delivered services currently valued at nearly \$5 trillion, growing at 6% to 8% annually, Okonjo-Iweala noted that India's digital strength gives it a competitive edge. Additionally, the global shift toward green trade offers another channel for growth where India has growing capabilities, particularly in

sustainable manufacturing and renewable sectors.

India's strong economic fundamentals and projected growth above 6% in 2024–25 further reinforce its potential as a reliable partner in reshaping global trade norms.

### Multilateralism Over Bilateral Fragmentation

The global trade chief reiterated the significance of strong multilateral institutions like the WTO in ensuring economic stability. While bilateral trade deals are on the rise, she cautioned that such arrangements cannot fully replace comprehensive global mechanisms. She stressed that inclusive global governance is essential to withstand challenges in a disrupted international environment.

### Addressing Legacy Trade Issues Constructively

Okonjo-Iweala acknowledged India's longstanding concerns such as public stockholding rights and unfulfilled trade commitments. Nevertheless, she urged nations to focus on constructive reform rather than persistently reliving past grievances. By doing so, the WTO could evolve into a more resilient trade institution, unlocking opportunities for all member states, especially developing ones.

**Conclusion :** WTO's appeal for India to lead trade reforms reflects its growing influence in global commerce. As global trade undergoes transformation, India's digital capability and economic strength place it in a powerful position to ensure inclusive and resilient growth for all stakeholders.

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

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# BRANCH NEWS

## VADODARA BRANCH

**PRELIMINARY ROUND OF YOUNG MATERIALS MANAGER COMPETITION HELD AT IIMM VADODARA BRANCH ON 9<sup>TH</sup> NOVEMBER 2025 :** IIMM Vadodara organized the Preliminary round of Young Materials Manager Competition 2025 with Theme being **"Supply Chain-Circular Economy"** on 9<sup>th</sup> of November 2025. The Competition began at around 10 AM with Participants from 6 Companies from in and around Vadodara taking over the show.

The participant Companies were as follow:

1. Gujarat State Fertilizers & Chemicals Ltd. represented by Mr. Nirav J. Malani & Mr. Hardik K. Patel
2. DCM Shriram Chemicals–Team 1 represented by Mr. Talha Siddiqui & Mr. Veera Swamy Kondepudi.
3. DCM Shriram Chemicals–Team 2 represented by Mr. Akashkumar Gandhi & Mr. Chandrodai Jangid.
4. DCM Shriram Chemicals–Team 3 represented by Mr. Parth Shah & Mr. Geetansh Soni
5. Aarti Industries Limited–Team 1 represented by Mr. Suman Sourabh & Mr. Lakshaya Verma
6. Aarti Industries Limited–Team 2 represented by Mr. Aamir Rangrej & Mr. Nadeem Hussain

Our Jury members and other Members present, were equally jubilant and encouraged the participants by showing them their positive and negative side of the contents. They also guided them on how to prepare themselves for this kind of competition and which all points are needed to be taken care of for such competition.

The competition was intense and every team tried to get over the others. The judges were also confused whom to declare winners as there was neck deep competition for the Winners Prize. In the end, our jury declared the Winners and Runners Up Prize which are as follow:

1. Winners: Mr. Parth Shah & Mr. Geetansh Soni from M/s. DCM Shriram Chemicals
2. Runners Up: Mr. Suman Sourabh & Mr. Lakshaya Verma from M/s. Aarti Industries Limited

**IIMM Vadodara Branch has decided to send Both the Teams to NHQ for their Participation in the Final Rounds of Young Materials Manager Award to be held in Ahmedabad on 28<sup>th</sup> November, 2025.**

Mr. Malay Mazumdar concluded with Vote of Thanks and also stretched upon how the competition has helped all the participants to brush their knowledge of what is going

on in the present scenario. He also put forth the need of young Materials professionals to come and join a Professional body like IIMM so that they can be groomed by such kind of activities being regularly held under the brand umbrella of IIMM by quoting his own experience.



