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MATERIALS MANAGEMENT REVIEW

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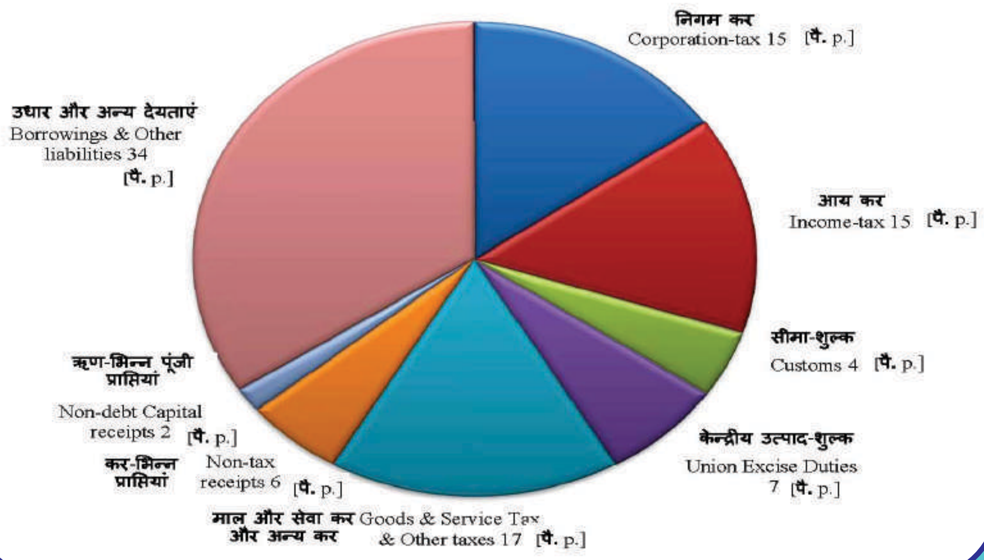
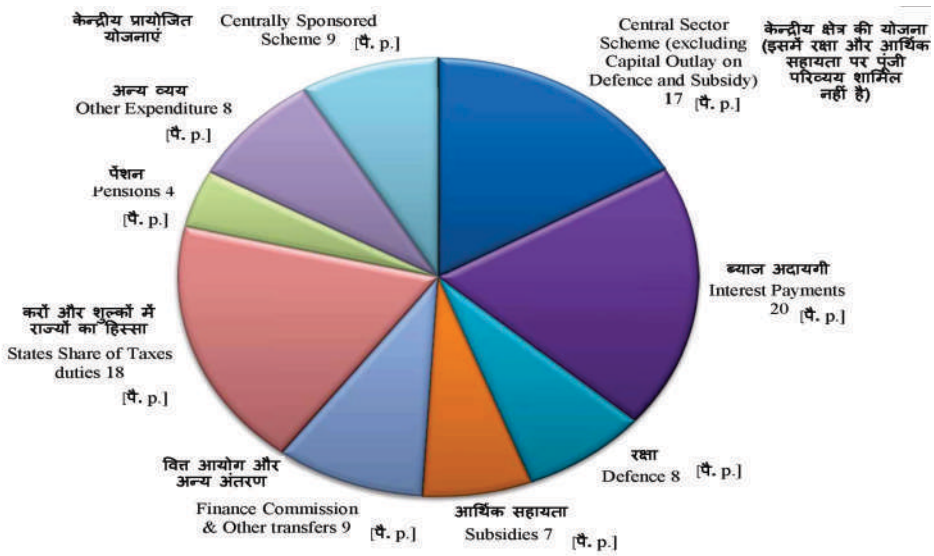
Rupee Comes From (Budget 2023-24)



Rupee Goes to (Budget 2023-24)



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NHO- Delhi Office
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From the Desk of Chief Editor & National President

India has recently overtaken Britain as the fifth largest economy in the world with a nominal GDP value at USD 3.8 Trillion. India has been tagged as one of the fastest growing economies with estimated 6.1% GDP growth (as per IMF) for the year ending March 31st, 2023 at a time when the global recession is already on the cards and clouds of apprehension have grown thicker for the global economy. As per the report of IMF, global growth is expected to slow down from 3.4% in 2022 to 2.9% in 2023 and a slight recovery in 2024 to 3.1%.

