Shri H K Sharma, National President - IIMM felicitated CEO and MD of Tata Steel, Shri TV Narendran with ‘Best CEO of the year 2022 (Private Sector)’ during award ceremony held in Jamshedpur on 22nd May 2023
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From the Desk of Chief Editor & National President

5th June, the World Environment Day, a United Nations Environment Program since 1973, is the largest global platform for addressing environmental issues to millions of people across the world. One may get surprised to know that, an estimated 7 million people die each year from causes related to Air pollution. The theme for this year’s World Environment Day program is “Beat the Plastic Pollution” and is jointly hosted by Côte d’Ivoire and the Netherlands.

The use of plastics has increasingly resulted in environmental degradation because of its chemical properties and non-degradable nature. Micro-plastic gets further migrated to the environment, eventually affecting us and our ecosystem. Even, food containers made of plastic contain chemicals, which can mix with food and enter our systems. Major ailments like cancer or birth deformities are linked to it.

The next big thing is to address the question ‘how’ to beat the plastic pollution and the key here is Plastic Sustainability. Almost every industry small or big including construction, aerospace, electronics, automotive, furniture, medical, food, drink, sports, education, leisure and agriculture is reliant upon plastics to enable trade and economic development. To achieve plastic sustainability, we need to adopt concept of plastic circular economy i.e. use, re-use, re-cycle and recover thereby ensuring that the leakage of plastic to wider environment is minimum. Further, re-use and re-cycle will ensure that minimum virgin material is being used in making new plastic items.

Phasing out plastics is a lengthy, cumbersome and costly proposition and requires comparing the full lifecycle costs of plastic products and their alternatives. This will give us a clear picture for coming up with better deliberations and decisions. Interventions & Innovations are needed at every stage of the plastic lifecycle to stop the leakages to environment and increase plastic sustainability.

Besides plastic pollution, Air Pollution is another big challenge that poses serious threat to mankind. With the growing virtue of e-commerce and parcel delivery business, the fear of increase in carbon emissions manifold looms large. As per the reports of International Network, Clean Mobility Collective (CMC) and Standard Earth Research Group (SRG), the e-commerce and parcel delivery business will cause 80 lakh ton of carbon emission by 2030. Therefore, it is necessary for e-commerce and parcel delivery businesses to chalk out a roadmap to reduce the carbon footprints on environment.

The environmental concerns in the 21st century have prompted the entire global supply chain to think beyond cost-effectiveness and customer satisfaction and start taking active steps to protect the environment like never before. No doubt we are running against the time to protect our mother earth but it is also true that, whatever, we have done so far is not sufficient enough to reverse the damage already caused.

Recent years of USA defaulting on payment and slow down witnessed in the largest economy of Europe i.e. Germany and continuing Russia – Ukraine was are causes of concern for SCM professionals and the lessons learnt regarding agility and resilience in supply chain continue to be relevant. In totality, very challenging times are a head for SCM Professionals.

I am happy to apprise you that, Mr. T V Narendran, CEO, TATA Steel has been conferred upon with the ‘BEST CEO’ (Private Sector) Award of the year 2022 by IIMM for his achievements and accomplishments during his journey with TATA Steel. I wish him greater success in his career.

H. K. SHARMA
mmr@iimm.org
MATERIALS MANAGEMENT REVIEW

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14 PRINCIPLES OF PROCUREMENT SUSTAINABILITY

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Introduction: Sustainability is a Societal Goal with three dimensions: the Social, Economic and Environmental Dimensions. This concept can be used to guide all the procurement-related decisions and processes and gain benefits for long term on sustainable basis.

Sustainable procurement refers to how businesses can integrate principles of sustainability into the company’s procurement policy & processes by identifying and reducing the environmental impacts of their procurements and taking decisions in a socially responsible manner while ensuring value for money on a life-cycle basis.

Sustainable procurement means making sure that the products and services we buy are as sustainable as possible, with the lowest environmental impact and most positive social results.

In this article, let’s Discuss about The 14 Principles of Procurement Sustainability®.

Key Words:

Sustainability, Three Pillars of Sustainability, social, economic and Environmental dimensions, Sustainable Procurement.

Sustainability: A Long-Term Vision

Sustainability is the ability of something to Last for Long. Sustainability is important because we live on a Planet of Finite Resources - though these Resources are Naturally Available in very very Large Volumes - of course has Some Limitations. Often we Treat and taking for granted that these Resources are Infinite and Abundantly Available for Ever. These Mis-Conceived Notions and Perceptions proved us wrong very lately to realize and recognize that, there is Limitations to Everything. Earth’s resources are not unlimited and that humans must use and conserve resources in a manner that allows their continued use in the future.

Therefore, we need to Conserve the Natural Resources, for not only meeting the Requirements of Present Generations, but also need to Preserve for Future Generations.

Sustainability means meeting our own needs without compromising the ability of future generations to meet their own needs. In addition to Natural Resources, we also need Social Well being and Comfort of Living, Wealth and Economic Growth. So Sustainability adds up two more Dimensions: Social and Economic Factors in addition to Environmental Factors.

Three Pillars of Sustainability

Embedding all three aspects sustainability, refers to concerns for Community Comfort of Living and Equity - Human Factor (Social) and Wealth Generation, Progress & Development (Economic) and Conserving & Preserving of Natural Resources (Environment). These are also known as “Triple Bottom Line” – Called 3P’s (People (Social); Profit or Prosperity (Economic) and Planet (Environment). These forms Three Pillars of Sustainability. Adopting sustainable practices, whether large or small, can have significant impacts in the long run.

Sustainability is a societal goal with three dimensions: the Social, Economic and Environmental. This concept can be used to guide decisions at the global, national and at the individual consumer level.

Therefore, sustainability is made up of Three Pillars: Society, Economy, and the Environment. These principles are also informally used as People, Profit, and Planet.
Sustainability is a holistic approach that considers Social, Economic & Environmental Dimensions, recognizing that all must be considered together to find a balanced co-existing of all Humans, Flora (plant life); Fauna (refers to animals) and others, Living for Today & Tomorrow.

The 14 Principles of Procurement Sustainability®:

The 14 Principles of Procurement Sustainability®, developed by the Author for guiding to development of Procurement Sustainability Policy for making sure that the products and services we buy are as sustainable as possible.

Let’s now Discuss these 14 Principles of Procurement Sustainability®:

These 14 Principles of Procurement Sustainability are set of value based Principles that establishes a framework for expected Procurement Behavior, Decision-making & Practice, guiding organization throughout it life in all circumstances, it’s Consistency and Discipline, Respect for the Society, Concern for the Environment and all out wealth & Economic Growth.

1st Principle : Policy Alignment

Procurement Policy shall be Aligned with Corporate Sustainability Policy and ensure Commitment by Top Management.

Set Organizational Vision & Mission with Sustainability Goals and Align Procurement Policy with overall Organizational Mission with Holistic Approach to Sustainability. Ensure the policy reflects the organization’s values and includes commitment to continual improvement. Management’s commitment to Sustainability is very important because they provide the Right Direction, Drive Change, Propel the Momentum, Provide Resources for implementation, maintenance and improvement of the Sustainability Practices.

2nd Principle : Product Responsibility, Green & Circular Procurement

It is Commitment of the organization for development and production of Goods or Services to the highest possible standards in order to minimize the impact on Society, Economy and the Environment. It also involves Green & Circular Procurement. Green Procurement means purchasing products and services that cause minimal adverse environmental impacts. Circular procurement is a term relating to purchases that support the principles of the circular economy, a system that seeks to limit the waste of resources and reduce environmental impact within the context of sustainability. It is aligned to 4R Cycle – Reduce, Reuse, Recycle & Recover.

3rd Principle : Continuity & Consistency; Efficiency & Effectiveness

Continuity in Procurement refers to the capability of ensuring uninterrupted flow of products and services from suppliers to customers within an acceptable level and time frame so as to safeguard the prioritized activities of the organization and interested parties. Consistency Refers to Uniformity of Procurement Policy, it’s implementation and practices across all the units.

Efficient Procurement is defined as: “capability of procuring required goods or services without wasting or sacrificing material characteristics, quality, time, or energy. Effectiveness on the other hand is doing the right thing. “Efficiency is how the procurement process is handled, while effectiveness focuses on attaining the end result. In procurement, efficiency is often put to the side while the focus is on effective results for the organization as a whole for attaining sustainable goals.

4th Principle : Assure Quality at the Source; First Time Right – Adoption of Lean

“Assure Quality at the Source” is a principle in the Continuous Improvement dimension of the Shingo Model.

Perfect quality can only be achieved when every element of work is done right the first time. If an error should occur, it must be detected and corrected at the point and time of its creation. Therefore, Establishing
environmental and social performance standards apart from economic factors for the suppliers are essential to ensure preventing mistakes and defects in supply which in turn minimises wastage, reducing pollution and it’s associated use of resources and resource preservation & environmental impact. Lean Procurement refer to the use of systematic methods to improve the procurement process and workflows, reducing time and reduce costs by eliminating wastes and non-value-added activities while delivering quality products at lowest cost with greater efficiency. With these concepts in mind, lean procurement is an inherently linked to sustainability.


Economic Sustainability that is Value for Money with the lowest environmental impact and most positive social results is an essential Sustainability Principle. The procurement processes should be carried out to achieve the most advantageous combination of cost, delivery, quality and sustainability over the life cycle of the procurement.

Value from the Customers Perspective; Predictability that is the ability to plan and deliver; Productivity meaning Getting more done in the same time or with the same resources and Growth of the organization are the key Considerations.

Competitiveness is the capability of procuring that influence timing, cost, quality and delivery of a product to derive Competitive advantage for the organization. While making Procurement Decisions, Life cycle cost (LCC) approach may be adopted that assesses the total cost of an asset over its life cycle including initial capital costs, maintenance costs, operating costs and the asset’s residual value at the end of its life.

6th Principle: Local Supplier Development, CSR & Social Accountability.

Local Supplier Development (LSD) as part of Sustainable Procurement is about Engaging and Assisting Local Suppliers in enhancing their Skills and Capabilities to meet supply requirements and consistently supply quality products at competitive prices. Local procurement can contribute to the implementation of the sustainability concept in the business in many ways – Developing the Local Entrepreneurs, Creating Job Opportunities for Locals, Economic Wealth Creation, Minimize Pollution due Less Transportation etc.

Corporate Social Responsibility (CSR) is about corporate behaviour, governance and transparency in key social, environmental and business areas. Integrating CSR into Procurement Policy enhances the Sustainability Efforts.


Assessing & Building Sustainability Capacity refers to structures and processes that allow the Procurement Processes to leverage resources to effectively implement and maintain evidence-based Policies and Activities. Capacity Development comprising three interconnected levels of capacity: Individual, Institutional and Enabling Policy. It is a Measurable Improvement in an organization’s ability to fulfill its sustainability mission through a blend of sound management, strong governance, and dedication to assessing and achieving sustainable results.

Benchmarking is a common practice that helps to establish baselines, define industry best practices, identify risks and opportunities, and create a competitive environment within a company or organization. Sustainability benchmarks are a way of systematically evaluating the sustainability performance against Standards & Best Practices of other Entities. Sustainability benchmarking provides many benefits, including a way to gather comparable information relative to other benchmarked entities, evaluate the sustainability performance of voluntary or mandatory standards, forecast potential business risks and opportunities and demonstrate the positive impacts of the organizational sustainability programs.

Sustainability Risk Appraisal identifies Potential Hazards and Sustainability Challenges that could expose to practices that negatively impact the environment and the people or the society involved in the Procurement Processes. Climate change, water scarcity, disease, and poor labor conditions are some key factors that increase sustainability risk and may decrease Procurement Efficiency and Success.

8th Principle: Fair Dealings-Integrity & Ethical Procurement

Ethical Procurement Policy sets Ethical Practices like Fair Dealings-Integrity and Social Principles first, in order to ensure fair purchase dealings in socially and environmentally responsible way, ensuring income generation and development for local communities and avoid unethical practices such as engaging child labours, discrimination or favouritism or exploitation.

Value for Values; Inclusiveness without any Discrimination

Procurement Ethics are based on Certain Organizational Values. Values are a set of beliefs or opinions that influence, characterize and reflects the ethical behaviour, the vision and outlook of how organizations lead the business.

Value for Values refers to Value Propositions an Organization Commits to, take Responsibility & Initiates Transformative and Ethical Leadership that Reflects Sustainability.

Having access to a wealth of natural resources, as well as ensuring general well-being for all, is a moral right of everyone. The term sustainability more broadly refers to moral obligations and include anything that
helps protect an organization’s ability to operate responsibly towards the world socially, environmentally, and financially.

The aim is to establish policies and practices that enhance the role of human capital development in sustainability and social inclusion, emphasizing its civic, social, and equity dimensions without any Discrimination, create a better work culture and work-life balance while keeping in mind Economic & Environmental Factors.

9th Principle: Good Governance Compliance with Regulations

Good governance promotes accountability, transparency, efficiency and rule of law at all levels and allows efficient management of human, natural, economic and financial resources for equitable and sustainable development. Sustainable Compliance program improves the risk profile through a more effective and efficient compliance function focused on the most important procurement regulatory risks and eliminates inefficient activities.

10th Principle: Visibility, Transparency, Accountability & Responsiveness

Transparency and accountability are generally part of Good governance, characterized by a feeling of trust at all levels includes visibility i.e. the ability to track and provide information about its activities related to sustainability and governance to concerned stakeholders that is accurate, complete and made available in a timely way.

Responsiveness is the ability of an organization to promptly adjust to changes and respond in its internal and external factors like Economical, Social & Environmental impacts. Responsive sustainability refers to timely and controllable interventions that improve sustainable outcomes.

11th Principle: Stronger Partnerships; Collaborative Procurement

Stronger Partnerships will contribute to environmental protection and sustainable development by mobilizing resources, sharing knowledge, promoting the creation and transfer of environmentally sound technologies, and building capacity. A strong partnership can add value to the business, with the true measure being the creation of sustainable value for customers and the society at large.

Voluntary Commitments and Multi-stakeholder Partnerships, facilitating varied engagements of all the stakeholders in support of the implementation of the Sustainable Development Goals, shall strengthens the cause in right direction.

Collaborative procurement is the practice of multiple organizations coming together by Pooling Resources for establishing Common Facilities or Consolidating Procurements or Jointly availing Services from various Procurement partners and other stakeholders. Collaborative procurement delivers greater efficiencies through economies of scale, combined purchasing or collective efforts to minimize environmental & social impacts. Collaboration enhances sustainable benefits by creating legitimacy of sustainable technologies, reducing waste and improving economical, environmental and social performance of firms.

12th Principle: Create Value for the Customer & Business Partners

Embrace sustainability as a driver of value creation; Take a holistic perspective, but act on what matters to the business. Engaging customers and business partners in the sustainability efforts, naturally creates mutually beneficial business value to all the business partners for long term. Keeping promises and delivering consistent results is a key to proving the reliability of the company, product or service, and this is a major intangible business value. Business Partner integration into the value chain with clear plan for each partner’s responsibility and accountability can be a key to success and essential to empowering each company to leverage their core strengths. A sustainable partnership mindset is a vehicle for operational and organizational growth ultimately driving long term creation of Sustainable Value.

13th Principle: Sustainability Innovations & Continuous Improvements

Businesses are facing growing competition due to globalization and new technologies, however by harnessing technological innovations for sustainable development can create win-win situations for the organizations - leverage business advantages, may drive higher profitability, efficiency, and competitiveness, product differentiation, a growing customer base, and improved market and brand positioning etc. Also it may contribute towards societal & environmental changes like wealth creation with optimal use of resources, social well being & reducing business carbon footprint.

Sustainability Measurement and Controls are also very important considerations for Continuous Improvements. Measurements are fundamental to Sustainability which include setting Standards & Benchmarking Performances, tracking and assessing progress, improvement in the operations, evaluating process, evaluating sustainability tradeoffs, meeting or anticipating new requirements, finding & addressing barriers, rewarding excellence, and communicating benefits and goals among others.

Though difficult to quantify, sustainability can be measured through certain indicators, benchmarks, audits, sustainability standards and certification systems like Fairtrade and Organic, indexes and accounting, as well as assessment, appraisal and other reporting systems.
You can measure the carbon footprint of your business using the business carbon footprint calculator here. Economic metrics: Include specific economic indicators that track the creation of wealth or value and report its distribution and reinvestment for future growth.

The proposed framework for social sustainability measurement includes six dimensions: employee participation, employee cooperation, equal opportunities, employee development, health and safety, and external partnership.

14th Principle: Sustainable Inclusive Growth

Inclusive Sustainability warrants Economical Growth alongside Environmental Sustainability and Social Justice. As per OECD (Organisation for Economic Co-operation and Development), inclusive growth is economic growth that is distributed fairly across society and creates opportunities for all.

It explicitly targets “decent” employment generation and help in reducing poverty, develop local community, raise standards of livings of larger populace, environmentally sustainable productivity growth, provide the technological solutions to environmentally sound Goods or Services and which is consistent with trade, financial, industrial, rural development, and social policies.

It also means having access to essential services in health and education by the poor. It includes providing equality of opportunity, empowering people through education and skill development. It encompasses a growth process that is environment friendly growth, aims for good governance and helps in creation of a gender sensitive society.

Organizations may responsibly be engaged to commit and contribute in all its best for sustainability.

For more details, please visit to my YouTube @ https://www.youtube.com/227I6J6AyFns

Conclusions

These key considerations provide a starting point for companies to create more sustainable Procurement. By integrating these practices into their operations, businesses can reduce their environmental footprint, enhance their brand reputation, and contribute to a more socially responsible and environmentally conscious future.

Sustainable Procurement is the Integration of Sustainable Principles into the company’s Procurement policy & Processes to Reduce the Socio-Environmental Adverse Impacts due to their Procurement & other Related Activities and still ensuring that they meet the Economic Objectives of the Organization and the Requirements of the Stakeholders by balancing the Sustainability.

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OBITUARY

22.06.1938 to 15.05.2023

SHRI S.S.V. RAGHAVAN

Fellow Member, Senior Faculty, Former Chief Editor of MMR Distinguished Member of Indian Institute of Materials Management

With profound grief we inform of the sad demise of Shri S.S.V Raghavan on 15th May 2023.

We wish you farewell in your journey to eternity. You’d never be forgotten, rest in peace.

Fond memories are what we have in remembrance of our dear departed

With reverence and heartfelt condolences.
India is being looked at as the next global chemical manufacturing hub, and the Specialty Chemical industry, in particular, is being considered an area of key interest, with a fair bit of attention from investors on the back of growth potential of the sector. Be it agrochemicals, flavours and fragrances, specialty polymers, dyes and pigments, surfactants, or a host of other areas, all segments are growing.

The growth could get further support if one looks at the global environment, with uncertainty at a high and inflation and muted growth hitting the largest of the global economies. India appears to find itself in a sweet spot, engineered by strong Central Bank policies where all measures to manage Covid came with a ‘sunrise clause’, and strong Government policies to support the economy. The ability to avoid the worst of the sharp spike in natural gas prices has further buttressed India’s attractiveness for global customers. A stable political environment in a strong and vibrant democracy, a chemical industry that would appear to have crossed the inflection point, a respect for intellectual property with a value system that is deeply rooted in the social fabric, a demography that promises availability of people to drive growth; everything seems to be coming together for India at this time. Be it domestic consumption where India is looked at as a major market for the future; or as an alternative for existing capacities in Europe which in the emerging context is gradually losing its competitive edge, the Indian chemical industry appears to be the answer to many questions.

Having said that, things are not perfect. There would be many basic and intermediate chemicals that are not made in India yet, or where India may not be competitive, and it may continue to make sense to make those key inputs elsewhere. Though substantial infra has got created, Indian ports, storages, and transport infrastructure still have some way to go to be able to accommodate global-scale import of bulk and industrial chemicals. Where domestic capacities make sense, there is a long lead time for large capital-intensive assets to be put up and commissioned. The innovator market is still being governed by the western world that drives the opportunities of the future.

The regulatory environment continues to evolve, with tightening norms and standards. This is a big positive, in the long-term, as it would help the industry to be more responsible and weed out smaller, less professional or less ethical players who may take shortcuts to be compliant. In the short-term, of course, these regulatory changes bring with them pain and discomfort, as much or more from the absence of a roadmap that the Industry can use to prepare itself as from the change itself.

There is a need for skilled manpower, both in operations and in R&D, and this needs all the industry players to chip in and create a capable and future-ready work force. Growth must be funded with both financial and human capital, and it is the latter that does not appear at will out of a chequebook. People take time to grow, to season, and to help drive the Industry to take its due place on the global stage. Many players would like to enter the Industry and participate in this growth, but while one may pay more and get people in the short-term, this is not a sustainable solution. Experienced personnel know that long-term success is the result of many pieces coming together: customer relationships to get business, experienced R&D for process development, excellent project management for putting up new assets, skilled supply chains, stable operations, knowledgeable and process-driven safety teams, a supportive organizational culture... the list goes on. It is possibly here that one may get a better sense of why specialty chemicals, more than many other industries, continues to be attractive: It requires perseverance in creating capabilities and competencies that bear fruit over the long-term, and all of these constitute effective moats for new entrants.