**Participants & audience in the Preliminary Round of YMM Competition held on 9<sup>th</sup> of November, 2025.**



**Winners Trophy awarded to Mr. Parth Shah & Mr. Geetansh Soni from M/s. DCM Shriram Chemicals.**



**Runners Up Trophy awarded to Mr. Suman Sourabh & Mr. Lakshaya Verma from M/s. Aarti Industries Ltd.**

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## MUMBAI BRANCH

### 8th National Summit on Public Procurement, IIMM Mumbai

**Theme:** Transforming Public Procurement – Driving Efficiency, Transparency & Economic Growth  
**Date & Venue:** 19 September 2025, Holiday Inn, Mumbai

The Indian Institute of Materials Management (IIMM) Mumbai Branch successfully hosted the 8th edition of its biennial **National Summit on Public Procurement** on 19 September 2025 at the Holiday Inn, Mumbai. The one-day conference convened **125+ professionals** from India's public procurement ecosystem, including delegates from leading CPSEs and government entities such as **ONGC, BPCL, NPCIL, Mazagon Dock Shipbuilders Ltd., Indian Railways, NLC India, RCF, HPCL, SAIL, MRPL, Mahanagar Gas, and KRIBHCO (Hazira)**, alongside representatives from the private sector. The program featured **15 eminent speakers** spanning government ministries, regulators, municipal corporations, national laboratories, and industry leaders.

**Inaugural Session :** The Summit opened with the ceremonial lighting of the lamp, followed by a welcome address from **Mr. Swapnil Dubey**, Chairman, IIMM Mumbai Branch, who highlighted recent initiatives and forthcoming programs of the branch. **Mr. L. R. Meena**, National President, IIMM, addressed participants and announced the upcoming **IIMM National Convention** in Ahmedabad (end-November 2025). The National President also felicitated **Mr. Swapnil Dubey, Mr. Arun Mehta, and Mr. Alok Ranjan Sarkar**, Advisor, IIMM Mumbai, with President Medals for their contributions towards IIMM and Procurement fraternity.

**Guest of Honour, Mr. Prateek Goswami**, Additional General Manager, Central Railway, delivered a keynote on the scale and significance of public procurement globally and within Indian Railways. He underscored the macroeconomic relevance of public procurement as a sizable share of GDP and contextualized the Indian Railways' procurement outlay within national totals. He was felicitated by the IIMM National President.

#### Technical Sessions – Key Highlights

- **Procurement Reforms in Indian Railways:** **Mr. Kanwalpreet**, Executive Director (Railway Stores), Ministry of Railways, outlined recent reforms, including the **PPP-Make in India** push (July 2024), stronger **indigenization** of Global Tender Enquiry items, and **vendor development** outcomes (e.g., reduced import requirements for BLW and CLW). He also clarified current guidance on **e-Reverse Auction (e-RA)**—emphasizing that e-RA is **not** the default mode and should be applied selectively.
- **Government e-Marketplace (GeM):** **Mr. Krishna Murari**, Deputy CEO, GeM, shared **latest developments** on the platform with a focus on state procurement (notably **Uttar Pradesh and Uttarakhand**) and the evolving capabilities of the portal.

- **AI for Procurement & Contracts – Practical Perspectives:** **Mr. Kalprup Paul**, Senior Strategy Consultant, IBM, delivered a thought-provoking session on applying **AI and process mining** across the Procure-to-Pay lifecycle—diagnosing performance against key KPIs and recommending targeted improvements through **AI agents**.
- **Rated Criteria (QCBS) in Complex Civic Projects:** **Ms. Aruna Bhagwatula**, Design Consultant, Ahmedabad Municipal Corporation (AMC), presented a **case study** on applying **QCBS** to advance government objectives in **sustainability, innovation, and quality**—illustrated through a **375 MLD Sewage Treatment Plant** project.
- **Public Procurement in Scientific Institutions:** **Mr. Dinesh Kumar**, Stores & Purchase Officer, **CSIR–Indian Institute of Petroleum, Dehradun**, discussed the distinctive attributes of scientific procurement—specialized items, project and risk management, and typical challenges across national laboratories.
- **Enhancing MSME Participation:** **Ms. Nitisha Mann**, Deputy Director, **Ministry of MSME**, highlighted measures for effective execution of the **Public Procurement Policy for MSMEs**, including **Sambandh** portal reporting by CPSEs, **GeM–Sambandh integration** for data reconciliation, improved vendor databases with social-category visibility, and **filters for SC/ST and women-owned MSEs**. She also covered updates to exclusive item lists and new service categories for MSME procurement.
- **Competition Law & Public Procurement:** **Mr. Arvind Kumar**, Joint Director, **Competition Commission of India**, spoke on the **Competition Act, 2002** in the context of public procurement—objectives, legal framework, the importance of competition, and practical guidance on identifying and addressing **collusive bidding/bid-rigging**, including detection, prevention, reporting, and remedies.