Indian Govt. has utilised these estimates to plan its spending priorities for Union Budget 2023-24. The Budget was presented by Hon'ble Union Finance Minister, Smt. Nirmala Sitharaman on Feb 01, 2023 and referred as first budget of 'Amrit Kaal'. The budget has followed Saptarshi's i.e. seven priorities of inclusive development, reaching the last mile, infrastructure & investment, unleashing potential, green growth, youth power and financial sector.

The budget has offered some or other thing for everyone and has earned appreciations from various sectors for its inclusiveness and being growth oriented. However, the key features of the budget which will spur growth while being pro-environment include Green Growth, Logistics, Technology & Research, Start-ups and youth power. The government's proposal to raise the income tax rebate limit from ₹ 5 lakh to ₹ 7 lakh in the new tax system will be a huge relief for the middle class and all tax payers in the nation.

Of late, Hon'ble Prime Minister, during his webinar on Green Growth, said that, India has identified three pillars i.e. Increasing Renewable Energy Production, Reducing the use of Fossil Fuels and moving forward to a gas based economy to establish India as a leading player in Green Growth and Energy Transition. The budget has offered an outlay of Rs 197 Billion to facilitate the Green Growth.

Budget has a provision of Rs 750 Billion (including a capital of Rs 150 billion by private players) for improving logistical infrastructure for which 100 critical transport infrastructure projects have been identified (for first and last mile connectivity) for Ports, Coal, steel, fertiliser and food grain sectors. In addition to this, 50 other infrastructure projects like Airports, heliports, water aerodromes and revival of advanced landing grounds for boosting regional connectivity.

Three centres of excellence for Artificial Intelligence will be set up in top educational institutions under the vision of 'Make AI in India and Make AI work for India'. Further, to support Entrepreneurship, budget has proposed to extend the date of incorporation for income tax benefits to start-ups from March 31, 2023 to March 31, 2024. For the skill development of the youth, the government has introduced Pradhan Mantri Kaushal Vikas Yojana 4.0, and also proposed a plan to establish thirty Skill India International Centres in various states.

Furthering the budget provisions, several announcements on basic customs duty were made to boost green mobility (lithium ion batteries used in EVs) and mobile manufacturing with a view to enhance export-oriented production. To promote value addition in local TV manufacturing, BCD on parts of open cells of TV panels has been reduced to 2.5%.

Union budget for 2023-24 gives a definite boost for improvement of Supply Chain in the country. Industry should also adopt the changes in the supply chain management to have efficient, agile and resilient supply chain.

I wish happy Holi to all the readers.

H. K. SHARMA
mmr@iimm.org

Correspondence :
MATERIALS MANAGEMENT REVIEW

Indian Institute of Materials Management
4598/12 B, Ist Floor, Ansari Road,
Darya Ganj, New Delhi - 110 002.
Phones : 011-43615373
Fax: 91-11-43575373
E-mail: iimmdelhimmr@gmail.com & mmr@iimm.org
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4598/12 B, Ist Floor, Ansari Road, Darya Ganj, New Delhi - 110 002.
Phones : 011-43615373 Fax: 91-11-43575373
E-mail: iimmdelhimmr@gmail.com & mmr@iimm.org
Website : www.iimm.org

EVOLVING QUALITY TECHNOLOGY AND SCM TOOLS FOR GROWTH OF MSME SECTOR IN POST COVID-19 PANDEMIC PERIOD: A RESEARCH PAPER OF GLOBAL PERSPECTIVE

PROF (DR) GOUTAM SENGUPTA
goutamsenguptacbs@gmail.com

Characteristics of SMEs across the globe : As per World Bank,Small and Medium Enterprises (SMEs) play a major role in most economies. The word SME and MSME are interchangeable excepting MSME brings a focus on micro sector. All over the world the term SME is commonly used excepting in few of the regions we came across the use of terminology MSME which is based on classification of investment and turnover of the units. Globally this is an important segment representing 90% of businesses, more than 50% of employment and almost 50% of GDP. In our survey we found that major source of technological innovation and new productsare created by SMEs and in emerging markets 7 out of 10 jobs are generated in SME sectors. Thus, SMEs are the most dynamic components of the world economy and are essential for economic and social progress.

Fig 1: Estimated number of small and medium sized enterprises (SMEs) worldwide from 2000 to 2020(in millions)

However, the contributions of SMEs vary widely across firms and across countries and sectors.