SRF remains cautiously aggressive about the Indian Specialty Chemicals space. We are cautious, in the sense we value the trust our customers repose in us and the respect that we share with our partners, and we work hard to ensure that we do not over-commit. But we are aggressive in terms of our desire and efforts to grow our capabilities and become a
company that our nation and the Industry at large could be proud of. SRF’s Specialty Chemicals has disproportionately grown over the past few years and this growth is supported by massive investments made in plants, research, equipment, manpower, trainings, and the like. The overall result of the mammoth effort reflects in the value created by SRF for its stakeholders with the creation of a business model for the industry where sustainability is at the centrepiece of development.

Sustainability is a key requirement for any long-term player. Innovation and continuous process development, the effective use of technology, are all embedded in SRF’s sustainability endeavours. Be it yield improvement, energy savings, enhanced throughput in the same assets, solvent recovery, recycled packaging, or a host of other initiatives, at SRF’s Chemicals Business these are part of a continuous improvement journey. We focus on improving our reliability as a supplier by integrating our value chains, encouraging domestic partners to create manufacturing capacities to meet our needs. The progress so far has been great as the dependence on imports for key raw materials gets addressed within our country itself.

There is a global need stemming from inflation, muted growth, and sky-high energy prices; and India has the ability to address that need, with a large and growing chemical industry, a stable democracy, and the skillsets and demonstrated capabilities required. While many players will enter and further add to the vibrance of this Industry as it grows, entry barriers are significant and not all these players will find the environment hospitable. Having said this, with the Government advocating the domestic Industry with policies like ‘Startup India’ to ‘Make in India’, we see this as a great time to be in the Indian Chemicals space.

At SRF, we believe that we must focus on sustainability, continuous process development, the effective use of technology, and offer customers a reliable, ethical, and flexible value proposition. We believe that to the extent the Indian Chemical Industry is able to achieve this vision, we will achieve our potential.

On my part, I have no doubt that we will do so, and I am more excited today than I was when I became a part of this Industry almost three decades ago!

TIME TO BEAT PLASTIC POLLUTION

AARTI

June 5 this year marks the 50th anniversary of World Environment Day. Observed globally since 1973, this year’s theme BEAT PLASTIC POLLUTION, with focus on solutions to plastic pollution, is quite apt.

For India, which assumed the presidency of the G20 forum on December 1 last year, among others, it is a very special occasion to voice its views and garner support in so far as the environment is concerned. More so because, G20 members account for more than 80 percent of the world’s GDP, 75 percent of global trade and 60 percent of the population of the planet.

As part of the G20 decision-making process, in respect of environment, discussions of the Environment and Climate Sustainability Working Group (ECSWG) shall focus on ‘Promotion of Blue Economy along with Coastal Sustainability’, ‘Restoration of Degraded Lands and Ecosystems’ and ‘Enhancement of Biodiversity’ and ‘Strengthening of Circular Economy’.

Notably, the first and second ECSWG meetings had taken place from 9 to 11 February 2023 and 27-29 March 2023 at Bengaluru and Gandhinagar respectively. Laudably, the G20 member countries have reportedly reaffirmed their commitment towards combating the environment and climate crisis – of course with a renewed sense of urgency. They have also agreed on the pressing need for concerted global efforts and the immediate action required, given the current scenario. The 3rd and 4th ECSWG meetings are scheduled to be held between 21 and 23 May 2023 and 26-27 July 2023 at Mumbai and Chennai respectively.

That plastic pollution has become one of the most pressing environmental issues is disconcerting. Ever since it was discovered in 1907, the global demand
for plastics has outpaced all other bulk materials such as steel, aluminium and cement. It is used in packaging, healthcare, mobility/transport, electronics, agriculture, sport and leisure equipment, building/construction and energy.

Nearly 400 million tonnes of plastics is produced globally. Packaging constitutes around one-third of such demand followed by construction and clothing. For instance, plastics are part and parcel of blood transfusion bags, replacement joints, flexible catheters. A host of several other applications rely on plastic like medical equipment, vaccination kits and personal protective equipment – all play a vital part in keeping us healthy. However, the cause for concern is about the plastic waste that remains uncollected. Most of these are single use and low value that are not picked by plastic waste collectors which eventually reach either landfills or streams and rivers, thereby contributing to marine litter.

To manage plastic waste, the Union Government notified the Plastic Waste Management Rules, 2016 on 18 March, 2016 and the Solid Waste Management Rules, 2016 on 8 April, 2016. As plastic waste is part of solid waste, therefore, both the rules apply to managing plastic waste in the country. Under the Plastic Waste Management Rules, 2016, the generators of plastic waste are required to take steps to minimize generation of plastic waste, not to litter the plastic waste, ensure segregated storage of waste at source and hand over segregated waste in accordance with rules. The rules also mandate the responsibilities of local bodies, gram panchayats, waste generators, retailers and street vendors to manage plastic waste.

Most importantly the Plastic Waste Management Rules, 2016 defined Extended Producer’s Responsibility (EPR). It cast the responsibility of a manufacturer of plastic carry bags, and multilayered plastic pouches and sachets and the brand owners using such carry bags and multilayered plastic pouches and sachets for the environmentally sound management of the product until the end of its life. EPR is also applicable to both pre-consumer and post-consumer plastic packaging waste. The harsh reality is less than one-fifth plastics are recycled globally, leaving more than 80 per cent of the production to find its way into landfills or oceans. According to some reports, packaging plastics in India constitutes around 43 percent of total plastic demand and around 60 percent of plastic waste collected is recycled.

World over, the plastics industry reportedly has been striving to transform its traditional linear economy (where plastics are typically disposed of at the end of their service life) into a plastics circular economy (where plastics can remain in circulation longer). Briefly put, emerging technologies coupled with improved products design can enable reuse at the end of their life span as also recycling of plastics waste streams that cannot be processed by mechanical recycling.

At the macro level there have been various initiatives by the Government like the Swachh Sagar Surakshat Sagar campaign which was aimed to remove approximately 15,000 tonnes of waste from 75 beaches in 75 days. The Swachh Bharat Mission aimed at eliminating open defecation led to the construction and use of over 100 million toilets in rural India within a span of 7 years. The Ujjwala Scheme increased households with LPG connections from 62 percent in 2015 to 99.8 percent in 2021. The Mission LiFE (Lifestyle for Environment) introduced by Prime Minister Narendra Modi at the 2021 United Nations Climate Change Conference, Glasgow on 1 November 2021 aims to nudge individuals and communities to practice a lifestyle that is synchronous with nature and does not harm it. The objective is to mobilise at least one billion Indians and other global citizens to take individual and collective action for protecting and conserving the environment in the period 2022–28. Within India, at least 80 percent of all villages and urban local bodies are aimed to become environment-friendly by 2028.

If reports are to be believed, the total quantity of plastic packaging consumed in India is approximately 6.33 million metric tonnes per annum. We cannot ban plastics altogether because they contribute to healthier and longer lives. But it can be used prudently. According to the United Nations Environment Programme, if 1 out of 8 billion people worldwide adopt environment-friendly behaviours in their daily lives, global carbon emissions could drop up to 20 per cent. At an individual level small steps can go a long way like using a cloth bag instead of a plastic bag while shopping can save up to 375 million tonnes of solid waste from entering the landfill. It’s time to beat the plastic pollution. Our behaviour and attitudes towards plastics merit change as the unabated use of plastics comes with an avoidable environmental cost. Surely, together, we can.

Source: **Indian Currents**

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A GLOBAL DEAL TO BEAT PLASTIC POLLUTION

My thanks to Uruguay for its generosity in hosting this, the first meeting of the Intergovernmental Negotiating Committee (INC-1) to develop an international legally binding instrument on plastic pollution. My sincere gratitude to Mr. President. Your presence with us demonstrates the determination of Uruguay to remain a global environmental leader. I wish to also express my appreciation for their generous support to this process. It is wonderful to see so many participants close to 2,500, representing many countries and stakeholders. This is the future of multilateralism.

This meeting is sandwiched between the climate and biodiversity summits. This is a calendar issue, but it is also incredibly appropriate. Creating a circular plastics economy that ends plastic pollution is critical to the success of both the nature and climate agendas. It is critical to our success as a species.

Member States acknowledged this when they adopted the resolution at the United Nations Environment Assembly in March, Nairobi. Now, after the efforts of the open-ended working group to bring us here, we get to work.

At this meeting, there are several key aspects to focus on so we can meet the 2024 deadline. Obviously, we have UNEA Resolution 5/14 to use as the starting point. Now we need to set up the machinery to run the process, such as the bureau and rules of procedure. We need to share views and hear stakeholder voices. And we need clarity on the direction of the future instrument, including its scope, structure, and objectives. At this meeting, we are setting the stage to foster an innovative instrument by leaning into the future and learning from the past.

With what I am about to say, I am perhaps running the risk of sounding like a broken record, as you have heard much of this before. But as we are now getting into shaping the agreement, I feel it’s important to reiterate how we can build a successful instrument. So, please indulge me as I run through four areas of focus.

First, we must build an instrument broad enough and deep enough to cover the whole plastics problem, while also ensuring that all countries can participate.

There is a lot to unpack here. We must eliminate and substitute problematic and unnecessary plastic items. Ensure that plastic products are designed to be reusable or recyclable. Ensure that plastic products are circulated in practice, not just theory. Manage plastics that cannot be reused and make sure that we talk about reductions or alternatives along the production chain.

To get this done, the deal must cover the full life cycle: from considering different types of polymers and plastic products to developing safe and environmentally sound waste management. Crucially, we must ensure that these actions take into account the principles of a just transition so that nobody is left behind.

Secondly, be informed by science and work with stakeholders to build a new plastics economy.

Clearly the deal must lean heavily on science to identify hotspots for action, but plastic pollution is everywhere and affects everyone. It’s essential that negotiators listen to a diverse set of voices and consider the many ways in which plastics impacts different segments of society, whether in the Global North or the Global South. Essential that the deal listens to civil society organizations, academia, indigenous peoples, the informal sector, youth, trade unions as well as the private sector — and creates a deal that ensures everyone can contribute to its implementation.

So, we need to build on the interest of consumers to reduce plastic pollution. Ensure the integration of millions of workers in informal settings, such as waste pickers, into the new economy for plastics. Give industry a chance to innovate, to lean in and to commit and measure up against the targets you set.

I am pleased to see that there are different opportunities for all voices at INC-1, through the stakeholder forum that took place on November 26 and the dialogue on Tuesday afternoon. I urge everyone to use these opportunities to bring innovation and ambition to this process.
Third, let’s learn from other multilateral agreements, work with them and also innovate in the multilateral space

The Montreal Protocol, the Basel, Rotterdam, Stockholm and Minamata Conventions, and others beyond the environmental arena, all provide experiences to build on. But this agreement must also dovetail with agreements on oceans, biodiversity, climate change, health, and social issues. While learning from past agreements, we must also look towards innovations as we forge a new, networked, inclusive, dynamic environmental deal. Let us be informed by the past and innovate for the future.

Fourth, ensure adequate financial and technical assistance for developing countries

A key lesson from other agreements is that, for us to succeed is that while much action can be done at home through national policies and actions, developing countries will need support: with technology, with skills and, yes, with finance. This is important for many nations, but particularly for Small Island Developing States (SIDS). These states import plastics and lack waste management systems, but we also need to understand that much of the plastic arrives on their shores, uninvited. But, with support – including on building the skills of local repairers and recyclers – SIDS can create a localized circular plastics economy that reduces dependence on imports.

I know there is much to agree, and little time to agree it. But we are here with a common purpose and a common opportunity. Let’s be inclusive and address the concerns of all countries and stakeholders. Because each one of us has a role to play in enabling a just transition to a circular plastics economy.

We need to show the courage, to listen to each other and avoid pitching sectors and countries against each other. We need the courage to innovate. The courage to step out of our comfort zones. The courage to lean-in. The courage to embrace the future. This is how we will get this deal done. This is how we will end plastic pollution.

Thank you.

Source : UNEP

BAGGING PLASTIC AND POVERTY

CHRIS WELSCH

Indian plastic solution rePurpose uses offsets to remove plastic from landfills and reuse it, helping the environment and creating jobs to fight poverty in India.

For the founders of rePurpose Global, the enormity — and the importance — of the problem they were confronting crystallised on a visit to Deonar, one of the world’s largest landfills, in Mumbai, India. “We realised we were standing between mountains of plastic on one side, with waste pickers who are literally on top of those trash heaps sorting out recyclable and valuable wastes, and on the other side, you’ve got this massive booming urban skyline of India’s financial capital,” recalls Peter Wang Hjemdahl, the founder of rePurpose Global.

In the same field of vision, they could see both the glass towers full of white-collar workers whose consumption was creating the waste, and the people trying to scratch out a living from it. “That contrast was really what drove us to action, trying to bridge these two worlds,” Peter says. Peter and his co-founders, Svanika Balasubramanian and Aditya Siroya, were working on an undergraduate project at the Wharton School of Business at the University of Pennsylvania. They’d been tasked with a student case competition: How do you go about doubling the income of 10 million people living in extreme poverty in urban slums across the world?

“And that’s where we got curious and actually dug deep and found out that waste picking was one of the most prevalent employment opportunities in and among the urban poor today,” Peter says. “Hundreds of millions of informal workers engage
in underground recycling on a daily basis around the world.”

On top of that, the amount of plastic waste is mind-boggling, and the damage it does is widespread and diverse. A 2018 National Geographic article on the topic puts the problem in stark terms: The planet has 9.2 billion tons of plastic to deal with. “Of that, more than 6.9 billion tons have become waste. And of that waste, a staggering 6.3 billion tons never made it to a recycling bin — a figure that stunned the scientists who crunched the numbers in 2017.”

**Innovating with idea of carbon offsets**: To address both issues, the trio of entrepreneurs came up with a proposal to create what would become rePurpose Global, a for-profit company that uses a similar principle to carbon offsets “an increase in carbon storage through land restoration used to compensate for carbon emissions that occur elsewhere— to get funding for recycling and reuse infrastructure and equipment in places like Deonor. In 2018, their proposal won the University of Pennsylvania’s President’s Innovation Prize, with $200,000 to start their own social enterprise.

Peter describes a gap between the growing desire to move toward sustainable consumption and the massive amount of plastic trash still being released into the environment. The idea of rePurpose Global is to bridge that gap by creating the possibility of becoming “plastic neutral” by paying to have plastic removed from the environment. One plastic credit purchased from rePurpose Global for about $50 cents is equal to one kilogram of plastic removed and eliminated from the environment — a kilo of waste that would otherwise have been destined for landfills, oceans, or incineration.

In this way, companies and individuals can contribute to solutions while they find ways to cut their use of plastic. Peter says that the key to making this system work is making a measurable impact.

“We’re not in the business of funding work that’s already happening,” he says. “We’re in the business of changing what’s happening, building new infrastructure and systems that actually improve the status quo.”

In just three years, with two of them being under the constraints of a global pandemic, rePurpose Global has accumulated more than 200 clients who like the idea of pursuing “plastic neutrality,” including large Fortune 500 companies like Google, Colgate, and Credit Suisse.

**Retiring plastic worldwide**: With the money rePurpose Global is earning, “we’re removing 14 million pounds of plastic waste from the environment every single year across 14 different projects,” Peter says. rePurpose Global is funding the purchase of trucks and sorting facilities as well as creating dignified working conditions for more than 10,000 waste workers in projects in Indonesia, Kenya, and Colombia among other places. rePurpose Global is also providing funding for research and innovations that could eliminate the use of plastic altogether.

rePurpose Global was one of the finalists in the 2021 Social Innovation Tournament, sponsored by the European Investment Bank Institute to promote solutions to social and environmental problems. It’s always looking for the most efficient and least harmful ways to deal with the plastic its projects capture. Some is recycled, but most of it is “low-value” plastic like candy wrappers, plastic film and bags. Some of this is used as fuel to create power, and some is broken down into components that can be reused in other ways, as an element in concrete for example.

For Peter and his co-founders and team members, the mission remains focused on repairing the places where plastic and people meet.

“The reality is that plastic is a very intersectional environmental issue,” he says. “It’s not just about saving the turtles or sea life. It’s also one of the issues that’s intrinsically tied to extreme poverty. This is what is driving us to find solutions that address the plastic problem on a systematic level.”

Source: www.eib.org
BEAT PLASTIC POLLUTION: HISTORIC RESOLUTION ON PLASTIC POLLUTION ADOPTED

The resolution establishes an Intergovernmental Negotiating Committee (INC) with the ambition of completing a draft global legally binding agreement by the end of 2024. Beat Plastic Pollution: Relevance

GS 3: Conservation, environmental pollution and degradation, environmental impact assessment.

Beat Plastic Pollution: Context

Recently, 175 countries have adopted a historic resolution to end plastic pollution by creating an intergovernmental committee to finalise a legally binding agreement by 2024.

Historic Resolution on Plastic Pollution Adopted: Key points

The resumed session of fifth United Nations Environment Assembly (UNEA 5.2) was held from 28th February 2022 to 2nd March 2022 in Nairobi to strengthen actions for nature to achieve the Sustainable Development Goals.

The meeting considered three draft resolutions to address plastic pollution. Importantly, one of the draft resolutions under consideration was that of India. The draft resolution submitted by India called for immediate collective voluntary action by countries. The resolution to form a legally binding agreement by 2024 was the most significant environmental multilateral deal since the Paris accord.

The resolution establishes an Intergovernmental Negotiating Committee (INC), which will begin its work in 2022, with the ambition of completing a draft global legally binding agreement by the end of 2024.

UNEP@50: It will be a high-level event, devoted to the commemoration of the 50th anniversary of the creation of the UN Environment Programme (UNEP) in 1972.

UNEP@50 theme: Strengthening UNEP for the implementation of the environmental dimension of 2030 Agenda for Sustainable Development

UNEP UPSC: Tri planetary crisis

UNEP speak of a triple planetary crisis—the crisis of climate change; the crisis of biodiversity loss; and the crisis of pollution and waste. Together, they pose a huge threat to human peace and prosperity.

Crisis of climate change: Concentrations of CO2 in the atmosphere are higher than two million years and one billion children are at extremely high risk from the impacts of climate change.

Crisis of biodiversity loss: we continue to erode the natural world. Seventy-seven per cent of ice-free land surface has been modified by human activities and one million species face the threat of extinction.

Crisis of pollution and waste: 11 million tonnes of plastic flows into our oceans every year and more than 90 per cent of us live in cities where air quality does not meet World Health. Organisations standards.

The triple planetary crisis has been caused by decades of relentless and unsustainable consumption.

UNEP Recommendations We must tackle the earth’s environmental emergencies and human well-being as one indivisible challenge. We must transform our economic and financial systems to power the shift to sustainability. We must transform our food, water and energy systems to meet growing human needs in an equitable, resilient and environmentally friendly manner.

Source: www.adda247.com

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BLOCKCHAIN IN SUPPLY CHAIN: BENEFITS AND TOP USE CASES IN 2023

CEM DILMEGANI

Today’s supply chains are more complex than ever due to the globalization of the market. Nearly half of supply chain leaders say that they only have visibility into their first-tier suppliers but not their upstream supply chain.1

Any business with a supply chain has to manage all of the multiple suppliers, manufacturers, consumers, logistics, etc. at the same time with precision and swiftness. However, as the complexity increases, transparency and workflow decrease. Since the future scenario of the world market signals more complexity, successfully and efficiently sustaining the functioning of supply chains seems challenging.

Due to this complexity, plus the lack of transparency and rapidness, in current supply chains, the implementation of blockchain for supply chain management is becoming an attractive idea.

In this article, we will investigate how blockchain technology can be used in supply chains, what advantages it brings to the area, and its top use cases in the supply chain.

What advantages blockchain technology offers to supply chains?

A blockchain is a distributed ledger technology. In this ledger, transactions are recorded as a series of code blocks that constitute a chain. When the blockchain changes, each computer that has the same ledger is updated. This means that, since each block only exists in relation to its antecedent and subsequent block, the data within a block can’t be changed. Therefore, this makes blockchain a highly verifiable, anti-tampering, transparent technology in business, and especially in supply chain management.

Now we can focus on what kind of advantages this functioning of blockchain brings to supply chains. Here is the overlook of some fundamental ones.

- **Traceability**: Blockchain enables the mapping and visualizing of steps in a supply chain easily because of its interconnected and encompassing bridging of actions. This enhances the traceability of each element constituting a supply chain, such as keeping track of supplier information, procurement, delivery of goods, etc.

- **Transparency**: Another advantage of blockchain is that, it builds trust among the parties included in a supply chain because it provides open access to key data points it captures. Also, its traceability enhances its transparency.

- **Speed**: Blockchain encapsulates smart contracts, i.e., chunks of code within a single block in a blockchain. Smart contracts automatically update actions when predetermined conditions of the actions are met. This feature enables replacing slow and manual processes that require time-consuming confirmations.

- **Immutability**: Since blockchain is a distributed ledger consisting of multiple copies, it is almost impossible to tamper with a specific transaction because one has to alter all the copies simultaneously. This makes blockchain use in the supply chain highly trustworthy and resistant to fraud.

- **Consensus**: For transactions to successfully follow one another within a supply chain, all parties should agree on the actions. Without consensus, work is impossible. Blockchain is also advantageous for ensuring and sustaining consensus over the process because all the parties know that the transactions are automated and valid.