**Panel Discussion – Centralised Procurement :** A high-energy panel examined **“Benefits of Centralised Procurement: Issues & Challenges.”** Panelists included **Mr. Syed Javed Ahmed** (ED, CMMG, SAIL), **Mr. S. Balachander** (ED, Internal Audit, HPCL), **Mr. Sanson T. Koleth** (GM & Procurement Leader, BPCL CPO – Marketing), **Mr. N. Murali** (CGM–Mech, CPD, ONGC), and **Mr. Atul Agarwal** (GM, Retd., NTPC). The discussion offered pragmatic insights on governance, standardization, analytics, stakeholder alignment, and value delivery at scale.

#### Knowledge Engagements and Delegate engagement

Post-lunch, **Mr. Sushanta Roy** (IIMM Mumbai) conducted a lively **MCQ-based quiz** on procurement and contract management using an interactive digital tool—keeping delegates engaged while reinforcing key concepts. Presentation decks from speakers who consented to share were subsequently made available on the **IIMM Mumbai website**.



**Launch of the Innovation Awards :** A total of 12 nos. of entries were received for Innovation Awards Competition from various PSU's and Government Organisations. The evaluation was done by a team of Jury Members, consisting of Mr. Joydeep Roy – Ex. CPO HPCL, Mr. K.P. Kotwal – Ex. Head Procurement, L&T Hydrocarbon, Mr. Girish Pai – Ex. Procurement Leader MDL / L & T, Mr. Karthik Kumar Balan- Head Supply Chain Excellence , Ultratech.

This edition marked the inaugural **Innovation Awards**, introduced to spotlight high-impact practices in public procurement. After competitive evaluation, the awards were announced by Chairman **Mr. Swapnil Dubey**:

- **Winner: Northern Railway** – Strategic Development of Sub-Zero Climate Clothing Kits (–20°C) for Railway Personnel in the Kashmir Valley (Presenter: **Mr. Sandeep Kumar Singh**, Dy. Chief Materials Manager).
- **First Runner-Up: BPCL, Sewree (CPO–Marketing)** – System-Driven Reduction of SLA Time for Gas Projects Using Process Analytics (Presenter: **Mr. Varun Sharma**, CEC In-Charge).
- **Second Runner-Up: BPCL, Kochi Refinery** – In-House Development of the Tender Document Creator Application (Presenter: **Mr. Binumon B.**, Procurement Manager, CPO–Kochi).

**Acknowledgements :** The day-long proceedings were seamlessly anchored by **Mr. Surendra Deodhar**, NC Member, IIMM Mumbai. A hallmark of IIMM Mumbai's hospitality, the coordinated reception and assistance for outstation speakers from arrival to departure—was upheld by the **Hospitality & Welcome Team** and the **Branch Office**. Delegates and speakers shared **highly positive feedback** on content quality, organization, and engagement.



The Summit's success reflects the collective effort of the **Core Committee** led by **Mr. Swapnil Dubey** (Chairman), with **Mr. Veersen Sidhwani** (Vice-Chairman), **Mr. Alok Ranjan Sarkar** (Advisor), **Mr. Arun Mehta** (Treasurer), **Mr.**

**Ajoy Sarkar** (Ex-Hon. Secretary & EC Member), **Mr. Sudesh Joglekar** (EC Member), **Mr. Nipun Jain** (EC Member), **Mr. Sushanta Roy**, **Mr. R. B. Menon** (Dy. Director, IIMM Mumbai), **Ms. Gauri Naik** (Admin Executive), and **Mr. Rajesh & Mr. Arun Rajkumar** (Admin Assistants).

#### Feedback from Delegates about the event:

- "The session was interactive & informative. Good content & information."
- "The insights delivered by the intellectuals regarding the core function for which the event was organised"
- "Information on latest reforms / modalities in public procurement"



## KOLKATA BRANCH

**New Members Meet & Vijaya Sanmilani 2025 held on 01.11.2025 :** As per the tradition of our Institute, Membership Subcommittee of IIMM, Kolkata Branch organized a program "New Members Meet and Vijaya Sammilani" on Saturday, 1<sup>st</sup> November, 2025 at 5:00 p.m. at IIMM Hall, Kolkata.





Next part of our program was felicitation to the New Members and the participants in the Cultural Program. Kits were handed over to the new members by our Executive Committee Members. Vote of thanks given by Mr. Joydip Basak, Hony. Treasurer. The program ended with Tea & snacks.

Indian institute of Materials Management Ludhiana Branch organised a half day seminar on Innovative and integrated Supply chain Strategies at Chamber of Industrial and Commercial Undertakings CICU. Mr S.K.Sharma Former National President -IIMM and Former Head Supply Chain and Planning Control, Swaraj Group of industries was a keynote speaker. Main focus was on Innovative approach on cost reductions, quality improvement and inventory management for ensuring uninterrupted supply to production and end customer. Mr Srivastava Branch Chairman welcomed the delegates and emphasized on continuous learning the latest techniques of SCM. Mr Munish Garg N C introduced about IIMM and motivated delegates to join IIMM as members and Students. Mr Shatija NC and Mr Gagan Gen Secretary thanked the delegates. More than 60 delegates from various industries participated.