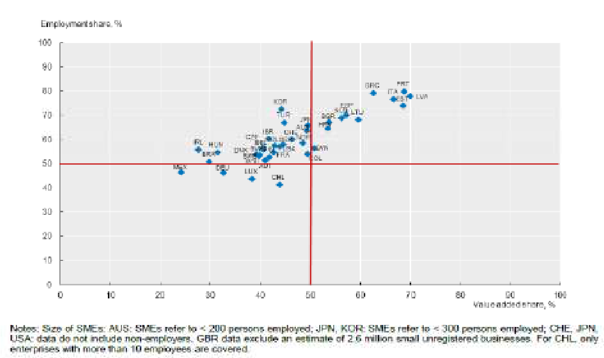


Fig 2: There are large differences in the SME contribution to employment and value added across countries, particularly in manufacturing

Smaller companies see larger impact from COVID-19

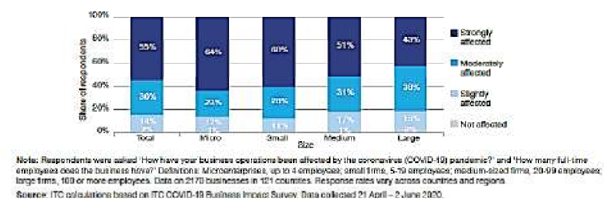


Fig 3 : A glance of the distribution of non-operating SMEs during September 2020

Most countries were heavily affected by the pandemic, but the worst results are expected to come from Africa and South East Asia and, in general, from emerging countries.

Survey to determine key factors to combat this scenario

A survey was undertaken to determine the principal factors to come out of this situation. The following research techniques were deployed:

- Paired Comparison Matrix
- Decision Evaluation Matrix

There were total of 225 respondents. Most of the respondents were global SME units, global multinational, SME experts, and few were institutions teaching and consulting in SME domain. Responses from the survey were analysed statistically and finally 12 key factors or proposals were identified.

Type of Respondents	No. of Respondents
Global SME Units	120
Global Multinationals	15
SME Experts	27
SME Consultants	32
SME Educational Institutions	31
Total	**225**

Table 1: Respondent Demography

The proposals emerged were tabulated under the following broad heads :

Proposal No.	Proposal Description
1	Cutting down wastes
2	Quick response to market changes
3	Better visualization of business
4	Reduction in WIP
5	Faster decision making
6	Induct more funds in business
7	Less paper more digital
8	Exit manufacturing and explore service sector
9	Temporary shutdown during pandemic
10	Focus on healthcare sector
11	Value driven lean processes
12	Retrench labour force

Table 2: Framing of Proposals

Identify criteria for selection

Identity	Criteria	Score	Rank
A	Cost effective	2	4
B	Impact	5	3
C	Sustainability	9	1
D	Robustness	8	2
E	Adaptability	1	5
F	Ease of implementation	1	5
G	Applicability for all SME segments	8	2

Table 3 : Evaluation Matrix

N.B: Scores and Ranks derived from Paired Comparison Table

Comparison	Points
Major difference	3
Medium difference	2
Minor difference	1
No difference	0

Table 4: Paired Comparison Criteria

A	B	C	D	E	F	G
	B2	C3	D2	E1	A2	G2
	B	C1	D2	B2	B1	G1
		C	C0	C2	C2	C1
			D	D2	D2	D0
				E	F1	G3
					F	G2
						G

Table 5: Paired Comparison Table

5 point scale 5 – excellent 4 - very good 3 good 2 – fair 1 - poor	Desired criteria identities →	Sustainability	Robustness	Applicability to all SME segments	Impact	Cost effective	Adaptability	Ease of implementation	Total	Rank
Proposals ↓	Weightage for criteria →	9	8	8	5	2	1	1		
Cutting down wastes		4	3	5	4	3	3	3		
		36	24	40	20	6	3	3	132	5
Quick response to market changes		5	4	5	5	4	4	3		
		45	32	40	25	8	4	3	157	2
Better visualization of business		5	5	5	4	4	5	3		
		45	40	40	20	8	5	3	161	1
Reduction in WIP		4	4	4	4	2	3	2		
		36	32	32	20	4	3	2	129	6
Faster decision making		4	4	4	4	5	5	4		
		36	32	32	20	10	5	4	139	4
Induct more funds in business		3	3	3	4	2	2	2		
		27	24	24	20	4	2	2	103	11
Less paper more digital		4	3	4	5	2	3	2		
		36	24	32	25	4	3	2	126	7
Exit manufacturing and explore service sector		2	4	4	3	2	2	2		
		18	32	32	15	4	2	2	105	10
Temporary shutdown during pandemic		4	3	4	3	2	2	3		
		36	24	32	15	4	2	3	116	9
Focus on healthcare sector		3	2	4	4	2	2	2		
		27	16	32	20	4	2	2	103	11
Value driven lean processes		4	4	5	5	4	5	4		
		36	32	40	25	8	5	4	150	3
Retrench labour force		4	3	4	3	3	5	4		
		36	24	32	15	6	5	4	122	8