Use Cases of Blockchain Technology in Supply Chain

Although it is still early to say that blockchain technology dominates supply chains, businesses are leveraging it in various areas and steps of their supply chain. We can list some of the use cases of blockchain in the supply chain:

1. **Supply Chain Management**: With its qualities of transparency, traceability, speed, and consensus, blockchain facilitates the management of supply chains. Blockchain coordinates communication systems of the supply chain with a unified platform on the basis of its abilities for information-sharing and processing.

   Also, according to a study, blockchain helps reduce the risk of certain supply chain disruptions deriving from behavioral uncertainties, fraud risks, data loss, manual errors, transactional and operational risks, and informational asymmetries.2 Therefore, it can greatly enhance the monitoring and management of the supply chain.

2. **Lowering Costs**: Blockchain allows cross-border transactions. Thus, businesses can avoid intermediaries.
By doing so, they not only save time but also money by cutting unnecessary costs emerging from intermediary steps.

3. **Regulating Product Recall**: Thanks to its traceability and transparency, blockchain makes it easier for supply chains to regulate product recalls by facilitating the identification and location of the affected products in the process. Thus, the recalling process becomes less expensive and time efficient.

4. **Reducing Counterfeiting**: Provenance is important for the quality and reliability checks of products. Since blockchain allows traceability of every step within a supply chain, the provenance of goods can be verified correctly. Thus, it helps reduce counterfeiting by allowing a quick check of the provenance of the suspected goods. According to a study by OECD, counterfeited and pirated products constituted 3.3% of world trade and 6.8% of total EU imports in 2016. This indicates that there is an alarming need to combat counterfeiting, which can be succeeded by blockchain technology. Plus, since every transaction is under the control of authentication, blockchain can also prevent documentation fraud with the ability to verify certifications and official documents.

5. **Maintaining Ethical Standards**: Today, consumers are more aware of what ethical standards they expect from the businesses they provide their products from. 60% of consumers say they seek brands that reflect their own values of sustainability and purpose and research about the company's environmental, social, and governance (ESG) practices before buying from them. So, consumers want assurance that the products they are buying are not subjected to unethical production and delivery processes. By blockchain traceability, they can know the provenance of their products and know how the product is manufactured and shipped.

6. **Logistics**: We mentioned the use of smart contracts in blockchain technology. Via these smart contracts, transactions can be verified, recorded, and coordinated autonomously without third parties. Thus, a complexity element for global supply chains is alleviated. Some logistics companies like DHL are thinking of implementing blockchain use in their business.

7. **Supplier Payments**: As we mentioned, blockchain revolutionizes transaction traceability. Payments are an internal part of this. As blockchain allows automatic control of verified processes with smart contracts, once standards are met, supplier payments are done faster and with less intermediary involvement.

8. **Food Safety**: Blockchain is under consideration by the food industry for the food supply chain health. For example, Walmart with the collaboration of IBM innovatively uses blockchain technology to track the provenance and condition of its pork supply coming from China. With increased traceability, it is easier for the food supply chains to:
   - Avoid tampering with information on the provenance of foods,
   - Prevent contamination of the supplied goods with a faster and more regulated process between the processor and the distributor,
   - Forestall spoilage of goods in the process between the distributor and the retailer.

9. **Post-sale Services**: With the digitalization of product information via blockchain, post-sale services such as warranties and maintenance can become more trustworthy and under control. When a buyer verifies the product's digital identity, the warranty period can start automatically. Also, second-hand buyers can confidently investigate the product's unique identity, which makes second-hand trade more trustworthy.

If you have other questions about the use of blockchain technology in supply chains, feel free to ask:


Source: AI Multiple.
BUILDING THE NEXT-GEN SUPPLY CHAIN WITH BLOCKCHAIN TECHNOLOGY

It is believed that open ledger technology has proved a game changer for the financial sector

MITESH BULSARA, CO-FOUNDER AND CTO, COFFEEBEANS

Blockchain technology has the potential to completely transform the supply chain sector by delivering fast, secure, and immutable transaction records across stakeholders in the value chain. Thanks to its application in the world of digital currency and financial technology, blockchain has risen to prominence in a rather quick fashion. Open ledger technology has proved a game changer for the financial sector and now its use cases are transforming the fortunes of the supply chain industry. Compared to conventional structures, blockchain-based supply chains can bring a lot more benefits to the participating stakeholders in the business ecosystem. From sourcing accuracy to cost-effective delivery and product traceability to better coordination, the application of blockchain can greatly enhance each and every facet of the supply chain, thereby creating a win-win situation for both firms and end consumers.

How Blockchain-based Supply Chain Works?

The distinguishing characteristic of blockchain-based blockchains is the use of unique identifiers which can be considered equivalent to digital tokens. These identifiers are assigned to both assets and participating stakeholders and exchanged between transacting parties whenever goods move from one party to another. These transfers of tokens are recorded on the blockchain, thereby offering firms a complete chronological record of all financial, inventory, and information flows in the system. Further, blockchain records are safe, secure, and immutable which means these bring an added sense of authenticity and reliability among participating players in the supply chain ecosystems.

Benefits of using Blockchain in Supply Chains

1) Enhancing Product Traceability: By improving product traceability throughout the supply chain, blockchain ensures that brands deliver only authentic and genuine products to target customers. Blockchain allows product inventories to be tagged with unique codes and as they move from suppliers to partners, these codes are scanned and information is recorded on the open ledger, creating the entire history of product movements from the supplier to end consumers. No wonder, leading organisations across pharma, agro & food processing and FMCG are benefitting from the Product Traceability feature of the open ledger-based supply chains.

2) Increasing operational efficiency: Firms in the retail and automobile sectors often run very complex and convoluted supply chains. They source materials and components from multiple suppliers and often have to contend with long lead times, unexpected delays, and opaque reporting systems. As a result, their supply chains become vulnerable to disruption as even a slight delay from one supplier could severely imbalance the inventory levels and hence production schedules. The use of blockchain, however, can address this issue by offering enhanced visibility and decentralized access to the sourcing data across partners. By agreeing to share the data of their inventories on an open ledger, every participating stakeholder can proactively plan and manage disruptions with far greater effectiveness.

3) Enabling Global Operations: One of the significant benefits of integrating blockchain in supply chain operations is to realize the dream of going Global and efficiently handling operations overseas. Especially when it comes to Financing, Contracting, and Implementing supply chains internationally, the quick, easy, and secure way of exchanging information is of paramount importance. Blockchain can easily deliver on all these crucial aspects and can help firms to make informed and relevant decisions while expanding their operations globally. Even for other stakeholders such as banks and financial institutions, blockchain-based records can bring a lot of convenience to the table. For example, these lenders can easily assess the quality of the assets of the borrowing parties and check the credibility of the requests from potential borrowers. Similarly, processes to allot contracts, payables management, and cross-border trading can be significantly improved with the help of blockchain-based supply chains.

4) Inventory and Vendor Management: Blockchain can help firms automate the collection, analysis, and evaluation of inventory and vendor data for ensuring effective and efficient operations. While records of inventory on the blockchain paves the way for better sourcing management and material handling, the data of vendor performances can help companies to conduct vendor risk assessments for proactively plan for contingencies. Both these aspect are critical for enhancing the efficiency of supply chains and can help companies to perform to their full potential.

The transformative potential of blockchain-led supply chains has just begun to materialize in the real world. There is tremendous scope for blockchain applicability and by creating a win-win situation for all the stakeholders in the ecosystem, the open ledger is fast emerging as a preferred choice of top echelons in the supply chain domain. In sum, blockchain-based supply chains are the future and it’s just a matter of time before we start witnessing the widespread adoption of the open ledger in the segment.

Source: Newspaper
CLIMATE CHANGE IS DISRUPTING THE
GLOBAL SUPPLY CHAIN TOO

Extreme weather, from floods to wildfires, is increasingly hammering ports, highways, and factories. It’s expected to get worse.

THIS STORY ORIGINALY appeared on Yale Environment 360 and is part of the Climate Desk collaboration.

The Covid pandemic has rightly received most of the blame for global supply chain upheavals in the past two years. But the less publicized impact of climate change on supply chains poses a far more serious threat and is already being felt, scholars and experts say.

The pandemic is “a temporary problem,” while climate change is “long-term dire,” said Austin Becker, a maritime infrastructure resilience scholar at the University of Rhode Island. “Climate change is a slow-moving crisis that is going to last a very, very long time, and it’s going to require some fundamental changes,” said Becker. “Every coastal community, every coastal transportation network is going to face some risks from this, and we’re not going to have nearly enough resources to make all the investments that are required.”

Of all of climate change’s threats to supply chains, sea level rise lurks as potentially the biggest. But even now, years before sea level rise begins inundating ports and other coastal infrastructure, supply chain disruptions caused by hurricanes, floods, wildfires, and other forms of increasingly extreme weather are jolting the global economy. A sampling of these disruptions from just last year suggests the variety and magnitude of climate change’s threats:

- The Texas freeze last February caused the worst involuntary energy blackout in US history. That forced three major semiconductor plants to close, exacerbating a global pandemic-triggered semiconductor shortage and further slowing production of microchip-dependent cars. The outages also forced railroad closures, severing heavily used supply chain links between Texas and the Pacific Northwest for three days.

- Heavy rainfall and snowmelt last February caused some banks of the Rhine River, Europe’s most important commercial waterway, to begin to burst, triggering a halt in river shipping for several days. Then, in April, water levels on the Rhine, which was facing a long-term drought, dropped so low that cargo ships were forced to load no more than half their usual capacity to avoid running aground. In recent years, manufacturers relying on the Rhine “have increasingly faced shipping capacity reductions that disrupted both inbound raw material and outbound product delivery flows” as a result of drought, according to a May 2021 report by Everstream Analytics, which tracks supply chain trends.

- Flooding in central China in late July disrupted supply chains for commodities such as coal, pigs, and peanuts and forced the closure of a Nissan automobile plant. SAIC Motor, the country’s largest automaker, announced that these disruptions caused what Reuters called a “short-term impact on logistics” at its giant plant in Zhengzhou, capable of producing 600,000 cars a year.

- Hurricane Ida, the fifth-costliest hurricane in US history, struck the Gulf of Mexico coast in late August, damaging vital industrial installations that generate an array of products, including plastics and pharmaceuticals, and forcing a diversion of trucks, already in short supply across the country, for use in relief aid.

- Fires in British Columbia from late June through early October triggered by an unprecedented heat wave comprised the third-worst wildfire season in the province’s history and closed a transportation choke point at Fraser Canyon that idled thousands of rail cars and stranded their contents. Then, in November, an atmospheric river, delivering what officials called “once-in-a-century” rainfall, caused severe flooding in the province. The floods severed crucial railroad and highway links to Canada’s largest port and forced a regional oil pipeline to close. The loss of the rail network forced provincial lumber companies to scale back production, causing price increases and shortages of lumber, paper pulp, and other wood products in the United States.

- In December, a typhoon caused what TechWire Asia called “arguably the worst flooding in history in various parts” of Malaysia, and severely damaged Klang, Southeast Asia’s second-largest port. That created a break in the semiconductor supply chain, since semiconductors from Taiwan, by far the world’s largest manufacturer of advanced microchips, are routinely shipped to Klang for packaging at
Malaysian factories before being transported to US companies and consumers. The packaging breakdown contributed to global semiconductor shortages and caused some US automobile manufacturers to suspend operations.

“The Malaysia node in the global supply chain that hardly anyone was aware of turned out to be critical,” Christopher Mims, a Wall Street Journal technology columnist and author of Arriving Today: From Factory to Front Door—Why Everything Has Changed About How and What We Buy, said in an interview. “It illustrates how a bottleneck anywhere in the supply chain can interfere with the availability of critical goods.”

Scientists say that such climate-related disruptions are bound to intensify in coming years as the world warms. In addition, ports, rail lines, highways, and other transportation and supply infrastructure will be threatened by increases in sea level of an estimated 2 to 6 feet—and perhaps more—by 2100. Around 90 percent of the world’s freight moves by ship, and, according to Becker, inundations eventually will threaten most of the world’s 2,738 coastal ports, whose wharves generally lie just a few feet to 15 feet above sea level. But to most port managers, the threat still feels remote. The rate of future sea level rise is so uncertain and solutions so elusive that only a few port managers have taken action to counter the threat, and only a fraction have tried to assess it.

As the ripple effects of what are likely to be ever increasing and intensifying climate-related disruptions spread through the global economy, price increases and shortages of all kinds of goods—from agricultural commodities to cutting-edge electronics—are probable consequences, Mims said. The leap in the cost of shipping a container across the Pacific Ocean as a result of the pandemic—from $2,000 to $15,000 or $20,000—may suggest what’s in store.

A 2020 paper in Maritime Policy and Management even asserted that if current climate science is correct, “global supply chains will be massively disrupted, beyond what can be adapted to while maintaining current systems.” The paper argues that supply chain managers should accept the inevitability of economic upheaval by the end of this century and embrace practices that support rebuilding afterwards.

To be sure, not all experts believe supply chains are highly vulnerable to climate change. “I don’t lie awake at night thinking about what will happen to supply chains because of climate,” said Yossi Sheffi, director of the Massachusetts Institute of Technology’s Center for Transportation and Logistics and the author of numerous books about supply chains. “I think supply chain disruption is usually local and limited in time, and supply chains are so redundant that there are many ways to get around problems.”

SUPPLY CHAINS ARE, in essence, strings of potential bottlenecks. Each stopping point is a node in a tree-like system that conveys raw materials from the system’s farthest tendrils to sub-assemblers along its roots to manufacturers, who are the system’s trunk. Products like smartphones possess hundreds of components whose raw materials are transported from all over the world; the cumulative mileage traveled by all those parts would “probably reach to the moon,” Mims said. These supply chains are so complicated and opaque that smartphone manufacturers don’t even know the identity of all their suppliers—getting all of them to adapt to climate change would mark a colossal achievement. Yet each node is a point of vulnerability whose breakdown could send damaging ripples up and down the chain and beyond it.

Seaports are particularly vulnerable. Port authorities have three ways to cope with sea level rise, and all are inadequate, experts say. They can retreat to inland locations with river links to oceans, but available sites with requisite conditions are few and expensive. They can build costly sea dikes around the ports, but even if the dikes are strong enough to resist the rising ocean, they must continually be raised to keep up with sea level rise, and they only buy time until eventually being overtopped. They also divert floodwater to nearby coastal areas unprotected by the dikes.

Finally, port officials can raise by at least a couple of meters all port infrastructure so that the port can continue to function as sea level rise proceeds. But the rate of the rise is so uncertain that choosing a cost-effective height for the increase is problematic, Becker said. And raising wharves and other port infrastructure would still leave ports’ vital ground transportation links—railroads and highways—and, for that matter, the residents of adjoining cities, unprotected.

In a 2016 paper in Global Environmental Change, Becker and four colleagues concluded that raising 221 of the world’s most active seaports by 2 meters (6.5 feet) would require 436 million cubic meters of construction materials, an amount large enough to create global shortages of some commodities. The estimated amount of cement—49 million metric tons—alone would cost $60 billion in 2022 dollars. Another study that Becker coauthored in 2017 found that elevating the infrastructure of the 100 biggest US seaports by 2 meters would cost $57 billion to $78 billion in 2012 dollars (equivalent to $69 billion to $103 billion in current dollars), and would require “704 million cubic meters of dredged fill ... four times more than all material dredged by the Army Corps of Engineers in 2012.”

“We’re a rich country,” Becker said, “and we’re not going to have nearly enough resources to make all the required investments. So among ports there’s going to be winners and losers. I don’t know that
The long-term nature of sea level rise, combined with the deficiencies and expense of the proposed solutions, have largely prevented seaport managers from addressing the threat. A 2020 study in the Journal of Waterway, Port, Coastal, and Ocean Engineering that Becker coauthored found that of 85 US maritime infrastructure engineers who responded to a survey, only 29 percent said their organizations had a policy or planning document for sea level rise, let alone had acted on one. In addition, the federal government offers no guidance on incorporating sea level projections into port design. “This leaves engineers to make subjective decisions based on inconsistent guidance and information,” the study said, and “leads to engineers and their clients disregarding [sea level change] more frequently.”

In response to the threat of increasing supply chain disruption, manufacturers are considering enlarging their inventories or developing “dual supply chains”—supply chains that deliver the same goods via two different routes, so that if one breaks down, the other will prevent shortages. But both solutions would increase production costs, and would contradict the still-predominant “just in time” manufacturing approach, which relies on robust supply chains to eliminate the need for companies to keep extensive parts inventories in stock. American companies could shorten their supply chains, shifting production facilities back to the US or a nearby country, but in many cases they would be removing their factories from the constellation of suppliers that grew up around them in countries such as China and Vietnam.

On top of all this, there’s a built-in inertia in supply chain management. “[L]ong-term strategy and logistics are opposite things,” Dale Rogers, a business professor at Arizona State University, said in an interview. “Logisticians are always trying to execute the strategy, but not necessarily develop it. They’re trying to figure out how to make something happen now, and climate change is a long-term problem.”

Source: www.wired.com

HOW CONTRACTORS USE TECH TO TIGHTEN UP SUPPLY CHAINS

ROBYN GRIGGS LAWRENCE

Centralized material tracking is key to shoring up the weak links in the procurement process exposed by the pandemic, construction execs say.

Published April 26, 2023

Contractors are beginning to centralize and automate their supply chain processes. The COVID-19 pandemic exposed the industry’s soft underbelly when it comes to materials procurement and management, but the next step — utilizing blockchain and artificial intelligence to track and predict material flow — is still several years away.

“We’re in a very fragmented business,” Tim Jed told Construction Dive, who started as Redwood City, California-based DPR Construction’s supply chain lead in February 2020, just a few weeks before COVID hit. “We procure things on a project-by-project basis, and materials are generally bought through subcontractors, so the general contractor doesn’t always have a line of sight to what’s going on with the material supply chain.”

Jed said it became clear that the firm had to figure out a way to quickly get and communicate a line of sight — “and that really meant we needed to think about process, and we needed to think about technology.”

Using several different tech solutions, Jed and his team cobbled together a centralized platform that warehouses all the information DPR gets from suppliers, subcontractors and its own project teams so that everyone within the enterprise can hop on a dashboard to search for real-time updates on supply chain issues, including regional and global material delays and supplier relationships.

Using the centralized platform, DPR’s supply chain team can proactively address issues and potential issues with manufacturers instead of leaving that up to project teams — “because if we wait to get information about a material through a subcontractor, it could literally be weeks, and by the time we get it, we’re late to the party,” Jed said.

Centralize first

Companies like DPR are ahead of the curve. Most contractors are still using splintered systems and manual spreadsheets, because it’s not easy to build a tech stack that supports centralized access to essential supply chain metrics.

“It’s very difficult to centralize at the moment because there are a lot of technologies, a lot of clients, a lot of
different ideas about how to do it," Michael Hardman, vice president and head of cost management for the New York City office of construction project management service provider Turner & Townsend told Construction Dive. “So, just even embracing that technology and moving away from your traditional RFP, there’s definitely an element to improve there. The technology needs to be better. Adoption needs to be better as well.”

Across all industries, PwC’s 2023 Digital Trends in Supply Chain Survey found that 80% of respondents said supply chain technology investments haven’t fully delivered expected results. More than half of the engineering and construction companies in an IBM survey said they consider managing materials quality and risks a vital function, but only 38% said their supply chain functions were effective at it.

Startups are emerging to address the gap, and the pandemic has heightened their appeal. Kojo, an all-in-one materials management platform founded in 2018 that brings together field, office, warehouse teams and vendors to give contractors visibility into their supply chain from project takeoff to closeout, has seen its customer base grow by more than 100 times since 2020, CEO and founder Maria Davidson told Construction Dive.

“We saw a huge surge in demand because contractors needed to ensure they were getting the best deals at the best price and, crucially, that they were utilizing their warehouses and that everyone on their projects was using the same system,” Davidson said. “During the pandemic, we had a lot of contractors tell us all their data was in filing cabinets or in email inboxes. If they couldn’t get access to that inbox, they had no idea what had been ordered and what was outstanding.”

Kojo has about 12,000 active monthly users, who access its information via desktop computers, smart phones and tablets, and estimates it has saved its customers more than $22 million on materials orders, helped them cut 90% of waste on their jobs and reduced manual data entry by 75%.

AI and blockchain

Once contractors have centralized supply chain data and made it transparent, the next step is to analyze it using AI.

The IBM survey identified construction and engineering leaders whose organizations are furthest along in executing a digital supply chain strategy and found that more than three-quarters plan to invest heavily in cloud computing, predictive analytics, IoT and AI.

Though AI-driven supply chain management is still several years away, it will eventually allow companies to optimize inventory and sourcing, forecast supply and demand, manage warehouse inventory, spot potential disruptions and swap out materials based on pricing and availability.

Blockchain distributed ledger technology is also poised to bring improved visibility and transparency to supply chain processes, but it’s barely on contractors’ radars at this point. Implementing blockchain will require an industrywide effort to establish comprehensive audit trails.

“There’s not currently a focus in the industry on that,” Jed said. “The entire industry has to get on board. That will happen over time, but I think it will probably be slow.”