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Indian Institute of Materials Management, Chandigarh Branch Has Organized Its 40th Annual Day Celebrations, One Day Seminar and Awards Ceremony on Thursday, Nov 06 2025 at Hotel Radisson, Patiala Road Zirakpur. App. 100 Professionals from Chandigarh Tricity, Baddi, Ludhiana and Jaipur etc attended the Seminar.” Chief Guest Mr. Anurag Rastogi, IAS, Chief Secretary, Govt. of Haryana, emphasized the significance of cost competitiveness and seamless supply chains, stressing that these elements are crucial for achieving success in today's business.



Following Awards Were Presented to Recognize Outstanding Organizations and Individuals Who Have Implemented Exceptional Practices In Their Industry." Texla Plastics & Metals P Ltd, Ludhiana (Pb) - Outstanding Enterprise Award 2025. "Godrej & Boyce Mfg. Co. Ltd, Mohali -- Best Practices In Promoting Green Supply Chain Award 2025."

Mr. Maninder Nanda, Aerial Telecom Solutions, Mohali (Pb) Outstanding CEO Award 2025 – MSME Service Sector." Mr. Kanish Khanna K-India, Baddi (Hp) --- Outstanding CEO Award 2025-Msme Manufacturing Sector." Windsor Industries P Ltd Kurali, Dist Mohali (Pb) - Creativity & Innovation Excellence Award 2025. "Amba Traders Chandigarh-- Outstanding Small Scale Enterprise Award 2025." Conference Featured Six Technical Sessions, Led By Distinguished Speakers, "Mr Anuj Magazine on The Intelligence Factory - Reimagining How Organizations Learn and Produce."

Mr. Pankaj Gupta - Reimagining Supply Chain Potentials: Building Trust and Unlocking Missed Opportunities." Ms Tamanpreet Kaur- Unmute Your Mind"- From Stress to Strength, "Rohit And Shubam of Godrej -Reimagining Supply Chain Innovation for Next Decade.", "Group Captain Dr Rajnish Kumar - Public Procurement In the Armed Forces." "Mr Sunil Attri DGM Bharat Electronics Panchkula spoke on-Cyber Crime and Prevention" These Sessions Provided Valuable Insights and Expertise in These Critical Areas.

## BANGALORE BRANCH

**31<sup>st</sup> October 2025 – Monthly Lecture Program: The Indian Institute of Materials Management (IIMM), Bangalore Branch**, conducted its Monthly Lecture Program / Free Webinar on the topic **"SCM Challenges in the Indian Aerospace Industry."** The session was led by **Dr. P. G. Yogindra**, Executive Director (Retd.), HAL, a respected expert in aerospace supply chain management.

The program commenced with an overview of **IIMM's educational and professional initiatives**, presented by **Mr. G. Balasubramanian**, Course Coordinator. **Mr. Karunakar C., Branch Chairman**, welcomed the participants and formally introduced the distinguished speaker.

The webinar was **well-received**, marked by **engaged participation and interactive discussions**. Dr. Yogindra provided deep and insightful perspectives on the current **supply chain management (SCM) challenges** faced by the Indian aerospace sector. Key issues highlighted included:

- Heavy dependence on imported raw materials
- Limited availability of **domestically produced specialized components**, such as composites and avionics
- **Extended qualification and testing timelines**, often delaying project execution
- **Complex regulatory frameworks**, impacting procurement and certification processes

Dr. Yogindra also shed light on additional systemic challenges, such as the **fragmented supplier ecosystem**, the urgent need to accelerate **digitalization and automation**, and the importance of **workforce development** to strengthen India's skilled talent pool in aerospace manufacturing.

Overall, the session offered **valuable insights and practical perspectives**, contributing significantly to the understanding of SCM issues in India's rapidly evolving aerospace industry.

**2<sup>nd</sup> November 2025 – Induction Session on ACSCM : The Indian Institute of Materials Management (IIMM), Bangalore Branch**, conducted an Induction Session on **2<sup>nd</sup> November 2025** for the **34<sup>th</sup> Batch of the ACSCM course**. The session was led by **Mr. G. Balasubramanian**, who provided a comprehensive overview of the **course syllabus, faculty structure, class schedule, assessment methods, and examination process**.