Table 6: Decision Matrix

Results and Recommendations

Seven key areas emerged out of the survey needing dramatic improvement on the part of SMEs to enable them to survive in the post pandemic era:

R1: Better Visualization of Business

R2: Quick Response to Market Changes

R3: Value Driven Lean Processes

R4: Faster Decision Making

R5: Cutting down wastes

R6: Reduction of WIP

R7: Less Paper, More Digital

Agile Solutions

Agile is the ability to create and respond to change. It is a way of dealing with, and ultimately succeeding in, an uncertain and turbulent environment. Improvements in the identified key areas by practicing agile methodologies is the solution for survival of SMEs in the post pandemic era.

The Four Values of the Agile Manifesto

We are uncovering better ways of developing software by doing it and helping others do it. Through this work we have come to value:

Individuals and interactions over processes and tools
Working software over comprehensive documentation
Customer collaboration over contract negotiation
Responding to change over following a plan

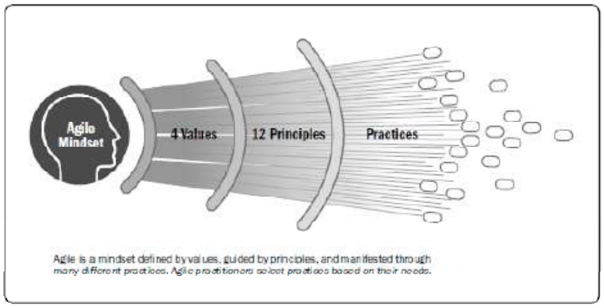
That is, while there is value in the items on the right, we value the items on the left more.

Source: *Agile Practice Guide, ISBN: 978-1-62825-199-9, Published By : Project Management Institute (PMI) Inc., USA*

SME Improvement Areas Addressed:

3. Value Driven Lean Processes
4. Faster Decision Making
5. Cutting down wastes
7. Less Paper, More Digital

The relationship between the Agile Manifesto values, principles and common practices



Source: Agile Practice Guide, ISBN: 978-1-62825-199-9, Published By : Project Management Institute (PMI) Inc., USA

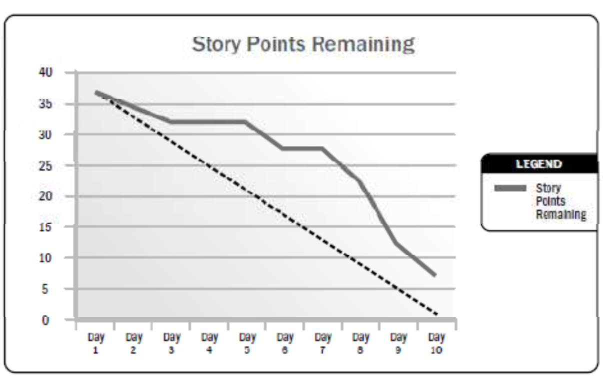
SME Improvement Areas Addressed:

2. Quick Response to Market Changes

4. Faster Decision Making

Agile is a mindset informed by the Agile Manifesto's values and principles. Those values and principles provide guidance on how to create and respond to change and how to deal with uncertainty.The embodiment of mindset, values and principles defines what is termed as the "Agile Approach".The various Agile methodologies which are in use today share common roots with the Agile mindset, values and principles.This relationship can be applied effectively to the improvement areas of Quick Response to Market Changes and Faster Decision Making.