Digital Supply Chain Solutions

- **Cemex Go** is a digital platform that allows contractors to purchase products, track deliveries and manage orders.
- **COINS** cloud-based supply chain management software automates procurement processes and provides access to real-time information.
- **Geometrid** provides visibility and analytics across the supply chain, delivering real-time updates in an interactive BIM environment.
- **GoFor** provides same-day, last-mile delivery of construction materials, allowing users to track orders and costs, and provides contactless delivery of materials.
- **Kojo** is a materials management platform that gives contractors visibility into materials supply chain and gives them control over margins to reduce costs.
- **Oracle NetSuite ERP** is a cloud-based integrated solution offering real-time inventory visibility and procure-to-pay purchasing.
- **SiteSense** streamlines material, inventory and equipment tracking with insights into material availability constraints.
- **Voyage Control** helps construction companies manage end-to-end supply chain functions including jobsite deliveries and payments, inventory control and compliance.

Source: Supply Chain Dive
SUSTAINABILITY QUIZ

1. The first Indian village fully powered by solar energy is
   a) Modhera
   b) Khordha
   c) Puliyr
   d) Chas
   carbon footprint should be brought under
   a) 1 ton
   b) 1.5 ton
   c) 2 ton
   d) 3 ton

2. Who among the following defined the concept of ecological footprint
   a) Henry Maslow
   b) Wackernagel
   c) Jason Duke
   d) Kazinokavi

3. Which of the following analyze the environmental aspects and potential impacts associated with a product
   a) Carbon footprint
   b) The triple bottom line
   c) Life Cycle Assessment
   d) Ecolabel

4. Ecological needs of the planet and the firms stewardship of the natural resources used in the production of goods/service is addressed under
   a) Financial responsibility
   b) Social responsibility
   c) Ethical responsibility
   d) Environmental responsibility

5. From an energy perspective the efficient mode of transportation is
   a) Rail
   b) Trucking
   c) Courier
   d) Air

6. Which of the following does NOT fall under sustainable procurement
   a) Saving energy and water
   b) L1 procurement
   c) Conservation of resources
   d) Optimizing transport efficiency

7. The average carbon footprint per person is 4 tons. To avoid a global temperature rise of 2 degree centigrade by 2050 the average

Quiz answers

1. b
2. d
3. c
4. d
5. a
6. c
7. b
8. d
9. b
10. c
**Introduction:** Design thinking is a human-centered approach to innovation that draws from the designer’s toolkit to integrate the needs of people, the possibilities of technology, and the requirements for business success. Design thinking can be applied to supply chain management to create innovative solutions that meet the needs of customers, suppliers, and other stakeholders. A design thinking diagram for supply chain management can show the different stages of the design thinking process and how they relate to the supply chain activities of plan, make, and deliver.

The diagram illustrates how the design thinking process can be aligned with the supply chain activities as follows:

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**Empathize**

- **Empathize:** This stage involves understanding the needs, pain points, and expectations of the users and stakeholders of the supply chain. This can include conducting interviews, surveys, observations, and other research methods to gain insights into their problems and goals.

**Define**

- **Define:** This stage involves synthesizing the findings from the empathize stage and defining the problem statement and the scope of the solution. This can include creating personas, journey maps, value propositions, and other tools to articulate the user needs and desired outcomes.

**Ideate**

- **Ideate:** This stage involves generating possible solutions that address the problem statement and meet the user needs. This can include brainstorming, sketching, prototyping, and testing different ideas and concepts that can improve the supply chain performance and efficiency.

**Plan**

- **Plan:** This stage involves selecting the most promising solution from the ideate stage and planning how to implement it in the supply chain. This can include defining the objectives, metrics, resources, timeline, and risks of the solution and how it will affect the supply chain activities of plan, make, and deliver.

**Make**

- **Make:** This stage involves executing the plan and developing the solution in the supply chain. This can include designing, building, testing, and deploying the solution and ensuring its quality, functionality, and compatibility with the existing systems and processes.

**Deliver**

- **Deliver:** This stage involves delivering the solution to the users and stakeholders of the supply chain and measuring its impact and value. This can include collecting feedback, monitoring performance, evaluating outcomes, and identifying areas for improvement or iteration.

Design thinking can be applied to supply chain problems to create innovative solutions that meet the needs of customers, suppliers, and other stakeholders. Some examples of design thinking in supply chain use cases are:

**AI and machine learning for autonomous supply chain planning:** Consumer packaged goods (CPG) companies can use AI and machine learning to integrate the entire end-to-end supply chain and run the majority of processes and decisions through real-time, autonomous planning. This can help them respond to changing demand patterns, optimize inventory levels, reduce costs, and increase revenue.

**Design for supply chain principles:** Design for supply chain is a part of the design for excellence (DFX) philosophy that focuses on creating designs...
that improve a certain aspect of a product. For example, design for manufacturing (DFM) aims to reduce manufacturing costs and complexity, design for assembly (DFA) aims to simplify product assembly and reduce assembly time, design for sustainability (DFS) aims to minimize environmental impact and waste. These principles can help supply chain managers improve product quality, efficiency, and customer satisfaction.

- **Blockchain for supply chain transparency and traceability**: Blockchain is a distributed ledger technology that enables secure and transparent transactions among multiple parties. Blockchain can be used in supply chains to track the origin, movement, and status of products and materials across different stages and locations. This can help improve visibility, accountability, security, and trust among supply chain partners. Blockchain can also enable smart contracts that automate transactions and enforce agreements based on predefined rules. Some industries that are developing blockchain use cases in their supply chains are agriculture, food supply, maritime logistics, pharmaceuticals, luxury goods, and fashion.

Design thinking can be applied to various areas within the supply chain to drive innovation, improve efficiency, and enhance customer satisfaction. Here are some specific applications of design thinking in different supply chain areas:

1. **Demand Forecasting and Planning**: Design thinking can help improve demand forecasting and planning processes. By empathizing with customers and understanding their buying behaviour, logistics companies can design data-driven forecasting models that take into account market trends, customer preferences, and other relevant factors. This approach can lead to more accurate demand forecasts, reducing inventory costs and minimizing stockouts or excess inventory.

2. **Supplier Relationship Management**: Design thinking can be applied to enhance supplier relationship management. By empathizing with suppliers and understanding their pain points and requirements, companies can design collaborative and transparent processes that foster better communication, trust, and long-term partnerships. This can lead to improved supplier performance, reduced lead times, and better supply chain resilience.

3. **Inventory Management**: Design thinking can help optimize inventory management processes. By empathizing with inventory managers and understanding their challenges, companies can design inventory systems that provide real-time visibility, automated replenishment mechanisms, and efficient stock allocation strategies. This approach can lead to lower carrying costs, reduced stockouts, and improved order fulfilment.

4. **Transportation and Logistics Optimization**: Design thinking can be applied to optimize transportation and logistics operations. By empathizing with drivers, logistics personnel, and customers, companies can identify pain points and design solutions that streamline route planning, enhance load optimization, and improve delivery tracking and communication. This can result in reduced transportation costs, faster order fulfilment, and enhanced customer experience.

5. **Sustainable Supply Chain Practices**: Design thinking can help integrate sustainability into supply chain practices. By empathizing with stakeholders and understanding environmental and social impact concerns, companies can design sustainable strategies and solutions. This can include optimizing packaging to reduce waste, implementing green transportation initiatives, and collaborating with suppliers to ensure responsible sourcing practices. Design thinking enables the exploration of innovative and eco-friendly approaches that align with sustainability goals.

6. **Supply Chain Risk Management**: Design thinking can be utilized to improve supply chain risk management. By empathizing with risk managers and understanding potential disruptions, companies can design robust risk assessment frameworks, contingency plans, and mitigation strategies. This approach helps in identifying vulnerabilities, designing resilient supply chain networks, and implementing proactive measures to mitigate risks.

7. **Continuous Improvement and Innovation**: Design thinking can foster a culture of continuous improvement and innovation within the supply chain. By encouraging collaboration and creativity among employees, companies can design processes that support idea generation, prototyping, and experimentation. This approach enables a proactive approach to problem-solving, encourages innovative thinking, and drives ongoing improvement across the supply chain.
Applying design thinking in supply chain areas enables companies to gain a deeper understanding of the needs and pain points of stakeholders involved, leading to more effective and customer-centric solutions. By focusing on empathy, collaboration, and creativity, organizations can drive positive change and achieve competitive advantages in the dynamic supply chain landscape.

**Case Study: Optimizing Last-Mile Delivery for an E-commerce Company**

**Challenge:** An e-commerce company is facing challenges in its last-mile delivery operations, resulting in customer dissatisfaction, high delivery costs, and inefficient routes. The company wants to improve its last-mile delivery process to enhance customer experience and operational efficiency.

**Design Thinking Approach:**

1. **Empathize:** The company conducts interviews and surveys with customers, delivery drivers, and customer service representatives to understand pain points and gather insights. They identify issues such as missed deliveries, long wait times, and lack of real-time communication.

2. **Define:** Based on the insights gathered, the company defines the problem as the need to optimize last-mile delivery to reduce delivery times, increase delivery success rates, and enhance customer communication.

3. **Ideate:** The company conducts brainstorming sessions with cross-functional teams, including logistics managers, drivers, customer service representatives, and IT experts. They generate ideas such as leveraging route optimization software, implementing real-time tracking and notifications, and introducing flexible delivery options.

4. **Prototype:** The company develops a prototype solution that integrates a route optimization algorithm into their delivery management system. The system enables real-time tracking and notifications for customers, and offers delivery flexibility through features like rescheduling and alternative pickup points.

5. **Test:** The company selects a pilot location or a specific customer segment to test the prototype solution. They monitor delivery times, success rates, and customer feedback. Feedback from customers, drivers, and other stakeholders is collected to refine the solution.

6. **Implement:** After incorporating the feedback, the company implements the optimized last-mile delivery solution across its operations. They provide training to drivers and customer service representatives on using the new system effectively.

7. **Evaluate:** The company continuously monitors key performance indicators, such as on-time delivery, delivery success rates, customer satisfaction scores, and cost savings. They gather feedback from customers and internal stakeholders to make further improvements and iterations.

**Results and Benefits:** By applying design thinking to optimize last-mile delivery, the e-commerce company achieves the following benefits:

- **Improved customer satisfaction:** Customers experience faster, more reliable deliveries and receive real-time notifications about their shipments, reducing frustration and enhancing the overall shopping experience.

- **Increased operational efficiency:** The route optimization algorithm helps reduce delivery times, minimize fuel consumption, and optimize driver workloads. This leads to cost savings and improved resource utilization.

- **Enhanced communication and flexibility:** Real-time tracking and notifications enable customers to stay informed about their deliveries, enhancing transparency and reducing customer inquiries. The introduction of flexible delivery options, such as rescheduling and alternative pickup points, improves convenience and reduces delivery attempts.

- **Continuous improvement:** By collecting feedback and monitoring key metrics, the company can further refine its last-mile delivery process, address emerging challenges, and explore additional opportunities for innovation.

Through the design thinking approach, the e-commerce company successfully transformed its last-mile delivery operations, resulting in improved customer satisfaction, optimized processes, and cost savings.

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**Footnotes**

1 HoD, Business Analytics, Universal Ai University, Karjat

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OUR COLLECTIVE INTELLIGENCE MUST STEER DIGITAL AND GREEN TRANSFORMATIONS

Digital technologies can improve the lives of many people and help to put us back on track for the SDGs.

But to fully reap this potential, we must redouble efforts to address persistent digital divides in the population and among countries and regions, which amplify existing social, cultural, and economic inequalities.

By Olga Algayerova, UN Under-Secretary-General and Executive Secretary of the UN Economic Commission for Europe (UNECE)

How can we rescue the vision of the 2030 Agenda for Sustainable Development and get in shape for Our Common Agenda for 2050? Part of the way forward is without doubt to embrace the digital and green transitions.

As we heard at the 70th session of the UN Economic Commission for Europe – UNECE’s highest decision-making body – many countries across Europe, Central Asia, and North America are doing just that to provide fresh impetus for sustainable change. Examples are manifold. They range from mandatory green public procurement and 41% of investment in Cyprus’ national recovery and resilience plan going to green initiatives to accelerated efforts in Ukraine to ensure public access to environmental information online. Other examples include:

- innovation for green and climate technology in Israel;
- recognition in Kazakhstan’s National Development Plan of the strong links between environmental action – including on biodiversity and air quality – and digital transformation, with some 150,000 people already employed in the IT sector; and
- multistakeholder cooperation in the EU to secure a sustainable supply of the Critical Raw Materials, leveraging UNECE resource management tools.

The digital and green transitions are both cause and consequence of great disruption in our societies and economies. As the countries of the region have stressed, we must adapt our policy and regulatory frameworks to the new context created by the digital transformation, but also stir the changes in a direction that advances the implementation of the 2030 Agenda.

Digital technologies can improve the lives of many people and help to put us back on track for the SDGs. But to fully reap this potential, we must redouble efforts to address persistent digital divides in the population and among countries and regions, which amplify existing social, cultural, and economic inequalities.

What will our region look like in the year 2050?

Taking stock of current trends as we look toward the middle of this century, we can anticipate many changes that will shape the region in significant ways:

- One of the most prominent trends is population ageing, which will put pressure on healthcare systems, pensions, and social services.
- Artificial intelligence (AI), automation, and robotics will transform many aspects of our lives, including the workplace, transportation, and communication. This will create new opportunities for innovation and growth, but it will also disrupt traditional industries and challenge the workforce to adapt and reskill.
- The region will have to continue to adapt to the new realities of climate change and work together to mitigate its worst effects.
- These changes will all have profound effects on the political landscape of the region, leading to new political movements and coalitions.
- In the realm of international relations, we can expect countries in our region to continue to play an important role but may see a shift in the balance of power on the world stage.

Do these bulleted projections resonate with you? Do they speak to your perspectives and realities, at national or local level?

In fact, these forecasts do not originate in my own analyses or those of UNECE, but in the artificial intelligence of ChatGPT. No doubt many of you, like UNECE, are already experimenting with such tools, as together we imagine how harnessing these powerful capabilities in a smart way could free up capacity, creativity, and resources to dedicate to the most value-added activities.

Tools like this are capturing business, political, public, and media attention, from discussions at Davos to universities, creative industries, and parliaments.

UNECE is already substantively engaged in AI in a number of areas, from supporting national statistical offices to explore the potential of machine learning, to forging binding international regulations that define the technical requirements for automated driving.
What is the potential for AI-generated information, content, and analysis to replace that produced by humans? How can we ensure its safe and ethical use? These were among the many considerations emerging from the rich horizon scanning exchanges held in the preparatory side events for the Commission’s session held in early April, which – following UNECE’s first ever Youth Dialogue last December – also stressed the need for stronger youth and intergenerational engagement in our work.

The potential is huge, and we are barely scratching the surface. Together, we must continue to embrace digital transformation, in an inclusive manner, to shape our green and sustainable future. But as we reflect on the 75 years since the establishment of UNECE in the ashes of World War II and look ahead to the future, I wish to stress one point.

There is nothing artificial in the collective intelligence of multilateral cooperation, dialogue, and shared human endeavor across political and technical spheres, which is the very DNA of UNECE.

Our Commission has added a year to life expectancy in Europe by reducing air pollution under the Air Convention. It lays the groundwork for trustworthy and reliable official statistics that underpin all policy making and the work of the entire UN. It reduces cross-border transport time for goods by up to 80% thanks to the TIR Convention, among so many more shared achievements.

In this uniquely difficult period for the region, as geopolitical tensions stirred by the war in Ukraine aggravate interlocking economic, social, and environmental challenges, the unique role of UNECE is more valuable than ever. I am immensely proud of our joint work, and invite all governments of our 56 member States, together with all stakeholders in our region, to put the vision for a digital and green future into action, harnessing cooperation at UNECE.

Source: IISD

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**INDIA GENERATES 3.5 MILLION TONNES PLASTIC WASTE ANNUALLY: ENVIRONMENT MINISTER**

India is generating 3.5 million tonnes of plastic waste annually, Union Environment Minister Bhupender Yadav said on Tuesday as he launched several green initiatives for plastic waste management.

Speaking at the launch of mascot ‘Prakriti’ to spread awareness among masses about small changes that can be sustainably adopted in lifestyle for a better environment, Yadav urged everyone to join the efforts to beat plastic pollution and work towards a better future. “Plastic has become one of the most pressing environmental issues that we are facing today. India is generating about 3.5 million tonnes of plastic waste annually and the per capita plastic waste generation has almost doubled over the last five years. “Plastic pollution adversely affects our ecosystems and is also linked to air pollution,” he said.

The minister also launched several initiatives like National Dashboard on Elimination of Single Use Plastic and Plastic Waste Management to bring all stakeholders, including central ministries, departments, states and Union Territories, at one place and track the progress made for elimination of single-use plastic (SUP) and effective management of such waste.

Another initiative that was launched was Extended Producer Responsibility (EPR) Portal for plastic Packaging for improving accountability, traceability, transparency and facilitating ease of reporting compliance to EPR obligations by producers, importers and brand-owners.

A mobile app for Single Use Plastics Grievance Redressal was also launched to empower citizens to check sale/usage/manufacturing of SUP in their area and tackle the plastic menace.

The various green initiatives taken by Ministry of Environment and Central Pollution Control Board (CPCB) to ensure effective Plastic Waste Management (PWM) in the country, were launched at the event, which was also attended by Minister of State Ashwini Kumar Choubey and senior officials of the government.

To tackle the challenge of plastic pollution, Prime Minister Narendra Modi announced India’s pledge to phase out single-use plastics by 2022.

“Taking the momentum forward” and stressing on the need for active public participation, Yadav also administered ‘Swachh Bharat Harit Bharat Green Pledge’ to the gathering.

He appreciated the innovative solutions developed by start-ups, entrepreneurs and students in the India Plastic Challenge—Hackathon 2021, highlighting the immense talent and potential of India’s youth.

Yadav said India sends a message of hope and optimism that humanity can meet the challenges posed by climate change and will be a part of the solution to climate change.

Source: The Economic Times
SEVEN POLICY MEASURES NEEDED TO BEAT PLASTIC POLLUTION IN OUR CITIES

PINKY CHANDRAN

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NEED FOR A BOLD POLICY TO TACKLE PLASTIC WASTE

For better or worse, we are married to plastics, and plastics have permeated into our very being. What was once invisible, is suddenly all round us, in the form of waste and pollution. Simple everyday plastic products such as water bottles, plastic bags, toys, throw-away cutlery, fast fashion, food packaging, personal care products, all seemingly harmless, are all causing severe environmental problems, in the form of plastic pollution. From clogged storm water drains to beach litter, from dead rivers to air and soil pollution. Surgeries performed on animals to remove plastic from the bellies make it to the news regularly.

Plastic pollution is no longer a local problem, and world over, legislation and interventions to address the issue are on the rise. But addressing the issues of plastic pollution, through a singular lens of either waste management, marine litter or single-use plastics is not sufficient, as it further compounds the problem of effectively finding solutions.

What is required is a bold plan, a convergence, a commitment and a coming together of all the countries around the world to holistically deal with the issue that affects human health, biodiversity, environment and climate change.

State of plastic pollution in India

In December 2021, the issue of plastic pollution made headlines, with news of India’s plastic waste generation doubling in the last five years, with an average annual increase of 21.8 per cent. This was revealed in a reply from Bhupender Yadav, Union Environment Minister, to a question in the Lok Sabha on whether the Government was monitoring the quantity of plastic waste flowing into the sea.

The Central Pollution Control Board’s (CPCB) annual reports also point to the increasing numbers: from 15, 89, 393 tonnes per annum in 2015-16 to 34, 69, 780 tonnes per annum in 2019-20, with the exception in 2016-17 where the recorded numbers state 15,68,733 TPA. The CPCB’s report observes that India is the fifth highest generator of plastic waste in the world. Of the ten most polluted rivers that contribute to plastic debris, three flows through India: the Ganga, Indus and Brahmaputra.
Engineering Research Institute (CSIR-NEERI), on municipal solid waste (MSW) components of 12 high-altitude cities in India, showed that the plastic composition of the garbage generated, calculated on weight basis, stood at 8.7%. According to Roshan Rai, Zero Waste Himalayas, “The Himalayan Cleanup since 2018 has consistently shown that there is not a patch in the Indian Himalayan Region free of plastic pollution. This is of great concern considering the importance and fragile socio-ecology of the Himalaya.”

A study in July 2018 by IIT Kharagpur surveyed drains in Delhi, and found that 22% of the silt in drains was gutkha and pan masala packets and 27 percent was plastic bags and plastic films. Interestingly, section 4(f) of the Plastic Waste Management Rules, states “Sachets using plastic materials shall not be used for storing, packing or selling gutkha, tobacco and pan masala”.

Given these alarming statistics, plastic waste will continue to pose a huge risk. While land based sources contribute to plastic marine debris in a big way, the problem of plastic waste is all pervasive, across ecosystems.

Legislative instruments: In 2016, the Union Ministry of Environment, Forest and Climate Change (MoEF&CC), released the Plastic Waste Management Rules 2016. The rules sought to address the issue of plastic waste, by phasing out multilayer plastic packaging, which currently cannot be recycled, within two years of the notification.