The induction helped students gain **clear understanding and clarity** regarding the course framework and expectations. The participants expressed their **appreciation for the informative and well-structured session**, which set a positive tone for the commencement of their academic journey.

**7<sup>th</sup> November 2025 – Monthly Lecture Program/ Free Webinar : The Indian Institute of Materials Management (IIMM), Bangalore Branch**, organized its Monthly Lecture Program / Free Webinar in association with **Vedanta Bharati**, on **"Inner Awareness – The Path to True Wisdom and Self-Realisation"** on **7<sup>th</sup> November 2025 at 6:30 PM** via **MS Teams**. The session was delivered by **Dr. Thimappa Hegde**, MBBS, MCh (Neurosurgery), a distinguished medical professional and renowned speaker known for his profound insights on human consciousness and personal growth.

The program commenced with a warm welcome and speaker introduction by **Mr. G. Balasubramanian**, Course Coordinator, IIMM. He highlighted Dr. Hegde's rich experience in neurosurgery and his unique ability to



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blend scientific understanding with spiritual perspectives on self-awareness and human potential.

Dr. Hegde's lecture was **highly insightful and thought-provoking**, focusing on the importance of inner awareness in achieving genuine wisdom and self-realisation. He elaborated on topics such as:

- The relationship between **mind, consciousness, and self-perception**
- How inner awareness influences decision-making, emotional balance, and personal fulfilment
- Practical approaches to cultivating mindfulness and self-reflection in day-to-day life
- The role of neuroscience in understanding spiritual growth and human behaviour

His presentation was enriched with **real-life examples, scientific explanations, and reflective observations**, which kept the participants deeply engaged throughout the session.

The webinar witnessed an enthusiastic turnout, with **around 65 participants** from diverse professional backgrounds. Attendees expressed **excellent feedback**, appreciating not only the depth of content but also the clarity, inspiration, and relevance of the session to both personal and professional development.

The program concluded on a positive note, reinforcing IIMM's commitment to offering enriching knowledge-sharing platforms for continuous learning and holistic growth.

**15<sup>th</sup> November 2025 – Workshop:** The Indian Institute of Materials Management (IIMM), Bangalore Branch, successfully organized a one-day workshop on **"Efficient Stores and Inventory Practices for Cost-Effective Operations"** on 15th November 2025 at Paraag Hotel, Raj Bhavan Road, Bangalore. The program witnessed active participation from around 18 professionals representing diverse industrial sectors, reflecting the growing importance of effective materials management in modern business environments.

The workshop commenced with a warm welcome address by **Mr. Karunakar C. S., Branch Chairman, IIMM Bangalore**, who emphasized the critical role of stores and inventory management in optimizing operational costs and enhancing supply chain efficiency. He acknowledged the enthusiasm of the participants and highlighted IIMM's continued commitment to industry-oriented learning initiatives.

Following the inaugural remarks, the sessions were led by senior and highly experienced faculty members **Mr. G. Balasubramanian** and **Mr. E. Ganesh Kumar**. Their sessions covered a wide spectrum of topics, including best practices in stores management, modern inventory control techniques, cost-reduction strategies, and the application of industry tools for operational efficiency. The workshop was well-structured, interactive, and enriched with real-world examples, making the learning experience highly insightful and practical for the participants.

Throughout the program, members of the Executive Committee—**Mr. P. G. Yogindra (Course Coordinator)** and **Mr. Sampath Raghavan (Faculty and EC Member)**—also engaged with the participants, facilitating discussions, addressing queries, and sharing additional perspectives from their professional experience.

The sessions received excellent feedback, with participants appreciating the depth of knowledge shared, the practical orientation of the content, and the overall smooth conduct of the workshop. Many attendees expressed interest in participating in future programs organized by IIMM Bangalore.

The workshop concluded with a vote of thanks, acknowledging the contributions of the faculty, organizers, and participants in making the event a resounding success.

**22<sup>nd</sup> November 2025 – Monthly Lecture / Free Webinar:** The Indian Institute of Materials Management (IIMM), Bangalore Branch, successfully conducted its Monthly Lecture / Free Webinar on **"Practical Utilities for Manufacturing: AI Agents & Workflow Automation in Recruitment and Contract Management"** on 22nd November 2025 through the MS Teams online platform. The webinar was open to IIMM members as well as supply chain management professionals, attracting enthusiastic participation from various sectors of the industry.

The session began with a warm welcome by **Mr. G. Balasubramanian, Course Coordinator**, who greeted all participants and provided a brief overview of the topic's relevance in today's rapidly evolving digital manufacturing landscape. He also introduced the distinguished speakers for the event.