Burndown chart

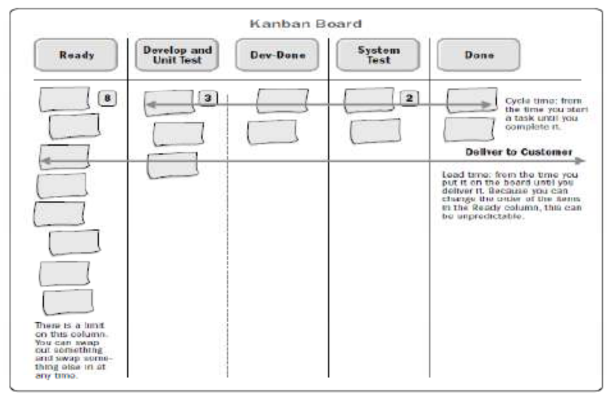


Source: Agile Practice Guide, ISBN : 978-1-62825-199-9, Published By : Project Management Institute (PMI) Inc., USA

SME Improvement Area Addressed:
1. Better Visualization of Business

Kanban Supply Chains

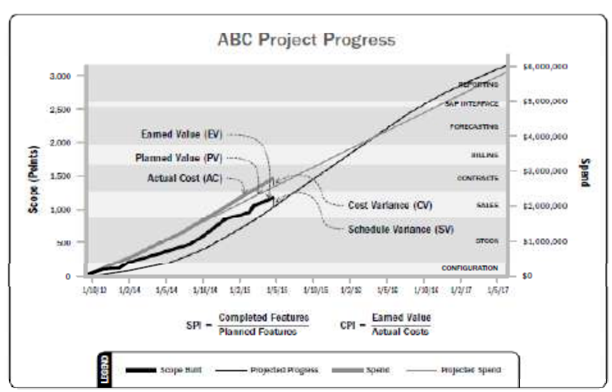
Kanban is a popular practice in industry and the concept was originated in Japan and the word Kanban indicates: "Kan" means visual and "Ban" means card. This concept is a powerful visual aid to track how the team is progressing in its completion of the work. We are witnessing that IT Companies are introducing this concept to implement a pool driven system, where the work in progress prevents the flow and thus resources are not optimally utilized. This helps to work with pre-defined WIP limits which is illustrated in the Kanban Board depicted below.The Kanban Board is a powerful tool and can be utilized very fruitfully for the improvement area : Reduction of WIP.



Source : Agile Practice Guide, ISBN : 978-1-62825-199-9, Published By : Project Management Institute (PMI) Inc., USA

SME Improvement Area Addressed:
6. Reduction of WIP

Earned value in an agile context



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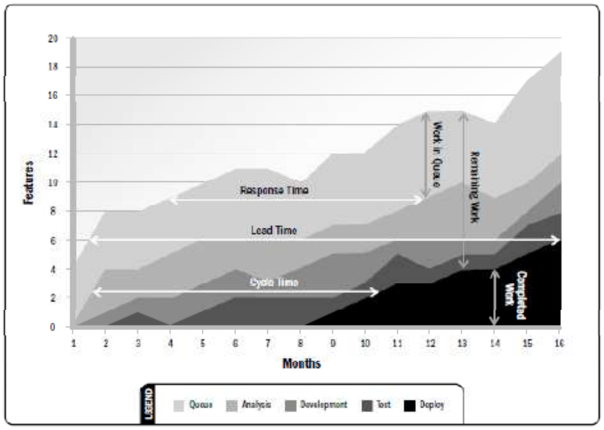
SME Improvement Area Addressed:

1. Better Visualization of Business

Cumulative flow diagram



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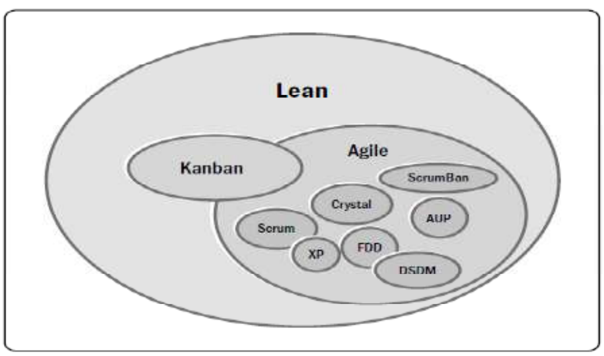
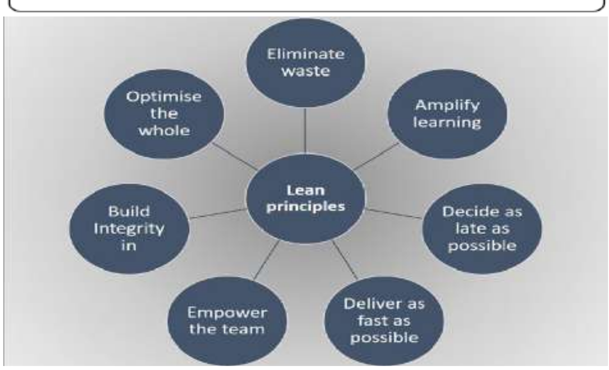
SME Improvement Area Addressed:

1. Better Visualization of Business

5. Reduction of WIP

Lean





Source : Agile Practice Guide, ISBN : 978-1-62825-199-9, Published By : Project Management Institute (PMI) Inc., USA

SME Improvement Areas Addressed:

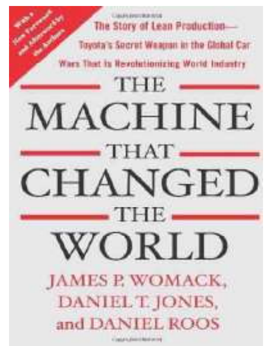
2. Quick Response to Market Changes

3. Value Driven Lean Processes

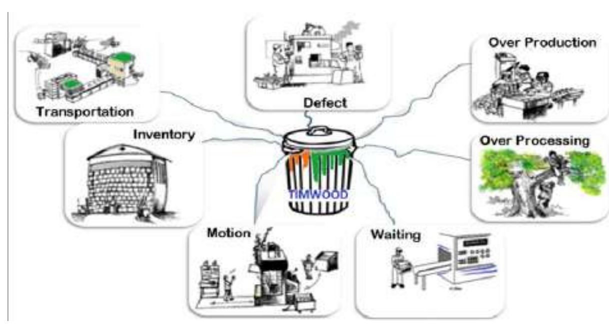
5. Cutting down wastes

The Lean Machine

- Half the hours ofhuman effort in the factory
- Half the defectsinthe finishedproduct
- One-thirdthe hoursofengineering effort
- Half the factoryspacefor the sameoutput
- A tenthor lessof in-processinventories



The concept of Lean has its root in Toyota Production System(TPS) and the wonderful piece of work "The Lean Machine" as authored in the book shown above was based on the famous Toyota story. The Lean concept is now adopted in Agile as well as software industry with certain modifications as is explained in the subsequent paragraphs. The principles of Lean can be used with great success for the improvement areas : Quick Response to Market Changes, Value Driven Lean Processes, Cutting down wastes.



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Why Lean is more adaptable in SMEs vis-à-vis Large Corporations?

Custom Approach:SMEs due to their flexible structures can create a Custom Approach for implementation of Lean different than an overall standard approach with rigid structures as followed by large corporations.

Flexibility And Less Bureaucracy: Our experience in implementing Lean in large organisations reveal that approval processes prevent the quick adaptations. Where as in MSMEs the flexible structures hasten up the speed of implementations.

Creativity: Creativity is an enabler in implementation of Lean and MSMEs can notice, appreciate and recognise creativity of its employees much faster compare to large corporations

Adaptability:SMEs by structure are more adaptable towards change and thus Lean concepts can be introduced without much hindrance

Speed And Agility:SMEs are generally not top heavy and thereby embrace Speed and Agility with ease.

Passion With Purpose:SMEs are generally passion and purpose driven and can connect passion and purpose of its stakeholders with ease.

Perspective of Supply Chain Technology Tools in this Research

The sample respondents of this survey felt that strong fundamental philosophies of Supply Chain Technologies such as Lean, Agile and Green were not practiced by many of the companies worldwide. Practices like Supply Chain Integration and Circular Supply Chains took a back seat resulting into the collapse of Supply Chains which we witnessed during the recent pandemic. Respondents were more in favour of correcting these fundamentals rather than implementing Industry 4.0 Technologies as they felt that automation of a system with wastes shall lead to generation of wastes much faster.