However in 2018, through an amendment, the clause read ‘Manufacture and use of multi-layered plastic which is non-recyclable or non-energy recoverable or with no alternate use of plastic (emphasis added) if any should be phased out in two years’ time’. This, in essence, identified certain problematic plastics (considered recyclable, energy-recoverable or having alternative use) and paved the way for their incineration/co-processing, instead of mandating product redesign or phasing out.

Fixation with single-use plastic since 2018: 2018 was also notable, as the term ‘single use’ was voted the word of the year by Collins Dictionary. Single-use can be described as ‘made to be used only once’. In the same year, India hosted the World Environment Day and announced an ambitious plan to Beat Plastic Pollution, by eliminating all single use plastic in the country by 2022. Prime Minister Narendra Modi, called for a global movement to beat plastic pollution. Soon enough, many states and cities in India, implemented single-use plastic bans, with varying priorities. Some have banned plastic bags and permit a certain thickness, while others have banned certain plastic items. Digital media campaigns around single-use plastics gained momentum with the Swachh Bharat Mission, which awarded points to states that have imposed the ban.

Before the pandemic, on the surface at least, it would have seemed that India was on track to dealing with the issue of single-use plastics with state governments taking the lead in penalising and fining citizens and vendors alike, but it all changed with the pandemic. Single-use plastic is on the rise, and enforcement of the ban has taken a back seat.

In 2021, the government released the amended Plastic Waste Management Rules 2021 with the aim of phasing out certain single-use plastics. The government also released the draft EPR regulations, which fell short of addressing the plastic pollution problem.

India at the United Nations General Assembly: Parallely, India pursued its global vision to phase out single-use plastics at the 4th United Nations Environment Assembly (UNEA) in 2019. India sponsored a draft resolution, titled “Phasing Out Single-use Plastics” but was disappointed when the final resolution adopted turned out to be a watered down version, with the key phrase “phase out” being deleted. The title of the resolution was changed to read, ‘Addressing single-use plastic products pollution’, and it called upon member states to develop and implement national / regional actions and pushed the deadline to reduce it to 2030.

India continues its advocacy around single use plastics and this year at the UNEA 5.2 and has proposed a new resolution titled ‘Framework for addressing plastic product pollution including single-use plastic product pollution’, which builds on the previous one sponsored by India. While acknowledging that one of the main sources of plastic pollution and marine litter originates from land-based sources, it raises an urgent concern over the increase in the use of single-use plastic products.

The new resolution
$ Calls for international collaboration and cooperation
$ Encourages multi stakeholder dialogue
$ Recognises the need to adopt principles of waste hierarchy of reduce, reuse and recycle
§ Stresses implementation of Extended Producer Responsibility

§ Invites member states to prepare national or regional actions plans through policy and legal frameworks

§ Underlines the need for financing and technology mechanisms

§ Calls for voluntary data disclosure and monitoring

§ Presently, at UNEA 5.2, India’s resolution is being put in the cluster with two other resolutions. The first one was sponsored by Rwanda and Peru in September 2021, calling for an internationally legally binding instrument on plastic pollution. The second one is by Japan that calls for an international legally binding instrument on marine plastic pollution.

§ **What India must do — domestically and internationally**

§ At the national level, this year, the government has released the Plastic Waste Management Rules 2022 for public comments, which in essence contains similar provisions as the EPR regulations, and fails to holistically address the problem of plastic pollution.

§ At the international level, India’s standalone current proposed resolution is neither ambitious nor aggressive, and pales in comparison with the Rwanda Peru Resolution. By singularly focussing on the problem of single-use plastics, it limits its scope to comprehensively address the plastic pollution problem holistically.

§ Ahead of UNEA, India has just released the Plastic Waste Management (Amendment) Rules, 2022, with an aim to provide a roadmap for plastic packaging waste. Yet the new rules fall short of holistically including all stakeholders, including the entire recycling value chain that significantly contributes to retrieving plastic waste.

As Lakshmi Narayan, Co-founder of Swachh, Pune says, “Time and again, India fails to acknowledge, incorporate and legitimise the right people, shifts focus from problematic plastics and facilitates potentially undesirable end-of-life processes.” Instead, India must ponder over the following points, and

1. Demand a globally binding treaty that addresses pollution from marine, terrestrial and freshwater environments, given the transboundary nature of the issue, using a lifecycle analysis approach targeting upstream (production), midstream (design) and downstream (waste management). Voluntary targets are problematic and lack seriousness to actively solve the problem.

2. Amplify the need to recognise informal waste workers and mandate their inclusion in the waste management systems at the global level. This is a significant direction that India has already taken at the national level with the Solid Waste Management (SWM) Rules 2016 and the Plastic Waste Management (PWM) Rules 2016, but it must now push for these to be included in the current framework and global treaty dialogues.

3. Formulate an Integrated River, Marine and Ocean Litter Policy and a framework to address plastic waste in remote and mountainous areas at the state and central levels, together with both SWM and PWM Rules.

4. Launch National and State Action Plan under the PWM Rules as a long term, time-bound national level strategy to tackle the issue of plastic waste across the country in a comprehensive manner with targets to achieve by 2025, incorporating EPR targets as specified in the new PWM Rules Amended in 2022.

5. Undertake comprehensive data management and monitoring across the city, and make data available in public domain.

6. Take a tough stand on end of life disposal to address the issue of plastics. Lakshmi adds, “India needs a comprehensive, holistic lifecycle approach, with a graded phase out starting with multi-material and single-use items that pose a waste management challenge, and a close evaluation of end-of-life processing technologies based on their health and environmental impacts, and implications for continued production of plastics. This can go a long way in setting the tone for a meaningful Plastics Treaty”.

7. Ramp up behaviour change communications and implementation. As Myriam Shankar, founder, The Anonymous Indian Trust (TAICT), Bengaluru says “In my mind pollution has less to do with the material, but with human behaviour and proper implementation of SWM by the government”.

Source: Citizen Matter
STRENGTHENING THE SUPPLY CHAIN IN 2023: IS SUSTAINABILITY A SOLUTION TO DISRUPTION?

ANANTHA RAO, CHIEF TECHNOLOGY OFFICER AND CHIEF OPERATING OFFICER AT NUVIZZ.

Despite extensive evidence that strengthening sustainability efforts brings long-lasting, efficacious results, the corporate community has been hesitant to dive in. Their deep-rooted concern is that changing the way business is done is bound to stunt productivity and reduce profits.

While this belief is ingrained in most industries, the supply chain and transportation sectors seem to have a different view. Practitioners in this field know that operating in a green manner will not only keep the planet sustainable, but also promote the long-term viability of the operation itself. Few industries are in a better position than the supply chain and transportation industry to achieve both goals — improving performance and economic viability while contributing to a healthier planet.

These advantages are enough to persuade most, but for hesitant business owners, the soon-to-be-implemented climate disclosure requirements might be just the nudge they require to take action. The proposed ruling from the Securities and Exchange Emissions (SEC) would oblige every publicly traded company to provide their climate reports from the previous year, including Scope 3 emissions.

While this may seem daunting, it’s widely known that practicing mindfulness when it comes to your company’s environmental impact makes business sense. This is why the current push for sustainability could not be better aligned with the needs in supply chain and transportation.

The proposition is simple: achieve sustainability goals, and you gain a stronger profit.

Consider these five priorities for transportation companies:

1. **Reduce Mileage**: The environmental imperative is to reduce carbon emissions. But if transport companies can reduce their mileage and improve asset utilization, they can reduce costs by up to a third. Simply achieving more accurate ETAs can reduce miles by eliminating re-deliveries and missed appointments. With the right strategies, knowledge and technology tools, this is absolutely possible in today’s industry.

2. **Increase Freight Pooling Operations**: Hardly a radical concept for LTL carriers, pool distribution combines goods into shipments using larger trucks and trailers. It has been compared to carpooling — but for goods rather than for people. Reduction of carbon emissions is also the environmental imperative here, and estimates are that transport companies can save 10-15% on overall costs by getting the most out of using pool-point operations.

3. **Reduce Paperwork**: We all understand: The forests will cheer when we use less paper, but so should any company involved in the transport of goods. That’s why many have made this a key priority. In recent years we have seen the emergence of excellent technology to not only replace time-consuming paperwork, but to speed up the processes that depend on it. As just one example, many new transportation management systems can automate invoicing, and enable quick, easy digital payments. Not only are you eliminating the use of paper for items like invoices and bills of lading; you’re also getting paid faster. So your cash flow gets a boost, just like the one you’re giving the forests.

4. **Reduce Shrinkage**: Mis-laying inventory is a nightmare. It costs carriers money, forces delays on customers, and often requires items to be re-manufactured and re-shipped — often at a loss for the carrier. By taking advantage of technologies like advanced scanning solutions, we are now seeing tools to protect against shrinkage. This not only prevents all the problems described above, but also results in sustainable consumption and production that bolsters the planet.

5. **Gain Network Visibility**: Enterprises can and should be able to collect information in real time so they can respond to potential supply chain disruptions. This could mean swapping carriers when a first option becomes unavailable, or navigating through a port delay. Both the environment and the company’s bottom line take a hit when supply chain disruptions cause delays and rising costs. Network visibility provides for the resilience that fights off these disruptions.

Carriers who have not prioritized sustainability must do so. The planet needs it, shippers will soon be asking about it (if they’re not already), and public policy will demand it. Don’t fall behind with sustainability, and be caught in the lurch when Scope 3 emissions reporting becomes a requirement. The time to act is now. Putting yourself in a reactive position will only lead to more headaches and potential trouble down the line.

The good news is that all of those goals will make carriers more profitable, efficient, and reliable as a business partner. Ecological concerns may be prompting the effort, but it’s an effort any carrier will find well worth making.

Source: Supply Chain Brain

HMM Materials Management Review
THE RELEVANCE OF LIFE CYCLE APPROACHES TO BEAT PLASTIC POLLUTION

Plastic pollution is a global problem. Approximately 7 billion of the 9.2 billion tonnes of plastic produced from 1950-2017 became plastic waste, ending up in landfills or dumped. Plastic pollution can alter habitats and natural processes, directly affecting millions of people’s livelihoods. Inger Andersen, executive director UN Environment Programme already mentioned it:

“We will not recycle our way out of the plastic pollution crisis: we need a systemic transformation to achieve the transition to a circular economy.” The endorsement of UN Member States during UNEA 5.2 to End Plastic Pollution and forge an international legally binding agreement by 2024, is a very important step. But how do we achieve the systemic transformation?

The role of the Life Cycle Initiative in the International Negotiating Committee Process

The first step in the Committee Process is the Open-Ended Working Group (OEWG), which took place in Dakar (Senegal) between 30 May and 1 June 2022. A key element of the resolution relates to the engagement of all relevant stakeholders across the “full life cycle of plastics”. The Life Cycle Initiative has co-convened a series of Multi-Stakeholder Dialogues during the OEWG, along with the Global Partnership on Marine Litter (GPML) and the Green Growth Institute (GGGI).

Online and onsite participants of different stakeholder groups have shared their perspectives during the Dialogues, focusing on the science behind the key actions along the plastics life cycle, upstream, midstream and downstream parts of the plastics value chain, and cross-cutting topics such as the participation of youth and consumers, finance and the socially just transition. For the full programme: https://bit.ly/DialoguesPlastic

The full life cycle of plastic needs to be addressed

Addressing plastic pollution, including in the marine environment, requires a new way of thinking that looks at the entire life cycle of plastics. A life cycle approach to plastic ensures the identification of key hotspots in the production and consumption system by considering all potential impacts (on climate, ecosystems, toxicity, jobs, economy, etc.) caused by plastic products, services (and their alternatives), in each stage of their life cycle, from the extraction of raw materials, processing of secondary materials, to product manufacture, distribution, maintenance and use, and end of life management. In this way, a life cycle approach also helps addressing potential trade-offs between environmental impacts and sustainability pillars and can orient the selection of the best solutions for the environment with best socio-economic implications.

Key Elements of a Life Cycle Approach to Beat Plastic Pollution

We need to ensure that substitutes for plastic do not result in negative environmental impacts

In most cases, Life Cycle Assessment studies suggest that substitution of single-use plastic products by single-use products made of other materials is not a useful outcome. (See those reports for more discussion on this issue). Shifting to reuse schemes (which also need to be made possible) is more effective.

Development of global ‘REUSE PORTAL’ for scaling reuse

With only 9% of global plastic waste being recycled, managing waste once it’s generated is not nearly enough. How can we scale waste prevention solutions focused on reuse? WWF, the Life Cycle Initiative and the World Economic Forum are partnering with stakeholders around the world to create a one-stop-shop Reuse Portal designed to provide practical, action-oriented tools and networks to scale reuse solutions. Who can engage? The Portal is an open collaboration platform welcoming stakeholders from all regions and walks of life – innovators, large and small businesses, policymakers, activists, experts, consumers and citizens. The platform will serve not only as a global ‘centre of excellence’ providing credible guidance and inspiring with best practices; it is also designed to enable national and local stakeholders to take action and accelerate reuse solutions in their organisations and communities.

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Source: www.lifecycleinitiative.org

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WTO UPDATE

WTO MEMBERS REVIEW WAYS TO FACILITATE DIGITAL TRADE AND ELECTRONIC TRANSACTIONS

WTO members on 16 May shared experiences on facilitating digital trade and electronic transactions and discussed what the WTO can do to address this topic. The discussions took place in a dedicated session under the Work Programme on Electronic Commerce.

Singapore presented its experience with the TradeTrust framework, an initiative connecting governments and businesses to a public blockchain to enable safe exchange of electronic trade documents across digital platforms. This framework relies on digitalisation to avoid difficulties in undertaking transactions and to cut costs associated with paper-based trade across borders.

The United Kingdom made a presentation on trade digitalisation, which focussed on utilising digital technologies to improve trade processes and to make trade transactions easier and faster, especially for small business. It noted that trade digitalisation can be promoted by addressing legal, technical and commercial barriers to the digitalisation of paper-based processes.

Brazil presented its experience on implementing electronic “single window” systems for cross-border transactions and the benefits such a system brings. These benefits include achieving a faster clearance time, increasing government revenue, reducing compliance costs and improving the transparency and efficiency of customs procedures. Several members shared their practices in free trade agreements in areas such as paperless trading, e-payments, e-contracts, e-signatures, e-invoicing and electronic transaction frameworks. They highlighted, in particular, some specific obstacles that hinder digital trade facilitation.

Ambassador Usha Dwarka-Canabady of Mauritius, the facilitator of the Work Programme on Electronic Commerce and the e-commerce moratorium, welcomed members’ exchanges on their national practices, underlining the broad geographical spectrum of the presentations.

Advanced online workshop on Government Procurement Agreement concludes

More than 60 government officials from 34 WTO members and observers deepened their knowledge of the WTO Agreement on Government Procurement (GPA) 2012 at a workshop held virtually from 17 April to 12 May. Participants discussed improving the transparency and efficiency of government procurement procedures and the advantage of creating open and competitive government procurement markets, among other topics. The participants in the 2023 Advanced Global Workshop on the GPA 2012 comprised government officials with experience in trade and government procurement policy matters from 34 economies across the world.

Opening the workshop on 17 April, WTO Deputy Director-General Anabel González highlighted the importance of government procurement for economic growth and sustainable development and its role in “building infrastructure and delivering essential public services for the benefit of citizens”.

She noted that the GPA 2012 can be seen as a “gold standard” that serves as a template for many government procurement provisions in regional and bilateral free trade agreements around the world. DDG González also noted the importance of the Agreement for “promoting the conservation of natural resources and the protection of the environment”. Participants delved into the implementation of the GPA 2012, the benefits and potential challenges for other WTO members of acceding to the Agreement, the work of the GPA Committee and the benefits of observership to the Committee. The parties to the Agreement and observers to the Committee can be found here.

The workshop also covered sustainable procurement, the participation of small and medium-sized enterprises in government procurement markets, e-procurement, emergency procurement and the role of government procurement in helping to achieve good public health outcomes.

Two interactive breakout sessions were organized to facilitate participants’ understanding of the GPA 2012 and its market access dimension. As part of the workshop, an online panel discussion was organized on the role the GPA 2012 can play in preventing corrupt practices in government procurement. The recording of the session can be found here.

The workshop benefited from the expertise of numerous policy experts from national authorities, international organizations and academia as well as the WTO Secretariat.

Source: WTO Website
Modes of Procurement and Bidding Systems in Public Procurement

Contd. from last issue pages 24 - 33 ...

This is the fourth article in the series of articles for Public Procurement. This is in continuation of third article in the April 2023 issue from pages 13 to 21 titled “Supplier Relationship Management”. This article contains general introduction, procurement through open, limited and single tender, procurement on nomination basis and procurement without quotation and direct purchase by purchase committee. Other methods will be covered in next issue of MMR.

Purchase through CPO - Risks and Mitigations

Since it is a purchase by a third party, the Indent must be detailed and self-sufficient to ensure all Technical and Commercial requirements.

Mitigation strategies are to ensure vetting and certificates from technical, finance and procurement wing about completeness of Indent, before despatch. In critical and large procurements, liaison may be maintained with the procuring organisation.

There is also a risk of delays in finalisation of contract by the Procuring Entity, which may not be responsive to indenting organisations urgencies, especially if procurement involves clubbing of Indents from a number of organisations.

To mitigate such risk liaison may be maintained with the Procuring Entity. In case abnormal delay is taking place, small procurement to tide over urgencies may be made directly.

Another risk is that the Supplier may not feel answerable to the Indenter and may not be responsive towards delivery, quality and after sales support. If problems arise, it may require a dilatory tripartite correspondence.

To mitigate this, proper commercial clauses may be included in the Indent to ensure responsiveness of supplier to the Indentor. Liaison with Procuring Organisation would also mitigate such risks.

Bidding Systems: Bidding systems are designed to achieve an appropriate balance between the countervailing needs for Right Quality, Right Source and the Right Price under different complexities/criticality of Technical requirements and value of procurements. In certain critical and complex requirements, the technical and financial capability of Source of supply becomes an important determinant for value for money. Depending on the complexity and criticality of requirement, criticality of capability of Source and value of procurement, following types of bidding systems may be used.

Single Stage Bidding System: In single stage bidding, all bids are invited together in a single envelope or in multiple envelopes system. This bidding system is suitable where technical requirement are simple or moderate; capability of source of supply is not too crucial and the value of procurement is not too high;

Single Stage Single Envelop System: Where qualitative requirements and technical specifications are clear; capability of source of supply isn’t critical and value of procurement is low or moderate, the single envelop system, where eligibility, technical/commercial and financial details are submitted together in the same envelop may be followed. This is the simplest and the quickest bidding system and should be the default system of bidding. The lowest responsive priced bid that meets the eligibility criteria, technical and commercial requirements laid down in the bid documents is declared as successful.