#### Speakers & Session Highlights

**1. Ms. Swapna Basa : Founder & Managing Director, Strat IT Now** Ms. Swapna Basa delivered an insightful and engaging session on the core theme, explaining how AI agents and workflow automation are transforming the manufacturing ecosystem. She elaborated on:

- Practical AI applications in recruitment processes
- Automation tools for managing contracts
- Efficiency improvements due to AI-driven workflows
- Real-life use cases demonstrating measurable benefits

Her presentation provided participants with a clear understanding of how digital tools are reshaping operational efficiency and decision-making in manufacturing organizations.

**2. Mr. Venkat :** Following Ms. Basa's session, **Mr. Venkat** addressed the participants on the broader topic of Human Management and AI Systems. His talk explored the synergy between human intelligence and artificial intelligence within modern enterprises. He also conducted an interactive quiz, which added an element of engagement and allowed participants to test their understanding of the concepts discussed.

**Participation & Feedback :** The webinar was highly appreciated by the attendees, who found the sessions informative, well-structured, and relevant to present-day manufacturing challenges. The interactive format and practical examples shared by the speakers made the session especially valuable.

Participants expressed excellent feedback, acknowledging both the quality of the content and the smooth organization of the event by the IIMM Bangalore Branch.

**Conclusion :** The program concluded on a positive note, reinforcing IIMM Bangalore's ongoing commitment to professional development and knowledge sharing within the materials management and supply chain fraternity. The branch looks forward to hosting more such insightful sessions in the future.

**23<sup>rd</sup> November 2025 –Special Get together Meeting:** The Indian Institute of Materials Management (IIMM), Bangalore Branch, held a special get-together meeting on 23rd November 2025 at Paraag Hotel, Bangalore at 7.00 pm. The gathering was graciously hosted by **Mr. P. M. Biddappa**, the newly elected National President of IIMM (2025–2027), and **Dr. P. Sengottaiyan**, the newly elected Vice President (South) for the same term. The event was organized as a gesture of appreciation, unity, and camaraderie, bringing together Past Chairmen, Executive Committee Members, and Faculty Members of the IIMM Bangalore Branch.

The program commenced at 7:15 PM with a warm welcome extended by **Mr. Karunakar C. S., Branch Chairman, IIMM Bangalore**. He greeted the dignitaries and participants and presented a bouquet to **Mr. P. M. Biddappa**, National President, and **Dr. P. Sengottaiyan**, Vice President (South), marking the formal beginning of the evening. Mr. Karunakar also extended his heartfelt welcome to all Past Presidents, Past Chairmen, Executive Committee Members, and Faculty Members present at the event.

During his address, he engaged in a brief and meaningful interaction with the National President and Vice President (South) regarding their strategic vision, future initiatives, and developmental plans for the growth and strengthening of IIMM across the country.

Following the welcome address, the Executive Committee members collectively honoured both **Mr. P. M. Biddappa** and **Dr. P. Sengottaiyan** in recognition of their leadership, contributions, and newly assumed responsibilities. The atmosphere was filled with appreciation and respect, reflecting the strong bond within the IIMM fraternity.

In continuation, **Mr. Biddappa** and **Dr. Sengottaiyan** addressed the gathering, expressing their gratitude for the warm reception and reaffirming their commitment to advancing the mission and objectives of IIMM. They underscored the importance of collaborative leadership and the involvement of all stakeholders in shaping the future direction of the organization.

Mr. Karunakar C.S. Branch Chairman, subsequently invited the esteemed National President, Mr. P. M.

Biddappa, and Dr. P. Sengottaiyan (VP–South). Together, they honoured the past presidents—Mr. C. L. Kapoor, Mr. J. N. Mallya, and Mr. C. Subbakrishna—and adviser Mr. S. B. Lovekar, who were then invited to share their thoughts.

- Mr. C. L. Kapoor,
- Mr. J. N. Mallya
- Mr. C. Subbakrishna
- Mr. S.B. Lovekar

shared their thoughts, reflections, and suggestions for the continued progress of the institution. Their remarks added historical depth, wisdom, and valuable perspective to the meeting.

Further, **Mr. S. B. Lovekar**, Senior Adviser of IIMM, was invited to address the gathering. He shared valuable insights on strengthening professional development, member engagement, and sustaining the legacy of IIMM.