Seven wastes in software

industry perspective:

1. Partially done work
2. Extra Feature (Gold Plating)
3. Re-Learning
4. Handoffs
5. Delays
6. Task Switching
7. Defects

Lean in Software Industry

Reference: Lean Software Development: An Agile Toolkit authored by Mary Poppendieck and Tom Poppendieck. (Salt Lake City, UT: Addison-Wesley Professional, 2003

In software industry, wastes can manifest in the form of:

1. Documentations which are not needed. Bare minimum documentation is preferred.
2. Handoffs amongst different roles are considered to be waste.
3. Unnecessary features which are termed as "Gold Plating" for which the customer is not willing to pay.
4. Code not tested, built and integrated in the system.
5. Too many blockers in the system in form of approvals and sign offs.
6. Ineffective meetings without a clear agenda, expected outcome and timeboxed.

Why Green Supply Chain?

It is the integration of eco-friendly methods into the conventional supply chain so as to minimize waste and carbon footprints and increase efficiency.The benefits to businesses from developing a green and sustainable multi-enterprise supply network via Green supply chain management (GSCM) techniques are numerous and compelling. They range from improved brand image to reduced costs, to reduced operational risks.GSCM encompasses every level of the supply chain, from product concept to distribution.

Lean Quality Technology and SCM Technology Tools

Pre-Pandemic Quality Technology and SCM Tools proved to be less effective and needed to be replaced by Lean, customer focused and easy to implement set of tools (Table next shows the comparison)

Application of Quality Technology and SCM Technology Tools (QTT/STT) for growth of SMEs in post pandemic phase

A Matrix was drawn up to identify the QTTs/STTs that were relevant in addressing the recommendations.The identified QTTs/STTs were applied in 48 SME units for a duration of twelve months to ascertain their effectiveness.Results before and after implementation were measured.

Sl.No.	QTT	G1	G2	G3	G4	G5	G6	G7
1	5S / Visual Management	“	“	“	“	“	“	“
2	Kaizen	“	“	“	“	“	“	“
3	Quality Circle			“		“	“	“
4	Lean Quality Circle	“	“	“	“	“	“	“
5	Kanban	“	“	“	“	“	“	“
6	Ishikawa Diagram	“	“	“	“	“	“	“
7	Pareto	“	“	“	“	“	“	“
8	Six Sigma	“	“		“			
9	Lean Six Sigma	“	“	“	“	“	“	“
10	TPM	“	“	“		“		
11	Simplified TPM	“	“	“	“	“	“	“
12	PDCA Cycle	“	“	“	“	“	“	“
13	Scatter Plots	“	“	“	“	“	“	“
14	Brainstorming	“	“	“	“	“	“	“
15	SMED / Poka Yoke	“	“	“	“	“	“	“
16	Flow Diagrams	“	“	“	“	“	“	“
17	Histogram	“	“	“	“	“	“	“

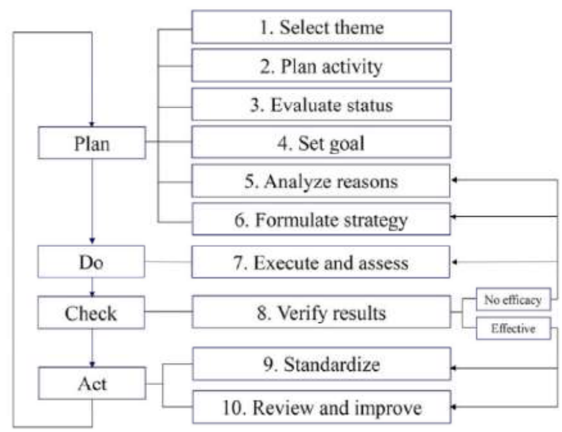
Table 7: Evaluation of QTTs/STTs

Kaizen

It is a Japanese Term which signifies small scale continuous improvements signifying incremental steps which addresses single problem.

Steps in Traditional Quality Circle

1. Defining the Problem
2. Analyzing the Problem
3. Identifying the Cause
4. Finding out the Root Cause
5. Data Analysis on Root Cause
6. Developing Solution
7. Foreseeing Possible Resistance
8. Trial, Implement and Checking Performance
9. Regular Implementation
10. Follow – up / Review



Lean Quality Circle(LQC)

Lean Quality Circle (LQC) is often formed with cross functional resource going away from thefundamental rigid principals of fixed regular formal meetings and following only the essential steps resulting into lesser man power deployed.Success of LQC depends on knowledge transfer, coaching and mentoring of grass-root employees.