Single Stage Two Envelops System (Two Bid System) (Rule 163 of GFR 2017): In technically complex requirements but where capability of source of supply is still not crucial and value of procurement is not low, a two envelop system may be followed.

lx) The tenderers should be asked to bifurcate their quotations in two envelopes. The first envelop, called the techno-commercial bid, contains the eligibility, technical quality and performance aspects, commercial terms and conditions and documents sought in the tender, except the price and relevant financial details. In the second envelop, called the financial bid, the price quotation along with other financial details are submitted. Both the envelopes are to be submitted together in a sealed outer envelope;

lxii) If required, Technical specification and techno-commercial conditions should be modified, in a pre-bid conference in the two envelop tender and it would be desirable not to invite fresh financial bids after opening of the techno-commercial bids;

lxii) The techno-commercial bids are to be opened in the first instance on the bid opening date and time, and scrutinised and evaluated by the TC with reference to parameters prescribed in the tender documents and responsive, eligible and technically compliant bidders are decided;

Thereafter, in the second instance, the financial bids of only the techno-commercially compliant offers (as decided in the first instance above) are to be opened on a pre-announced date and time for further scrutiny, evaluation, ranking and placement of contract. The financial bids of technically non-compliant bidders should be returned unopened to the respective bidders by registered acknowledgement due/reliable courier or any other mode with proof of delivery. In e-Procurement, financial bids of technically non-
compliant offers would not get opened;

**Single Stage Multiple Envelops System with pre-qualification**:
As discussed below, where the procurement is moderately complex and the time, effort and money required from the bidder to participate in a tender is not very high, instead of a separate stage of Pre-Qualification bidding (as described below, a clear-cut, fail-pass qualification criteria can be asked to be submitted as the first (additional) envelop in a three envelop single stage bidding, so that a bidder’s risk of having his bid rejected on grounds of qualifications is remote if due diligence is exercised him. Strictly speaking, this is not a pre-qualification but a Post-qualification of bidders. In the first instance on the bid opening date only the PQB envelops (also containing the EMD and other eligibility documents) are opened and evaluated to shortlist the responsive bidders who pass the Pre-qualification. Rest of procedure is same as two envelop system for only qualified bidders. Rest two envelops of unqualified bidders are returned un opened to the respective bidders by registered acknowledgement due/ reliable courier or any other mode with proof of delivery;

**Pre-qualification Bidding (PQB)**

i) In complex technical requirements where capability of source of supply is crucial (for example in procurement of complex machinery and equipment), for the successful performance of the contract, besides considering technocommercial suitability, it is necessary to ensure that competition is only among bidders with requisite capabilities matching the challenges of the task. In case bidders with inadequate capability are allowed to compete, the better qualified bidders would be eliminated since their bid price is likely to be higher commensurate with their higher capability infrastructure. Such situations a separate stage of PQB bidding system may be considered (or single stage multiple envelop bidding – please refer para above). In PQB stage, competent qualified tenderers are shortlisted by using a Pre-qualification Criterion (PQC—for example, i) past experience of similar contracts, ii) performance capability and iii) financial strength) prior to the issue of the bid document exclusively to shortlisted bidders in the second stage. Pre-qualification Bids (PQBs) should meet the norms of transparency, fairness and maintenance of competition. Since PQB system may strain the transparency principle and there is heightened risk of cartelization among shortlisted bidders, PQB should be done only as an exception under specified circumstances. It should not be a routine/ normal mode of procurement of goods and an eligibility criteria clause as part of single/ two envelop/cover tendering should suffice in normal/ routine situations. PQB bidding as a separate stage is contraindicated in the following circumstances:

a) Where procurement can be done through limited tender enquiries;

b) Where the Procuring Entity has at least three registered bidders of the category and grade matching tendered scope of procurement and financial limit;

c) Where the requirement is technically and commercially simple enough that pre-qualification of the bidder is not crucial for the performance of the contract, for example, Commercially Off The Shelf (COTS) requirements; and

d) Where the procurement is moderately complex and the time, effort and money required from the bidder to participate in a tender is not very high. A clear-cut, fail-pass post-qualification criteria can be specified in three envelop single stage bidding (instead of two stage bidding), so that a bidder’s risk of having his bid rejected on grounds of qualifications is remote if due diligence is exercised him.

ii) **Pre-qualification Criteria**: PQC should be unrestrictive enough so as not to leave out even one capable vendor/contractor. Otherwise, it can lead to higher prices of procurement/services. However, on the other hand, these criteria should be restrictive enough so as not to allow even one incapable vendor/contractor and thus vitiate fair competition for capable vendors/ contractors to the detriment of the buyer’s objectives. A misjudgement in either direction may be detrimental. Certain guidelines regarding the framing of PQC have been laid down. A sample PQC is given in Annexure

9. Due consideration should be given while framing PQC, to its effect on adequacy of competition. To encourage MSEs, past successful bidders, a call may be taken – whether PQC should apply to full quantity/packages or be proportional to part quantity/package quoted by a bidder. In case requirement is suddenly a multiple times the past procurements, blind adoption of past PQC may lead to disqualification of successful past vendors leading to inadequate competition. PQC should therefore be carefully decided for each procurement with the approval of CA for acceptance of the tender. It should be clarified in the PQB documents that bidders have to submit authenticated documents in support of eligibility criteria.

iii) **Advertisement and Notification**: The invitation for PQB shall be processed (advertised, bid document preparation, publicity and evaluation, and so on) in the same manner as a normal GTE or OTE (as the situation calls for) tender, ensuring the widest possible coverage. The PQC and evaluation criterion should be notified clearly in the PQB documents. The PQB documents should also indicate a complete schedule of requirements for which this PQB is being done, including approximate likely quantities of requirements. A minimum period of 45 (forty-five) days may be allowed for the submission of PQBs. In the case of urgency, duly approved by CA, the time limit may be reduced to 30 (thirty) days.

iv) **Evaluation**: At least in high value and critical
procurements, the credentials regarding experience and past performance, submitted by the successful bidder, may be verified as per eligibility criteria, as far as reasonably feasible, from the parties for whom work has been claimed to be done. The procuring entity shall evaluate the qualifications of bidders only in accordance with the PQC specified and shall give due publicity to the particulars of the bidders that are qualified on the relevant portals/websites.

v) Subsequent Procurement Tender: The pre-qualification shall be valid for such period as may be specified in the pre-qualification document and for a single subsequent procurement within this period, except when it is determined that engaging in fresh pre-qualification shall not result in enhanced competition. During the period of such validity, the procuring entity shall invite bids for procurement (Request for Proposals — RFP) from pre-qualified bidders and all other bids may be treated as unsolicited offers which are normally rejected. In case bids are not invited within such a period, fresh pre-qualification shall be done. It is desirable that the time gap between the pre-qualification approval and floating of the linked main procurement tender is less than six months.

Pre-Qualification Bidding – Risks and Mitigations:

Risk Mitigation

Pre-qualification criteria: PQB has the Lay down criteria when prequalification in potential of getting misused or being single stage or two stage bidding is applied without considering the restrictive warranted. Also lay down model PQC

Pre-Qualification Bidding – Risks and Mitigations:

Risk Mitigation

nature of competition. PQC should be relevant to the quality requirements and neither is very stringent nor very lax to restrict/facilitate the entry of bidders. These criteria should be clear, unambiguous, exhaustive and yet specific. Also, there should be fair competition. criteria for different types of procurements.

Dangers of Anti-competitive bidding: Since in a two stage PQB, shortlisted bidders are announced, there is heightened possibility of these bidders forming a cartel and quoting anti-competitive prices in the second stage of bidding.

Two stage PQB should be done only in appropriately justified situations. Alternatively Single Stage multiple envelop system may be used for prequalification, in which chances of anti-competitive behaviour and time-taken is significantly lesser.

Two Stage PQB process is a time-consuming

Contentious and Disputes: Both the successful and unsuccessful bidders tend to view PQB process as a means for creating rights/ privileges/ entitlement for them by way of hair-splitting, contentious or viciously legalistic interpretations of PQC criteria, disregarding the very rationale of the PQB and PQC. In the PQC a caveat against such tendencies may be included, asserting the right of procuring agency to interpret the PQC on common usage of terminologies and phrases in public procurement instead of legalistic and hair-splitting judgements and that their decision in this regard would be final.

Two Stage Bidding - Expression of Interest Tenders – Market Exploration

There are instances where the equipment/plant to be procured is of complex nature and the procuring organization may not possess the full knowledge of either the various technical solutions available or the likely sources for such products in the market. To meet the desired objectives of a transparent procurement that ensures value for money simultaneously ensuring upgradation of technology & capacity building it would be prudent to invite a two-stage Expression of Interest (EoI) Bids and proceed to explore the market and to finalise specifications based on technical discussions/presentations with the experienced manufacturers/suppliers in a transparent manner. Expression of Interest (EoI) bids may be invited in following situations:

- It is not feasible for the procuring entity to formulate detailed specifications or identify specific characteristics for the subject matter of procurement, without receiving inputs regarding its technical aspects from bidders;
- The character of the subject matter of procurement is subject to rapid technological advances or market fluctuations or both;
- The procuring entity seeks to enter into a contract for the purpose of research, experiment, study or development, except where the contract includes the production of requirements in quantities sufficient to establish their commercial viability or to recover research and development costs; or
- The bidder is expected to carry out a detailed survey or investigation and undertake a comprehensive assessment of risks, costs and obligations associated with the particular procurement.

(Rule 164 of GFR 2017)

The procedure for two stage bidding shall include the following, namely:

In the first stage of the bidding process, the procuring entity shall invite EoI bids containing the broad objectives, technical and financial eligibility criteria, terms and conditions of the proposed procurement etc without a bid price. On receipt of the Expressions of Interest, technical discussions/presentations may be held with the short-listed manufacturers/suppliers, which are prima facie considered technically and financially
capable of supplying the material or executing the proposed work, giving equal opportunity to all such bidders to participate in the discussions. During these technical discussions stage the procurement agency may also add those other stakeholders in the discussions who could add value to the decision making on the various technical aspects and evaluation criteria. Based on the discussions/ presentations so held, one or more acceptable technical solutions could be decided upon laying down detailed technical specifications for each acceptable technical solution, quality benchmarks, warranty requirements, delivery milestones etc. in a manner that is consistent with the objectives of the transparent procurement. At the same time care should be taken to make the specifications generic in nature so as to provide equitable opportunities to the prospective bidders. Proper record of discussions/presentations and the process of decision making should be kept.

lxix) In revising the relevant terms and conditions of the procurement, if found necessary as a result of discussions with the shortlisted bidders, the procuring entity shall not modify the fundamental nature of the procurement itself;

lx) In the second stage of the bidding process, the procuring entity shall invite bids from all those bidders whose bids at the first stage were not rejected, to present final bid with bid prices in response to a revised set of terms and conditions of the procurement; and

lxii) Any bidder, invited to bid but not in a position to supply the subject matter of procurement due to modification in the specifications or terms and conditions, may withdraw from the bidding proceedings without forfeiting any bid security that he may have been required to provide or being penalised in any way, by declaring his intention to withdraw from the procurement proceedings with adequate justification.

lxii) If the procuring entity is of the view that after Eol stage, there is likelihood of further participation by many more bidders and to avoid getting trapped into a legacy technology, the second stage bidding may not be restricted only to the shortlisted bidders of Eol stage and it may be so declared in the Eol document ab-initio. Thereafter in the second stage, normal OTE/GTE bidding may be done. Such variant of Eolis called ‘Non-committal’ Eol.

Invitation of Eol Tenders: In Eol tenders, an advertisement inviting expression of interest should be published. The invitation to the Eol document should contain the following information:

lxiii) A copy of the advertisement;

lxiv) Objectives and scope of the requirement: This may include a brief description of objectives and broad scope of the requirement. It may also include the validity period of empanelment;

lxv) Instructions to the bidders: This may include instructions regarding the nature of supply, fees for empanelment (if any), last date of submission, place of submission and any other related instructions;

lxvi) Formats for submission: This section should specify the format in which the bidders are expected to submit their Eol;

lxvii) The Eol document should be made available to the interested bidder as a hard copy as well as on its website in a downloadable form; and

lxviii) Eligibility criteria: The invitation to Eol should clearly lay down the eligibility criteria, which should be applied for shortlisting. Supporting documents required need to be clearly mentioned. An example of Eol eligibility criteria is shown in Table 1. However, appropriate eligibility criteria have to be designed, keeping in mind the specific objectives of the Eol.

Table 1: An example of Eol eligibility criteria

<table>
<thead>
<tr>
<th>Criteria Sub-criteria of Weightage</th>
<th>Weightage*</th>
<th>Break-up</th>
</tr>
</thead>
<tbody>
<tr>
<td>Past experience of the firm with similar requirements</td>
<td>A*</td>
<td></td>
</tr>
<tr>
<td>Financial vendor strength of the</td>
<td>B*</td>
<td></td>
</tr>
<tr>
<td>Turnover figures of the last three years</td>
<td>B1*</td>
<td></td>
</tr>
<tr>
<td>Net profit figures of the last three years</td>
<td>B2*</td>
<td></td>
</tr>
<tr>
<td>Quality accreditations, licensing requirements</td>
<td>C*</td>
<td></td>
</tr>
<tr>
<td>Manufacturing capabilities/tie-ups</td>
<td>D*</td>
<td></td>
</tr>
<tr>
<td>After-sales support/infrastructure</td>
<td>E*</td>
<td></td>
</tr>
</tbody>
</table>

Criteria Sub-criteria of Weightage

Product support | F* |

Weightage (out of 100) should be pre-decided and declared in Eol documents by the CA based on assessment of the required profiles of the potential bidders. The marking/grading scheme for allotting marks (out of 100) for various parameters should also be laid down.

Evaluation of Eol: The bidders should be evaluated for shortlisting, inter-alia, based on their past experience of performance in a similar context, financial strength and technical capabilities, among others. Each bidder should be assigned scores based on the sum of marks obtained for each parameter multiplied by the weightage assigned to that parameter. All bidders who secure the minimum required marks (normally 60 (sixty) per cent) should be
shortlisted. The minimum qualifying marks should be specified in the EoI document. Alternatively, instead of weighted evaluation, the EoI document may specify a 'fail-pass criteria' with the minimum qualifying requirement for each of the criteria, such as minimum years of experience, minimum number of assignments executed and minimum turnover. Under such circumstances, all bidders who meet the minimum requirement, as specified, should be shortlisted. The short list should normally comprise at least four firms.

Pre-Notice Inviting Tender (NIT) Conference: In complex and innovative procurement cases or where the procuring entity may not have the required knowledge to formulate tender provisions, a pre-NIT conference may help the procuring entity in obtaining inputs from the industry. Such conferences should be widely publicised so that different potential suppliers can attend.

Electronic Procurement (e-Procurement)

It is mandatory for Ministries/Departments to receive all bids through e-procurement portals in respect of all procurements. Ministries/Departments which do not have a large volume of procurement or carry out procurements required only for day-to-day running of offices and also have not initiated e-procurement through any other solution provided so far may use e-procurement solution developed by NIC. Other Ministries/Departments may either use e-procurement solution developed by NIC or engage any other service provider following due process. In individual cases where national security and strategic considerations demand confidentiality, Ministries/Departments may exempt such cases from e-procurement after seeking approval of concerned Secretary and with concurrence of Financial Advisers. In case of tenders floated by Indian Missions Abroad, Competent Authority to decide the tender may exempt such case from e-procurement. National Informatics Centre (NIC) has an e-Procurement portal called Government e-Procurement of NIC (GePNIC). There are other service providers in Public Sector (e.g. MSTC) and Private sector which can be utilized for e-Procurement. Details about the process of e-procurement are available from the service providers. Appendix 3 also gives such generic details of the e-Procurement process. (Rule 160 of GFR 2017)

Electronic Reverse Auction (RA)

Electronic Reverse Auction is a type of auction (classified as dynamic procurement method) where the starting price, bid decrement, duration of auction, maximum number of automatic extensions are announced before start of online reverse auction. If required, RA may be preceded by an e-Procurement stage of eligibility/ PQB to shortlist competent bidders who would be allowed to participate in the RA. The shortlisted bidders can after the start of RA start bidding online in an iterative process wherein the lowest bidder at any given moment can be displaced by an even lower bid of a competing bidder, within the duration of the RA. If a new lower bid is received within last few minutes (say two minutes) of closing time, the closing time may get automatically extended by few minutes (say five minutes) for others to respond. Maximum number of such extensions may be stipulated (say five). The most favourable bid at the end of stipulated / extended time is declared as successful. While permitting use of RA, CVC has asked the Departments/ organisations to themselves decide on reverse auction for purchases or sales and work out the detailed procedure in this regard. It has, however, to be ensured that the entire process is conducted in a transparent and fair manner. A procuring entity may choose to procure a subject matter of procurement by the electronic reverse auction method, if:

i) Items for Reverse Auction may be selected carefully. Items of strategic, critical and vital nature, items in short supply in market and where there are only a few suppliers are not good candidates for reverse auction. Items in the nature of commodities, Commercially-off-the-shelf items, items having large number of suppliers and high value procurements may be more amenable to reverse auction;

ii) It is feasible for the procuring entity to formulate a detailed description of the subject matter of the procurement;

iii) There is a competitive market of bidders anticipated to be qualified to participate in the electronic reverse auction, so that effective competition is ensured;

iv) The criteria to be used by the procuring entity in determining the successful bid are quantifiable and can be expressed in monetary terms;

v) In cases where pre-qualification of bidders is considered necessary, reverse auction may be carried out after a separate PQB (electronic or otherwise) among the successful bidders only.

Subject to more detailed guidelines in the category-specific manual or other guidelines, the procedure for electronic reverse auction shall include the following, namely:

lxxix) The procuring entity shall solicit bids through an invitation to the electronic reverse auction to be published or communicated in accordance with the provisions similar to e-procurement; and

|xxx| The invitation shall, in addition to the information as specified in e-procurement, include details relating to:

a) Access to and registration for the auction;

b) Opening and closing of the auction;

c) Norms for conduct of the auction; and

d) Any other information as may be relevant to the
method of procurement. (Rule 167 of GFR 2017)

**One Stop Government e-Marketplace (GeM)**

An online marketplace (or e-commerce marketplace) is a type of e-commerce site where product or services are offered by a number of sellers and all the buyers can select the product/services offered by any one of the seller, based on his own criteria. In an online marketplace, Purchaser’s transactions are processed by the marketplace operator and then product/services are delivered and fulfilled directly by the participating retailers. Other capabilities might include auctioning (forward or reverse), catalogues, ordering, posting of requirements by Purchasers, Payment gateways etc. In general, because online marketplaces aggregate products from a wide array of providers, selection is usually wider, availability is higher, and prices are more competitive than in vendor-specific online retail stores.

Ministry of Commerce has developed an online Government e-Market Place for common use goods and services. The procurement process on GeM is end to end from placement of supply order to payment to suppliers. This is to ensure better transparency and higher efficiency. All the process will be electronic and online. The Procurement of Goods and Services by Ministries or Departments is mandatory for Goods or Services available on GeM. The credentials of suppliers on GeM shall be certified by GeM SPV. The procuring authorities will certify the reasonability of rates. The GeM portal shall be utilized by the Government buyers for direct online purchases as under:

1. **Up to (Rs.25,000/-)** through any of the available suppliers on the GeM, meeting the requisite quality, specification, and delivery period (in case of procurement of Automobiles only the ceiling of direct purchase will be Rs.30 lakh instead of Rs.25,000/-);

2. **Above Rs.25,000/- and up to Rs.5,00,000/-** through the GeM Seller having lowest price amongst the available sellers (excluding Automobiles where current limit of 30 lakh will continue), of at least three different manufacturers, on GeM, meeting the requisite quality, specification, and delivery period. The tools for online bidding and online reverse auction available on GeM can be used by the Buyer even for procurements less than Rs 5,00,000.

3. **Above Rs.5,00,000/-** through the supplier having lowest price meeting the requisite quality, specification, and delivery period after mandatorily obtaining bids, using online bidding or reverse auction tool provided on GeM (excluding Automobiles where current limit of 30 lakh will continue).

4. **The invitation for the online e-bidding/reverse auction will be available to all the existing Sellers or other Sellers registered on the portal and who have offered their goods/services under the particular product/service category, as per terms and conditions of GeM.**

5. **The above mentioned monetary ceiling is applicable only for purchases made through GeM.** For purchases, if any, outside GeM, relevant GFR Rules shall apply.

6. **The Ministries/Departments shall work out their procurement requirements of Goods and Services on either “OPEX” model or “CAPEX” model as per their requirement/suitability at the time of preparation of Budget Estimates (BE) and shall project their Annual Procurement Plan of goods and services on GeM portal within 30 (thirty) days of Budget approval.**

7. **The Government Buyers may ascertain the reasonableness of prices before placement of order using the Business Analytics (BA) tools available on GeM including the Last Purchase Price on GeM, Department’s own Last Purchase Price etc.**

8. **A demand for goods shall not be divided into small quantities to make piecemeal purchases to avoid procurement through L-1 Buying / bidding / reverse auction on GeM or the necessity of obtaining the sanction of higher authorities required with reference to the estimated value of the total demand.”**
It may be noted that it is the responsibility of the Procuring Entity to do due diligence for ensuring reasonableness of rates.

**GeM Portal**: https://gem.gov.in. Detailed instructions for user organization registration, supplier registration, listing of products, terms and conditions, online bidding, reverse auction, demand aggregation, call centre, etc. are available on this portal.