On this occasion, all our esteemed seniors—**Dr. Yogindra P. G.**, **Dr. A. V. Shama Sundar**, and **Dr. D. Lakshmaiah**—were ceremoniously honoured by the Branch Chairman and the Executive Committee in recognition of their recent achievement in securing their Doctorate degrees. Their dedication, academic excellence, and valuable contributions to the field were wholeheartedly acknowledged and celebrated during the event.

The evening transitioned into a relaxed and enjoyable fellowship session, accompanied by light music that enhanced the ambience and camaraderie among the attendees. Members engaged in informal discussions, networking, and shared nostalgic moments, celebrating the unity and strength of the IIMM Bangalore Branch.

The event concluded with a delicious dinner, adding to the pleasure of the gathering and providing an enjoyable end to a memorable evening.

The special get-together proved to be an enriching and heartwarming event, strengthening relationships among past and present leaders of IIMM Bangalore Branch. It not only celebrated the achievements of the newly elected national leadership but also served as a platform to reflect on the institute's legacy and chart the path forward. The IIMM Bangalore Branch looks forward to more such collaborative and inspiring gatherings in the future.



*Addressing by Mr. J.N. Mallya, Past National President*



*Addressing by Mr. S.B. Lovekar, Past BOS and Adviser of IIMM*



## CHENNAI BRANCH

### REPORT ON 24-10-2025 EDP PROGRAMME ON NEGOTIATION SKILLS,

**Venue AOTS Hall 3 Flr Chateau D Ampa Building, NM Road, Ch-34.**

One day EDP Programme on Negotiation Skills was conducted at AOTS Hall third floor below IIMM Office. It had a total of **18 participants** from organizations like Super Auto Forge, Wheels India, Delphi TVS, Brakes India, ILFS ( Organization wise participation is enclosed)

The programme was inaugurated by **Mr.V. Ramachandran, coordinator corporate program**. In his welcome address, **Mr.S.Balachandran Chairman EDP committee** provided the need for building Negotiation skill in purchasing. He quoted with practical examples of the outcome of effective and ineffective negotiations in actual business. The first session began with detailed coverage on the fundamentals of negotiation in supply chain management. Aspects like team principles, need for year-on-year purchase price reduction due to competition were stressed. **Mr. Mr.K. Nagappan senior Vice President Medway Hospitals**, facilitated this session.

**Mr. T.A.B.Barathi Sr.VP SCM from Wheels India** conducted an informal session highlighting the practical concepts in purchase negotiation. Importance of preparation

prior to negotiation and understanding the supply market condition in depth were stressed by him.

The afternoon session began with the focus on understanding the supply positioning strategy in depth.. This supply positioning matrix in the supply risk versus expenditure incurred for each of the four quadrants of routine, bottleneck, critical and leverage items were elaborated with examples.

The last session focused on a case study discussion on Shein -Reliance collaboration to introduce fashion wear products in India. Participants carried out case discussion in 4 groups and elected a leader to further represent them. In the next round, the chosen leaders discussed reflecting how large group negotiations are carried out in real business. The programme closed with post test assessment & review conducted by **EDP sub committee Chairman Mr.S. Balachandran**.

### Action plan arising out of 24<sup>th</sup> Oct Negotiation skills EDP Program

#### Area that can be retained

- 1) Topics and sessions
- 2) Making the participants to do micro teaching
- 3) Role play and Delphi techniques as learning activity
- 4) Informal sessions in introducing the topic.
- 5) Facilitating performance feedback using group discussion
- 6) Pre and post test with more questions about 25

#### Are as Needing Improvement

- 1) To include more learning activities
- 2) Showing more concepts with illustration supported by experience sharing
- 3) Redesign the programme more towards learner centric
- 4) Expansion programme text material in depth and relating to it (IPSCM pattern)
- 5) Major restructuring of catering arrangement for programs

#### Areas to be avoided altogether

- 1) Equipment used for the program under no circumstance should fail like sound system & mike.
- 2) Faculty need to have adequate voice & classroom control
- 3) All sessions need to be tight and interactive and slackness to be avoided.

Based on above observations, the following improvement to be proposed.

1. Major restructure of hosting and catering arrangement
2. Ensuring foolproof Audio- video equipment
3. Full compliance to SOP
4. Pre-approved program material text
5. Inclusion of additional learning activities and videos



The One day programme will have following structure:

Session	Module	Duration(min)
1.	Pre test and post test 25 questions	30
2.	Subject introduction	30
3.	Core concepts 1 and 2	90
4.	Application of skills 1 and 2	90
5.	Learning activity case study	45
6.	Learning activity Table group	45
7.	Closing session	15
8.	Q/A session and feedback	15
9.	Total training time	360
10.	Break times 15 min tea two times 45 min lunch	75
	Contingency	15
	<b>Grand Total</b>	<b>450 min</b>

Our schedule starts at 9.30 hrs and ends at 17.00 hrs i.e 450 minutes

### Training Report for MMR – Materials Management Review

#### Enhancing Spare Parts Management Excellence – IIMM Chennai's Comprehensive Training Programme

**21st November 2025** : The Indian Institute of Materials Management (IIMM), Chennai Branch, successfully conducted a full-day professional training programme on **Spare Parts Management**, bringing together practitioners from supply chain, maintenance, and operations. The programme aimed to strengthen competencies in planning, forecasting, inventory control, and modern digital tools that support equipment reliability and operational readiness.

**Programme Essence and Industry Relevance** : Spare parts availability plays a decisive role in ensuring equipment uptime and production continuity. Recognizing this need in asset-intensive sectors, the programme was designed to cover the complete lifecycle of spare parts—from foundational concepts to technology-enabled modern practices. Each session was delivered by experienced faculty, offering both conceptual clarity and workplace-oriented insights.

**Key Learning Highlights** : The programme commenced with an insightful introduction by **Ms. TAB Barathi**, who emphasized the strategic importance of spare parts in productivity, cost efficiency, and asset performance.

**Classification of Spare Parts**: **Mr. P. Y. Venkateswaran** explained capital, insurance, consumables, and fast-/slow-moving categories, highlighting how structured classification supports stocking decisions and risk mitigation.

**Planning & Forecasting Techniques**: **Mr. Venkateswaran** also detailed demand forecasting, lead-time analysis, and criticality assessment, enabling participants to apply systematic approaches for improving service levels.

**Inventory Control for Spares**: **Mr. N. Swayambhu** presented EOQ, Safety Stock, and Reorder Point concepts, demonstrating practical methods to balance availability with cost optimization.

**Storage, Preservation & Obsolescence**: He further guided participants on preservation techniques, environmental care, and managing obsolete items, reinforcing the importance of effective store practices.

**Modern Practices in Spare Parts Management**: **Mr. L. Krishnan** introduced ERP and CMMS applications, RFID/barcode-based tracking, and VMI, underscoring how digital tools enhance accuracy, visibility, and responsiveness.

**Industry Application & Field Insights**: A key highlight was the practical session by **Mr. U. Ravichandran**, Regional Leader – Physical Asset Management, ZF CVCS India Ltd., who illustrated system-driven maintenance planning, real-time tracking, and digital integration in modern maintenance environments.

**Strategic Perspectives**: The programme concluded with an address by **Mr. K. N. Alavandar**, who shared strategic insights on digitalisation, analytics, and the evolving role of integrated systems in materials management.

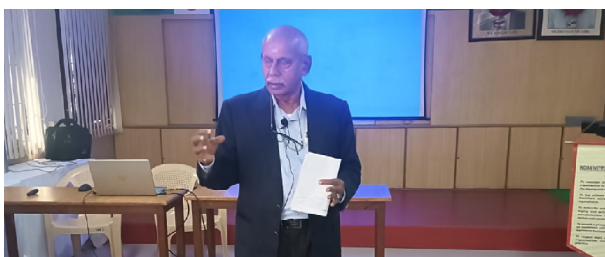
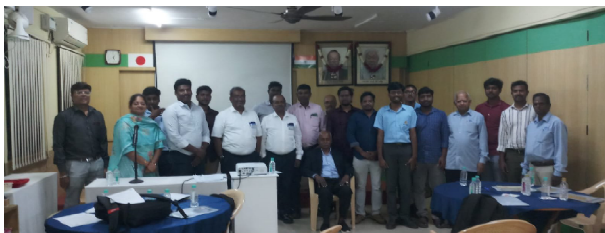
#### Impact and Key Takeaways

Participants appreciated the structured flow, expert-led delivery, and practical case discussions. Key learnings included:

- Clear understanding of spare parts classification and criticality
- Practical forecasting and planning approaches
- Effective use of inventory control models
- Exposure to ERP, CMMS, RFID and VMI tools
- Real-world insights into spare parts governance and digital workflows

The Spare Parts Management programme by IIMM Chennai delivered significant value by combining theoretical concepts with practical industry insights. As industries accelerate their digital transformation journeys, such capability-building initiatives play a vital role in preparing professionals for future-ready materials and maintenance management.





## 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.



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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

M: 09818464359

Email: [crimm.sureshiimm@gmail.com](mailto:crimm.sureshiimm@gmail.com)

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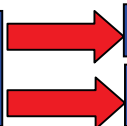
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