**Payment Procedure in GeM**: The payment procedure in GeM is governed by O.M. No. F.264/ 2016-PPD dated 23rd January, 2020[37] issued by D/o Expenditure, M/o Finance, New Delhi. The following procedures are prescribed for making payments to the Sellers/ Service Providers in GeM which shall be complied and adhered to by all concerned for different type of contracts such as:

a. Supply of Goods & Services

b. Supply, Installation, Testing and Commissioning of Goods

c. Supply, Installation, Testing, Commissioning of Goods and Training of operators and providing Statutory Clearances required (if any)

i) In respect of contracts for Supply of Goods, 100% payment including GST should be made after receipt and acceptance of Goods and generation of “Goods CRAC” (Consignee Receipt and Acceptance Certificate) subject to recoveries, if any, either on account of short supply and Liquidated Damages etc. for delay in supply.

ii) In respect of contracts for Services, payment should be made as per periodicity defined in the contract i.e. Monthly, Quarterly or any other pre-defined payment periodicity. 100% payment including GST for the particular payment cycle should be made after receipt and acceptance of the Services and generation of “Service CRAC” (Consignee Receipt and Acceptance Certificate) subject to recoveries, if any, either on account of short supply, SLA (Service Level Agreement) deviations and Liquidated Damages for delay in supply etc.

iii) In respect of contracts for Supply, Installation, Testing, Commissioning of Goods and Training of operators etc. the complete cost break-up indicating Basic price, GST, Installation and commissioning charges, Incidental Services, training etc. is to be indicated separately in the bid. In order to cater to installation intensive products, the different configurable payment terms will have to be incorporated in GeM functionalities (depending upon the quantum of installation and turnkey work required).

a. First Milestone - On delivery of goods: 80 to 90% payment (lower initial payment if installation scope is very extensive) of the basic price of Goods along with 100% GST on the Goods Price but excluding installation, testing and commissioning and other charges should be paid after receipt Goods and generation of “Delivery CRAC for initial payment”. This will be issued after physical verification of quantity only but without commitment about quality or functionalities etc. which would be verified after installation/commissioning etc. While creating the bid, Buyer shall have functionality to define the percentage of payment linked with delivery of Goods.

b. Second Milestone - On Acceptance after installation, testing and commissioning : Balance 10% to 20% payment of the basic price of Goods and 100% charges for installation, testing and commissioning and other charges along with GST on these charges should be paid after installation and final Acceptance of Goods and generation of “Installation CRAC” to be issued by the End User/ Consignee. Recoveries, if any, either on account of short supply and Liquidated Damages etc. for delay in supply and i or installation etc. shall be made from the payment due under this milestone. While creating the bid, Buyer shall have functionality to define the deliverables in this milestone and the percentage of payment linked with this milestone.

c. Third (and subsequent) milestones - Payment of Incidental Costs: 100% Payment related to Incidental costs at consignee site towards Incidental Services (such as providing training, or other work/service as per scope defined in the contract), to be paid on submission of “Final CRAC” by the End User/ Consignee. While creating the bid, Buyer shall have functionality to define the deliverables in this milestone. In exceptional cases, Buyer may choose to split this milestone as required.

iv) In case of contracts for Supply, Installation, Testing, Commissioning of Goods bundled with one or more Services such as Comprehensive Maintenance, Human Resource hiring for predefined time periods etc., the payments for Goods shall be governed by Para (iii) above while payment for Services shall be Governed as per Para (ii) above.

v) In case of Milestone Based Payments, separate timelines/ delivery periods for each milestone will be provided. In case of supply and installation contracts, the delivery period may be specified by filling up the blanks as under:

a. First Milestone - For delivery of goods at site:—days/months from date of issue of contract with provision for staggered/multiple delivery period for same consignee.

b. Second milestone - Installation, Testing and Commissioning etc. of goods:—days/months from the date of handing over of site complete in all respect as per contract.

c. Third (and subsequent) milestones - Incidental Services etc.:—days after installation and commissioning.

vi) The payments on GeM are primarily categorized under two heads i.e. through PFMS or GeM Pool
Account. The detailed instructions for both type of payment system are as under:

A. Payments through PFMS:

1. The Central Government Buyer i.e. the concerned Programme Division or Administrative Unit in a Ministry/Department will place the Contract online after taking prior approval of the Competent Authority for procuring a particular Good or Service. Inter-alia, the Contract form will also contain the following fields including fields required for payment related processes:

   a) Administrative approval of the Competent Authority indicating the designation of the approving authority,

   b) Approval of Competent Financial Authority indicating designation of the officer;

   c) Whether IFD concurrence required? (Yes/No)

   d) If yes, then IFD Diary No. & Date

   e) Budget Head of Account and Year, Major/Minor/Sub-head/Detailed Head/Object Head as in Detailed Demands for Grants.

   f) Budget availability as on date (Yes/No)

   g) Amount (Contract Value) Rs (Budget to be blocked)

   h) If expenditure is committed for more than a year, the year-wise details (portal should generate a Liability Register for recording multi-year payment commitments, the format for which is prescribed in Rule 53 of the GFR)

2. When these fields are duly captured, the Buyer will be in a position to place the Contract online. The GeM portal will generate a Sanction Order and the Contract which will be digitally/e-signed by the Buyer. These documents duly digitally/e-signed by the Buyer will be made available online to the concerned DDO and PAO or Paying Authority as defined in the contract and Seller/Service Provider. The DDO and PAO/Paying Authority shall have access to the Contract online in order to ensure that the Bill is generated at the stage of payment in accordance with the contractual provisions.

3. The GeM portal will send the Sanction Order details to PFMS.

4. On issue of Sanction order and placing the Contract for goods, the full amount required from the relevant Budget Head should be blocked in the PFMS. In cases of Services, amount should be blocked for one payment cycle as defined in the contract. Before releasing payment for any cycle, the funds required for the next payment cycle should be blocked so as to ensure availability of payable funds for the next payment cycle. Blocked fund will be treated as accrued expenditure by PFMS for the financial year in question and it will not be withdrawn for any other purpose other than the one for which the amount is Blocked. In order to alleviate the operational issues as well as to ensure optimum utilization of available funds, the following additions\(^8\) are made in para 9.7.7 (vi) (A) (4)

a. The provision of fund blocking equivalent to full contract value is applicable only for contracts with delivery periods of up to 20 days. For contracts with longer delivery periods, fund blocking of appropriate amounts shall be initiated at a date 20 days prior to expected delivery date or on the date of invoice generation by the Seller in GeM whichever is earlier. In case of non-availability of required funds at that point of time, both buyer and seller shall be alerted, and the Buyer, the HoD, the DDO/PAO and finally up to AS&FAof concerned Ministry/Department shall be alerted by email and SMS by GeM. On failure in making available the required funds in the appropriate head of account within 10 days, seller has right to decline supply and to seek contract cancellation without any administrative action against the seller. Also, in such a case, any delay in delivery by the seller will also become exempt from the provision of Liquidated Damages.

b. Functionality to un-block the blocked funds in exceptional cases/emergency cases with some validations: Head of Department (HoD) of the organization on GeM can unblock certain % of blocked funds of a contract (may be upto 100%) with the approval of associated finance of the Ministry/Department or the CPSE in exceptional cases/emergency cases after giving a clear undertaking that he will ensure timely availability of funds and unblocking will not lead to delay payments to sellers. However, such unblocking will not allowed if the seller has already raised an invoice (before 1st March of Financial Year).

c. Funds for the relevant financial year should be blocked only if the delivery period is such that the delivery is scheduled before the 1st of March of that financial year. If the delivery is scheduled in March of that financial year or scheduled in the next financial year then fund blocking is optional for buyer in current financial year and mandatory only in the next financial year in the 1st week of April.

5. Should it be necessary to amend the Contract, such Amendment in the Contract with due approval of the Competent Authority and acceptance of the Seller/Service Provider (wherever required) shall be made available to the Seller/Service Provider/DDO/PAO/Paying Authority on the GeM portal.

6. Similarly, in the event of complete/partial cancellation of the Contract the information would be made available to the Seller/Service Provider, DDO and PAO on the GeM portal. In that event, funds so blocked earlier would be released to the extent of cancelled amount.

7. The Programme Division/Administrative Unit in the Ministries/Departments shall periodically review the blocked budget to ensure that funds are utilized within the same financial year.
8. The Performance Security (if any) would be obtained from the Seller/Service Provider as per Contract, and their details would be reflected on the GeM portal by the Buyer.

9. **Provisional Receipt of Stores on GeM:**
   
a. On dispatch of Goods, the Seller would enter the Dispatch Details and date of Dispatch and will upload documentary evidence of Dispatch against each consignment on GeM Portal. All these documents and details shall be shown to the Consignee on his dashboard and shall also be notified to the consignee on his e-mail and on his registered mobile number.

b. The Seller shall prepare an electronic Invoice, digitally/e-signed, on GeM portal and shall submit the same on-line to the Buyer. GeM portal will send an SMS/email alert to the Buyer, on submission of Invoice. This Invoice will contain mode of dispatch of goods, dispatched/delivered quantity with date and all inclusive price claimed based on digitally/e-signed Contract. In case Services are procured, the required data as per Contract may be incorporated in the Invoice.

c. After actual delivery of goods at consignee destination/milestone achievement (such as completion of installation/commissioning or training etc. as defined in the contract)/service delivery, Seller would enter the actual date of delivery/milestone achievement/service Log-sheet (as applicable) and will upload documentary evidence for the same duly digitally signed/e-signed. All these documents and details shall be shown to the Consignee on his dashboard and shall also be notified to the consignee on his e-mail and on his registered mobile number. In case of Services Contracts, the Service Provider will fill up the required data as per the contract (such as log sheets and/or Invoice etc. duly digitally signed/e-signed).

d. Immediately upon above entry by Seller/Service Provider regarding delivery of goods/milestone achievement/service delivery, an alert will be flashed on the Dashboard of the consignee and an email and an SMS Alert will be sent to Consignee informing that consignee has to mandatorily acknowledge receipt of stores/milestone achievement/service delivery through generation of PRC on GeM.

f. After expiry of 72 hrs. from the first alert, another alert will be flashed on the dashboard of the Consignee, Buyer including HoD and an email along with an SMS Alert to Consignee, Buyer, HoD informing that consignee has to mandatorily acknowledge receipt of stores/milestone achievement/service delivery through generation of PRC on GeM and if the time limit of 96 hrs expires from the date of delivery of goods/milestone achievement/service delivery as per entry made by Seller/Service provider and if the consignee does not acknowledge receipt of stores/milestone achievement/service delivery by generating PRC or disputes the same by rejecting receipt, it would be presumed that goods have been delivered/milestone achievement. If service delivery has been made to consignee and PRC will be auto generated by the system (Deemed PRC).

g. However, if the consignee does not issue PRC within 96 hrs from delivery of goods/milestone achievement/service delivery as per entry made by Seller/Service provider, GeM System/Portal would auto generate unsigned PRC considering the date of delivery of goods/milestone achievement/service delivery as indicated by the seller as deemed date of receipt for issuance of PRC. GeM portal shall also send periodic notifications every 24 hrs. to the Consignee, Buyer and the HoD about issuance of auto generated Deemed PRC for next 48 hrs.

h. In case the PRC is auto-generated, the consignee shall have the provision on GeM to respond back within 48 hrs, if the goods have not been received or short received recommending to cancel or amend/correct the date of receipt/quantity in the auto-generated Deemed PRC. In case nothing is reported/corrected by consignee on the system, it will be presumed that the consignee has nothing to say and the auto-generated Deemed PRC will be considered as final for all purposes.

i. If it is found at any stage that seller/service provider has sent/uploaded wrong information on GeM, based on which PRC has been wrongly auto generated, the seller/service provider will be dealt severely and should be debarred by GeM for three years.

10. **Consignee Receipt and Acceptance of Stores on GeM:**

After issue of PRC/Deemed PRC, the system will start sending an alert on the Dashboard of the consignee and an email and an SMS Alert will be sent as per escalation matrix specified below to issue the CRAC within 10 days:

a. Level 1 - Upto 3 days - Consignee

b. Level 2-4 and 5th day - Consignee and Buyer
c. Level 3 - 6 to 10th day - Consignee, Buyer, HOD

After verification including assessment of quality and quantity of goods / verification of completion of all deliverables defined in the milestone/ completion of service for the defined period, the Consignee(s) will issue an on-line digitally/e-
signed Consignee’s Receipt & Acceptance Certificate (CRAC) (Goods CRAC/Service CRAC/
Delivery CRAC/ Installation CRAC/ Final CRAC as the case may be) (within 10 days (unless otherwise specified in a particular contract) of date of receipt indicated in PRC/deemed date of receipt as indicated in Deemed PRC. The CRAC would clearly indicate the Order quantity/ milestone achievement/services delivery, rejected quantity/unacceptable milestone achievement/ unacceptable service delivery (if any, with reasons for rejection including shortages/damaged/ unaccepted quality), quantity/ milestone achievement/services delivery accepted and cleared for payment. However, if the consignee
does not issue CRAC within 10 days (unless some other time line is specified in a particular contract for issue of CRAC), on 11th day from the date of receipt/deemed date of receipt of quantity/ milestone achievement / service delivery as indicated in PRC, GeM System/Portal would auto generate unsigned CRAC which, backed with digitally/e-signed PRC or deemed PRC based on Seller Evidence for the corresponding quantity/ milestone achievement/service delivery shall be taken as deemed acceptance for payments in lieu of the requirement of digitally/e-signed CRAC. This will be made available on GeM to the Buyer/ Seller and also the concerned DDO (if applicable) and PAO/Paying Authority. The GeM portal would generate a unique serial number for CRAC relating to concerned DDO (if applicable) & PAO/Paying Authority, so that the payments are made seriatim.

In case the CRAC is auto-generated, the consignee shall have the provision on GeM to cancel or amend the auto-generated CRAC within 72 hrs, if the goods have not been accepted or found defective/ short received. In case nothing is corrected by consignee on the system, it will be presumed that the consignee has nothing to say and the auto-generated CRAC will be considered as final for all purposes including payments.

11. After generation of CRAC, the Buyer shall prepare ‘Payment advice’ on GeM Portal, indicating any contractual deductions such as penalties for violation of Service Level Agreement (as applicable)/LiquidatedDamages for delayed supplies/ milestone achievement/service delivery etc. which will be used by GeM portal to compute the net amount payable for the accepted quantity/ milestone achievement/service delivery after factoring in the contractual deduction(s) and generate claims for payments digitally/e-signed by the Buyer. This claim for payment shall be made available to the DDO on GeM Portal and the requisite data will also be pushed online in the PFMS. DDO will log into PFMS and generate the Bill against the said claims and forward the same to the PAO/Paying Authority for payment, after deducting any statutory deductions including TDS as applicable.

12. It is obligatory to make payments without any delay for purchases made on GeM. In no case should it take longer than the prescribed timelines. The timelines after Consignee Receipt and Acceptance Certificate (CRAC) issued on-line and digitally/e-signed by consignee, will be two (2) working days for Buyer, one (1) working day for concerned DDO and two (2) working days for concerned PAO for triggering payment through PFMS for crediting to the supplier’s account. In case of return of Bills by PAO/Paying authority, the discrepancies should be addressed by concerned Buyer/DDO within one working day and thereafter on re-submission of Bill the PAO should also not take more than one (1) working day for triggering payment to the Seller/service provider. Any matter needing a resolution will be escalated to the next higher level in each agency (Buyer, DDO, and PAO) where the matter should be resolved within 24 hours. In the entire process, time taken for payment should not exceed ten (10) days including holidays.

13. After online pre-check of all relevant documents, PAO/Paying Authority shall debit the Government account, releasing the corresponding payment through PFMS to be credited into the bank account of the Seller/Service Provider. The payment so released shall be credited to the Seller/Service Provider account within 24 hours (excluding public holidays), by the Bank. SMS alerts shall be sent to the Seller/Service Provider and Buyer after the payment is authorized by PAO and also after the confirmation of the payment by the Bank. The payment authorization as well as payment confirmation details shall be shared by PFMS on the GeM portal. The PAO/Paying Authority and DDO shall comply with the provisions of General Financial Rules for budget implementation.

14. In case of return of Bill, if necessary by PAO/ Paying Authority, it should be made online with all queries/discrepancies/reasons for rejections indicated in one go with the approval of competent authority, to the DDO/Buyer for the needful corrections at their end.

15. The DDO shall also be responsible for issuing TDS certificate (as per Income Tax Act, 1961 amended from time to time) to the Seller after release of the payment to the Seller/Supplier. The DDO shall also be responsible for deduction of TDS on GST as per GST provisions and to deposit the same with the Govt, as per GST rules and issue Form GSTR 7A to the person whose TDS has been deducted.

16. GeM System/Portal would also have on-line provisions for generating supplementary Invoice(s) for claim/refund of statutory changes in Duties and taxes, if any, as above. A provision
for all types of refunds/claims should be available on-line through PFMS.

17. In terms of the provisions of the Information Technology Act 2000 as amended from time to time, digitally/e-signed online documents generated on GeM shall be treated at par with ink-signed documents for release of payment to the Seller/Service Provider and no ink signed paper/documents shall be demanded/insisted.

18. The multi-year liabilities so created as referred to in Para 4.17.7 (vi) (A) (1) (h) above shall be reviewed regularly by the Programme Division/Administrative unit in consultation with the Financial Adviser. The consolidated information on the total committed liabilities, year-wise, shall be submitted by the Financial Adviser to the Budget Division, Department of Economic Affairs, Ministry of Finance for suitably reflecting in the Budget Estimates for the relevant financial year and in the Medium Term Expenditure Framework (MTEF).

19. For all contracts placed through GeM, the payment through PFMS to all Sellers/Service Providers must be released online only against electronic bill generated on GeM. No offline payment should be made in such cases to avoid double payment. Only in exceptional cases such as non-availability of the GeM platform or long shutdown of internet services at Buyer location or similar force majeure conditions, such off-line payments can be resorted to subject to the condition that immediately after resolution of the problem, necessary entries would be made on-line in GeM portal to obviate the possibility of double payment.

B. Payment for Non-PFMS Agencies/Entities (NPME)

1. Non-PFMS Agency/Entity (NPME) is a Government of India (GoI) not using PFMS for its payments of transactions and having their own payment system for making payments against contracts placed for goods/services placed by the NPME on GeM. All NPME shall open & operate a special purpose account namely GeM Pool Account for the purpose of ensuring prompt payment to Seller/Service Provider of GeM who supply Goods/Services to the NPME through GeM.

2. Accordingly, all the Organisations/Departments including CPUs, Municipalities, Educational Institutions, Autonomous bodies, Societies, etc. not operating through PFMS shall be covered under these instructions. These organisations are hereby directed to open, operationalize and operate a GeM Pool Account (GPA) for all procurement. GPA is a special purpose bank account (interest bearing savings/current Account) opened, operated and controlled exclusively by each NPME. GeM Pool Account shall be mandatory for all procurement irrespective of value. The GeM Pool Account shall be opened, operated and controlled exclusively and completely by the buyer entity/agency subject to certain restrictions on withdrawals of funds as explained in succeeding paragraphs. The Account shall carry interest applicable to savings/current account. Such account shall be opened in any scheduled bank having already integrated the pool account with GeM.

3. The following are the core elements of GPA that should be incorporated during the opening and operations/procurement stages:

   a. The NPME will open the GPA (as a savings or current account) which will be utilized by buyer through the online integration of Bank with the platform owned and maintained by GeM SPV, as per Service Level Agreement (SLA), and solely for procurement of goods and services on GeM.

   b. The terms and conditions of procurement on GeM will be part of the operations agreement between the bank and the NPME.

   c. The role of the bank will be limited to ensuring operations of the account on the instruction of the NPME through the authorized NPME nodal officer for GeM/buyer.

   d. Real time details of all operations of the account will be shared by the bank, in a mutually accepted format (to be amended from time to time) with the NPME, only through the GeM Platform.

   e. Once a sub-account/transaction specific account is credited with an amount, the NPME cannot withdraw this amount, apart from transfer to the designated Seller/Service Provider, till such a time that the transaction is live.

   f. Any withdrawal/transfer by the NPME from this account, except for payment to the Seller/Service Provider, would be permitted in the following conditions.

      1. Order cancellation
      2. Order rejection
      3. Refund

   All the above situations would first be required to be enabled/flagged on the GeM Platform for the NPME to be able to act accordingly.

4. While procuring goods & services through GeM, the NPMEs should credit 100% of the projected Contract Value in case of Goods Contract in their GeM Pool Account before award of contract. In cases of Services, amount should be credited for one payment cycle as defined in the contract and before releasing payment for any cycle, the funds required for the next payment cycle should be credited so as to ensure availability of payable funds for the next payment cycle. Payment so credited will not be withdrawn for any other purpose other than the one for which the amount is credited into GeM Pool Account.
5. After placement of contract on GeM, the process for PRC and CRAC will be same for NPAE category also as indicated in Para 4.17.7 (vi) (A) (9) above regarding Provisional Receipt of Stores on GeM and Para 4.17.7 (vi) (A) (10) Consignee Receipt and Acceptance of Stores on GeM for PFMS Buyers.

6. After issue of CRAC, NPAE Nodal Officer shall issue an advice without delay to the bank to release actual amount payable to Seller/ Service Provider as per terms of contract from the GeM Pool Account. On authorization, the bank should transfer the prescribed amount to the Seller/ Service Provider supplier mapped in the transaction.

7. In case of a Service level agreement (SLA) breach on the part of the NPAE in terms of payments to the Seller/Service Provider, GeM will intimate the buyer and bank of the same. Post such intimation, and non-action on the part of the NPAE with respect to payment transfer, bank will release payments for the delivery of goods at consignee destination/ milestone achievement (such as completion of installation/ commissioning or training etc. as defined in the contract)/ service delivery as notified in the terms and conditions of procurement on GeM to the Seller/ Service Provider mapped in the transaction. Such a provision is required to be incorporated in GPA and should be considered as a standing instruction from the NPAE to the bank. The residual amount cannot be withdrawn/ transferred by the NPAE, in such cases.

8. In case, even after 10 days of issue of Consignee receipt and acceptance certificate (CRAC)/ auto generated CRAC, the buyer has not initiated the payment process through the GeM platform, a payment trigger will be automatically generated for payment equivalent to 80% of the corresponding quantity/ milestone achievement/ service delivery deduced by the system as per CRAC. Simultaneously intimation will be sent to the HoD, buyer and NPAE Nodal officer for GeM, regarding the release of payment, at their risk and cost in line with the terms and condition (T&C) and SLA of procurement on GeM. The residual payment of 20% is to be processed by the buyer within 35 days after adjusting for any statutory deduction and damages, failing which after 35 days, the same will be released to the Seller/ Service Provider automatically through an alert to the bank by the GeM Platform, after statutory deductions and any system know deductions.

9. Unutilized funds after closure of the Contract and interest accrued on the credited amount will be at the disposal of nominated NPAE Nodal officer, who may advise banker for further action as deemed fit.

10. The Steering Committee on GeM of each Ministry should monitor the implementation of these instructions regarding operationalization of GeM Pool Account.

11. Ministries/ Departments of Government of India are accordingly requested to issue necessary instructions to all Non-PFMS Agencies/ Entities under their control.

In case any Non PFMS Agency/ Entity decides with the approval of their Competent Authority to have integration of their on-line payment Systems with functionality for Blocking of Funds etc. as per PFMS system of payments, the Payment procedures outlined for PFMS in Para 4.17.7 (vi) (A) shall be mutatis mutandis applicable to them.

Currently, for unlocking of funds, especially during the fag end of the financial year, buyers need to send emails etc. to GeM. Thereafter, GeM manually unlocks the payments. GeM will automate this whole process.

It is mandatory for a buyer to generate a “GeM Availability Report and Past Transaction Summary” (GeMAR&PTS) with a unique ID on GeM portal using his login credentials on GeM for procurement outside GeM (for example for procurement through Central Public Procurement Portal).

The Past Transaction Summary will be provided, where available. “GeMAR&PTS” shall be a prerequisite for arriving at a decision by the competent authority for procurement of required goods and services by floating a bid outside GeM and its unique ID would be required to be furnished on the publishing portal along with the tender proposed to be published.

Purchase of goods without quotation can be resorted for value upto Rs. 25,000/- only on each occasion may be made without inviting quotations or bids on the basis of a certificate to be recorded by the competent authority, only when the required goods are not available on GeM.

In case a certain item is not available on the GeM portal, Purchase of goods costing above [Rs.25,000 (Rupees twenty five thousand only) and upto Rs.2,50,000/- (Rupees two lakh and fifty thousand only)] on each occasion may be made on the recommendations of a duly constituted Local Purchase Committee consisting of three members of an appropriate level as decided by the Head of the Department. The Committee will survey the market to ascertain the reasonableness of rate, quality and specifications and identify the appropriate supplier and will jointly record a certificate before placement of the purchase order.

Where an item is available on GeM and Ministry/ Department/ Organization wants to buy outside the GeM in view of any compelling circumstances, the approval of Standing Committee of GeM (SCoGeM) and Secretary concerned shall be required.

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AURANGABAD BRANCH

Indian Institute of Materials Management (IIMM) and Marathwada Auto Cluster (MAC) on occasion of Materials Management Day on 23rd April, organized a seminar on “Role of Supply Chain in making India beyond USD 5 trillion Economy by 2025”.

The Chief Guest of the Program was Mr.Sriram Narayanan – Managing Director of Endress + Hauser and Speaker was Mr. Sanjay Sanghai - Executive Vice President, Group Purchase of Endurance Technologies Limited. Mr.Sanghai said that SCM professional should focus on Cost optimization, Innovation supply chain strategies, Sustainable supply chain practices, Supplier motivation, Exports in Indians economic growth, World class manufacturing in supply chain to make India will become a $5 trillion economy by 2025.

Mr.Narayanan said Reliable supply chains are one of the key drivers of economic growth. From the economic standpoint, for developing countries like India, supply chains create opportunities, augment productivity, improve technology and skills, increase employment, and diversify exports. Long-term business relations ensure more income and uninterrupted revenue.

BANGALORE BRANCH

12th May 2023 Women Leadership Round Table: Contemporary Topics in India’s Supply Chain

As part of Golden Jubilee celebration IIMM Bangalore Branch organized a Women leadership Round table meet on 12th May 2023 at World trade Centre.

World-wide, representation of women in SCM discipline has seen as rise from 35 to 41% and in leadership roles from 9 to 17%. Initially perceived as physically intensive work, Supply Chain Management has remained male-dominated discipline. The growth in services industries and increased eCommerce have made possible foray of women in SCM discipline. IIMM Bangalore has been first to foresee the need for a focused effort to provide
advocacy, thought leadership, networking, career role modelling and mentoring opportunities for women in SCM. Under the leadership of KC Harsha and Dr Renu Rajani, this is our inaugural step to initiate efforts targeted for women SCM professionals.

With this context, IIMM Bangalore brought together 40 women professionals in Supply Chain and adjacent services disciplines. The women participants were hand-picked from roles including forecasting, planning, sourcing, contracting, vendor management, inventory management, manufacturing, distribution, logistics and returns in addition to digital and technologies enabling supply chains, start-ups academia and research.

The round table members discussed contemporary topics including

- New Logistics policy and the efforts needed to bring down logistics costs from 14% to 10% of GDP to make Indian logistics competitive.
- Evolution in SCM discipline with digital technologies applied to achieve Supply Chain transparency and visibility, Supply Chain Resiliency and Partnerships. SC Risk handling, Circular/Green Supply Chains, sustainability.

Ms. Ushasri T.S. Executive VP and GM of Manhattan Associates addressing the gathering

- Careers Opportunities for women in SCM discipline and skills required
- Recommendations on achieving a better gender balance in SCM discipline.

Dr Renu Rajani, PhD, Senior IT industry leader/book author, has conceptualized and moderated the round-table meet in close working with KC Harsha and IIMM. The event included welcome, inaugural address and two round-table sessions (i) National and International Logistics in India (ii) Opportunities and Challenges for women SCM professionals

- KC Harsha welcomed the participants and introduced IIMM’s activities and intent of setting up the women leadership taskforce.
- Mrs TS Ushasri, Exec VP and GM, Manhattan Associates delivered inaugural address and
- Dr Renu set the context and moderated the two round-table with women panel members present in person.
- 60 participants attended the round-table discussion virtually.
- IIMM Bangalore leadership offered their warm support to the event with their gracious presence.

It was a heart-warming experience to initiate and execute this new thought process to introduce women specific agenda and events. The initiative was well received among the women leaders present and it has paved the way for IIMM Bangalore to have specific charter and future events targeted towards women in Services Industries, Supply Chain and Logistics. The group plans to continue meeting to accelerate the agenda of Diversity and Inclusion in SCM discipline.

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**CHENNAI BRANCH**

**Materials Management Day celebrations** : As is customary, the IIMM Chennai commemorated Materials Management Day with zeal and emotion. To begin, we will have an SCM Quiz for SCM professionals on Saturday, April 29, 2023, at Harirahan Hall, IIMM Chennai.

Between 10 a.m. and 12.30 p.m. on Saturday 29th April, Vestas, ZF Rane, Wheels India, and Simsons have each nominated us, as a two-person in a team. Mr. T K Padmanabhan mastered the quiz, and the Quiz program was inaugurated by Our Chairman Dr. B Ramesh, who stated in his welcome speech that the SCM Quiz program is for knowledge sharing purposes, and the team should take it as a knowledge and move forward. Some of our senior members participated in the Quiz program, particularly Mr. PY Venkateswaran, former Chairman of the IIMM Chennai who encouraged the participants. The quiz program has 9 rounds, including Choose the best answers, rapid fire round, Odds man out, and the Buzzer round, which is the quiz program’s focal point. A team from Vestas, represented by Mr. K Gopikrishnan and Mr. Mohammed Mubarak Azhar, won the Winner’s trophy, and a team from ZF Rane Automotive, represented by Mr. D Sathikumar and Mr. R Vikaram, came in second and receive the Runners award.

In the evening, we held our MM Day party at the Hotel Regenta Deccan, with over 70 members in attendance. Mr. S Seetharaman, Chairman, Super Auto Forge Pvt. Ltd., as Guest of Honour and Patron of IIMM Chennai, and Mr. P Sellamuthu, Director, Jaitech Power House Pvt. Ltd., as Guest Speaker, have been invited.

Dr. B. Ramesh delivered the welcome address, while Mr. J Ravishakar, Immediate Past Chairman and National Council Member, highlighted the significance of the Material Management Day celebrations.

Mr. S Seetharaman, Chairman, Super Auto Forge Pvt Ltd, is a successful entrepreneur who has been in the automobile and auto ancillary industries, particularly in forging, for over four decades. His company’s principal production (Rs.1000 crores) is exported to...
automotive OEMs in the United States and Europe. During his speech, he emphasized the recent swift advancement in Materials functions. In addition, he had highlighted and illustrated his own industrial case study, which was the major takeaway for participants. Mr. P Sellamuthu, Director, Jaitech Power House Pvt. Ltd., the day’s guest speaker, discussed work-life balance through simple workouts and self-motivation to a professional way of life.

Mr. TAB Barathi, Director Education, IIMM Chennai, presided over the award distribution ceremony in the second part for the function. He emphasized IIMM Chennai’s Diploma in Supply Chain Course, which has been accredited for Global Standard by IFPSM, Finland.

The best students award is named after Sri. M Sundaram, a distinguished member of our organization, and was established jointly by Super Auto Forge Pvt Ltd and IIMM Chennai. Mr. N Manikanda Prabhu was named Best Student, Mr. S Tamilselvan was named Second Rank for Academic Year Batch 2021-2022, and Ms. Jennifer Dania was named Calendar Year Batch 2022 First Rank and Mr. Srijani was named Second Rank.

Mr Seetharaman presented medals and monetary awards to the students in the presence of Mrs. Lakshmi Sundaram, wife of Late Sri. M Sundaram. In addition to our chairman Dr. B Ramesh and Mr. P Sellamuthu awarded the quiz winners and runners awards. Dr. B Sampath, Hon. Treasurer, IIMM Chennai, presented a vote of thanks, and the meeting concluded with a delicious dinner.

**MUMBAI BRANCH**

The next edition of CPO Dialogue was conducted at Pune on 10 Feb 2023, at Hotel Sheraton Grand. 40 CPOs from leading organizations participated in the discussions moderated by Mr. B.V. Iyer, CPO, Deccan Chemicals, Former National President and Convener for CPO Forum of IIMM.

This was the 6th CPO Dialogue hosted in partnership with SAP in Pune after similar events Mumbai, Delhi, Bangalore, Chennai. Master of Ceremony was Mr. Surendra Deodhar, VP Materials, Reliance Life Sciences, National Secretary and Treasurer of IIMM.

The event at Pune started with welcome address by Chairman, IIMM Pune, Mr. Shripad Kadam and concluded by Vote of Thanks by Chairman, IIMM Mumbai, Mr. Animesh Shah. Mr. Pankaj Jadhav, Director and Head of SAP Intelligent Spend and Business Network, set the tone with keynote address. He highlighted the key issues of risk, cost, delivering on evolving value procurement, accelerating procurement digital transformation, sustainable, mitigating procurement disruption, increase in predictive analytics.
Risk Management, Visibility beyond tier 1, Agility, SRM and Talent Management. Mr. Bala Iyer, CPO Deccan Chemicals, Former National President – IIMM, Convener for CPO Forum of IIMM, directed and facilitated the interaction to bring out the experiences, opinions of the seniors participating in the meet. Mr. Bala Iyer added his own experience at each stage. Also oriented the gathering to newer thoughts such as VUCA to BANI, or friendly shoring.

experience, automation, mobility; the risk and rapidly diminishing visibility beyond tier 1; measures for supplier capability building; green initiatives and so on. Many prominent leaders such as Mr. Pramod Shrivage, Head Corporate Sourcing, Thermax; Mr. Sudhir Ghalot, General Manager, Delval Flow Controls; Mr. Sandip Shastri, CPO, Serum Institute of India. Mr. Vishwas Shah, President Commodity Buying, Finolex; Mr. P.V.Sanjay, Director, Sulzer Global Procurement Chemtec; Mr. G S Rao, Serum Institute of India Pvt Ltd., Mr. Maruti Khair – AMOE Head – Electric Vehicles and Sp. Projects, SKF and other leaders from Mr. Mukund Karadkhekar, Dy. General Manager, Bosch, immensely contributed to the pool of knowledge. It was an intellectual treat to witness leaders weaving a web of rich knowledge building on thoughts from each other. Yet another milestone for IIMM.

NAGPUR BRANCH

It is a matter of pride that four of our senior members of the IIMM Nagpur Branch were promoted as General Managers of the Material Management Wing of Western Coalfields Limited. This is the first time in the history of Western Coalfields Limited that four chief Managers in the Material Management wing were promoted in one year. The four members of IIMM Nagpur Branch are Mr. Ragh Babu – VP Central and NC Member, Mr Dharamraj Kumar – NC member, Mr Navin Nischal – NC Member, and Dr. Venkata Ramana – Past Chairman, Nagpur Branch.

Then members of IIMM Nagpur Branch are very proud of their achievement, and the Executive Committee members have felicitated and honoured them. We are
all very proud of their achievement and wish them all
Good wishes and good luck for all their future
endeavours.

As we all know, machine lubrication plays a crucial role in
ensuring the smooth operation and longevity of
industrial machinery. With the global market for
lubricants growing rapidly, it is essential to stay updated
with the latest developments in this field. This seminar
aimed to provide a comprehensive overview covering
various topics related to lubrication. The technical
sessions were conducted by very senior officials of HPCL
and covered several topics, ranging from introducing
to Machine lubrication, improvements in packaging and
transportation, storage and handling automation in
Diesel delivery. The technical sessions was followed by
an interactive session of Questions and Answers, which
was enthusiastically participated by all.

The technical session was attended by over 50
participants, including members of IIMM Nagpur
Branch, and several senior officials from Western
Coalfields Limited, Manganese Ore India Limited, BEML,
etc. The chief guest for the technical session was Mr. S
K Batra, General Manager MM (HOD), Western
Coalfields limited and the guests of honor were Mr. A
Verma, General Manager (Excavation), Western
Coalfields Limited, Mr. Ajay Kolte, DGM, Manganese Ore
India Limited. Mr. Sukumar Adhikari, Secretary IIMM
Nagpur Branch, conducted the proceedings of the
seminar. The technical seminar was attended by Mr.
Dharamraj Kumar and Mr. Navin Nischal, NC members
of IIMM Nagpur Branch. The technical sessions was
followed by a sumptuous lunch and a time of fellowship.

PUNE BRANCH

MM Week 2023 – Report : Inaugural Program: As part
of the inaugural program of the Materials Management
Week celebration, IIMM-Pune branch had organized an
evening lecture on the topic “Re-Engineering The Work
Life Balance” on 23rd April, 2023 at our office in
Wakdewadi, Pune. Dr. Sonal Purohit, a renowned
lifestyle coach and the Managing Director of Satv
Lifestyle Management delivered a lecture on how to
maintain a healthy and balanced lifestyle.

During her lecture, she highlighted the importance of a
wholesome diet in achieving a balanced lifestyle. Dr.
Sonal emphasized the importance of good nutrition as
an essential element to achieving a good work-life
balance. She pointed out that a healthy diet not only
helps to keep stress levels in check and improve mood,
but it also helps to increase productivity and alertness
and maintain an overall feeling of wellbeing.

Dr. Sonal stressed that a healthy diet is also essential in
maintaining it. Eating right, means, being mindful of
the food one consumes and ensuring that one gets the
proper nutrients. She also mentioned that healthy food
options include a balance of fruits and vegetables,
plenty of water, and omega-3 fatty acids. In turn, a well-
rounded diet will improve mood, concentration, and
energy levels all of which are essential in leading a
happier and more productive life.
In addition to good nutrition and exercise, she also highlighted the importance of getting adequate sleep. She said that ensuring a good night sleep helps to reduce stress, enhances well-being, and increases productivity. Besides nutrition and exercise, a good night sleep is a crucial component of achieving a balance between work and life. Overall, Dr. Sonal’s lecture was both informative and motivating as it highlighted the need and value of a balanced lifestyle. The program was well attended by members of the branch.

Industrial Visits: As a part of this year’s Material Management Week celebration, IIMM Pune teams visited BAIF Development Research Foundation, Pune on 26th April 2023 and KSB Limited, Shirwal, Pune on 27th April 2023. BAIF has been impacting rural lives through its Livelihood and Climatic Resilience programs for the past 56 years. Their team of experts welcomed IIMM team and took us around their very important and useful field projects like Dairy husbandry, Land Degradation Neutrality (LDN), Agro-Horti-Forestry system, Integrated Renewable Energy and Sustainable Agricultural (IRESA), Agro Biodiversity Conservation etc.

KSB Limited, Shirwal is a new state-of-the-art manufacturing facility for manufacturing various Speciality pumps. Their team also welcomed IIMM team and took a short tour to show their newly set up manufacturing facilities and explained about the latest technological trends they have adapted at this plant.

During the concluding meeting of both the visits Honorary Secretary presented IIMM Corporate video and a power point presentation about the various activities being undertaken by IIMM and requested them to be a member of our institute so as to enhance cooperation and exchange of thoughts. We also had discussion with their procurement teams so as to understand their Supply Chain practices. At the end of each visit IIMM Pune presented a memento to both the organizations as a gratitude towards their cooperation during the fruitful visits.
Concluding Day Program: As a concluding part of our MM Week celebration, we, along with Ensigns Software & Communications Pvt. Ltd. had arranged a program to “Recognize the contribution of women from MSMEs in developing SCM” on 29th April 2023 at MCCI Trade Towers, Senapati Bapat Road, Pune.

IIMM Chairman Mr. Shripad Kadam and Mr. Mohan Nair briefed about IIMM activities and the objective of this program. 7 women’s working in different MSMEs presented their success stories which were well appreciated by the audience. These ladies were felicitated with a memento during the concluding program. Over 70 participants attended this program including EC members along with spouses, representatives from MSMEs, few MSME owners and past chairmen of our branch. This program was a great success and unique of its kind.

The program was concluded with Vote of Thanks by the Honorary Secretary.

JAMSHEDPUR BRANCH

IIMM ‘Best CEO 2022’ honour for Tata Steel MD TV Narendran”Jamshedpur, May 22: The Indian Institute of Materials Management (IIMM) felicitated, CEO and MD of Tata Steel, TV Narendran with ‘Best CEO of 2022 in private sector’ during award ceremony held in Jamshedpur on Monday, May 22.“The esteemed recognition was presented by National President of IIMM HK Sharma,”“HK Sharma highlighted the contribution of TV Narendran to the business landscape and his exceptional leadership qualities that have led Tata Steel to unprecedented success.”“Narendran humbly accepted the honour on behalf of Tata Steel and attributed his success to the efforts of entire Tata Steel employees.”“Earlier, the event commenced with welcome address by Rana Das, Vice President East. Guests present on the occasion were GK Singh, past National President, AK Srivastava, National Council member, Dr TAS Vijayaraghavan, National Council member, Sidhartha Dash, Chairman of IIMM Jamshedpur Chapter, Cdr. Sanjeev Raman, Vice Chairman, Vazifdar, Secretary and Neelesh Kumar, Treasurer.”“The Indian Institute of Materials Management is a premier educational institution that focuses on nurturing business leaders and providing cutting-edge management education in the field of Supply Chain, logistics and Materials Management. With a rich legacy and a commitment to excellence, IIMM strives to create a conducive learning environment for aspiring professionals and empower them to make a positive impact on society.
NEW DELHI BRANCH

Report on the seminar on changing face of Procurement – Impact of GeM, Policy Initiatives & Emerging Best Practices

IIMM Delhi branch organized a one-day seminar on Changing Face of Public Procurement – Impact of GeM, Policy Initiatives and Emerging Best Practices on 27th May 2023 at Hotel ‘The Park’, Connaught Place. The programme was inaugurated by Lt. General Manoj Kumar Singh Yadav, AVSM, SM, Director General of Supplies and Transport (DGST), Integrated HQ (Army), Ministry of Defence. During his inaugural address, he elaborated how procurement has changed over the last two decades and how digitalization of procurement is bringing about substantial changes in procurement operations. He also mentioned how GeM has evolved over last 7 years and is helping procurement professionals but many problems in case of GeM are a cause of concern.

Shri H K Sharma, National president, IIMM and Former Additional DG (Supply) Commerce Ministry in his speech set the base for the seminar by highlighting the changing face of procurement and salient impacts created by GeM, latest policy initiatives by Govt. and use of technologies like AI, Data Analytics and block chain and sustainability.

Shri Sanjay Shukla, Chairman IIMM Delhi branch welcomed the guests and delegates the gathering. Shri Srideb Nanda, Seminar Coordinator hosted the program very nicely and mentioned useful insights related to the theme of seminar.

In the first technical session Shri Ratan Singh, Sr. Advocate and International Arbitrator, explained changes in Arbitration Law, Key features of Law of damages particularly compensatory damages and LD. He clarified that as per the latest changes in law, officers of the same deptt. can’t not act as arbitrators.

Shri Kanwalpreet, Director Public Procurement Division, Deptt. Of Expenditure, Ministry of Finance in the second technical session presented various changes in Procurement policy and their impact on procurement. He particularly made a mention of new circular issued on 19th May 2023 regarding MSME and MII provisions and efforts to synthesize two issues.

Dr. Suresh Kr Sharma, Former National President mentioned about CRIMM and research activities of CRIMM.
The speaker of the third technical session was Shri Bhaskar Narang, former Principle, ED of Railway board. He discussed in detail the key feature of changes in MSME Classification, reservations of products & services for SMEs, preference for Make in India, treatment of traders for purchase preferences etc.

The fourth technical session was on Transparency and Vigilance issues in digital procurement scenario. Shri Shailendra Singh, Chief Technical Examiner from CVC mentioned about challenges for vigilance authorities and mentioned about how tendering process could be affected by illegal and undesirable activities at the backend by service providers. Many questions regarding mark up on GeM in manpower supply contracts and the concern for minimum wages for labour made the session very lively.

The fifth and final technical session was Emerging best practices in procurement. Shri H K Sharma explained how best practices are leading to unlocking of excellence in procurement.

Shri Sanjeev Kumar Bhatia, Hony. Treasurer, IIMM Delhi branch and Vice President Indraprastha Gas Ltd summed up the activities of the day and proposed a vote of thanks. The seminar was well attended by 150 delegates and feedback from participants showed very high appreciation for the seminar and need for more interactions on these topics by way of more seminars.
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