The respondents preferred Lean Quality Circle over the traditional Quality Circle since it is an improved concept:

- less time-consuming
- less resources
- Inter-disciplinary

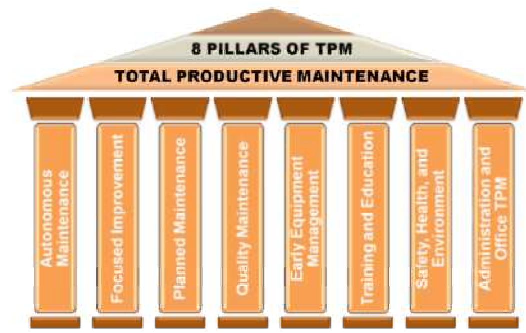
Lean Six Sigma

Six Sigma deals with reduction in variation. Lean Six Sigma addresses both waste reduction and variation reduction simultaneously. The respondents felt that Lean Six Sigma was a better choice.

The 8 pillars of TPM are as follow:

- Autonomous Maintenance (JISHU HOZEN)
- Focused Improvement
- Planned Maintenance
- Quality Maintenance
- Early Equipment Management
- Training and Education
- Safety, Health, and Environment
- Administration and Office TPM

Conventional Pillars of Total Productive Maintenance



Why Simplified Total Productive Maintenance (TPM)?

In the conventional TPM Model as depicted in the previous slide, 8 pillars focus on 8 different aspects and thus operate in 8 separate compartments needing a management person to coordinate, which tends to be a fat top-down organisation.A simplified TPM is the need of the hour for SME Sector, where the pillars are integrated and the focus is top driven as well as bottom-up.

Results of QTT/STT Implementation

Based on study conducted in 48 MSMEs (32 in India, 4 in Bangladesh, 3 in Nepal, 2 in Bhutan, 7 in Sri Lanka)

R No.	Recommendations	Before QTT /STTImplementation	After QTT/STTImplementation
R1	Better Visualization of Business	No. of customers = 160	No. of customers = 197
R2	Quick Response to Market Changes	No. of product introductions per quarter = 22	No. of product introductions per quarter = 47
R3	Value Driven Lean Processes	Average thru put time = 6 days	Average thru put time = 4.5 hours
R4	Faster Decision Making	Average time for impactful decision making = 3 days	Average time for impactful decision making = 4 hours
R5	Cutting down wastes	Av. Inventory = 16 days Av Waiting Time = 4 hours	Av. Inventory = 2 days Av Waiting Time = 0.25 hours
R6	Reduction of WIP	Average WIP = 2 days	Average WIP = 0.1 day
R7	Less Paper, More Digital	No. of paperless processes = 0	No. of paperless processes = 730

Table 8: Results of QTT/STT Implementation

Conclusion

SMEs are the backbone of economy and are in extreme stress due to the pandemic.The seven recommendations arising out of our research can help in mitigating their plight in the post pandemic scenario.Application and implementation of the simplified Quality Technology Tools (QTTs) and SCM Technology Tools(STTs)have proved to be more effective for MSMEs in the post pandemic scenario.

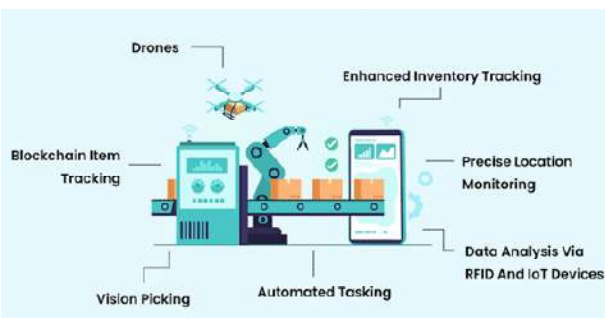
●●●

IMPACT OF SMART WAREHOUSE MANAGEMENT SYSTEM

DR. KAVITHA VENKATACHARI
kavitha.venkarachari@ubs.org.in

Introduction : Technology is advancing at a rapid pace in all sectors of the economy. Warehouses must be equipped with technologies that allow them to keep up with manufacturing, production, and consumer demand to be competitive. A smart warehouse is automated for increased productivity, efficiency, and accuracy, and the solutions adopted provide people and their processes with flexibility and capability. Automation minimizes your overheads, gives flexibility to your operating hours, and helps you to be more precise in calculating personnel requirements, in addition to reducing human error, lowering the danger of injury, and optimizing throughput.

1. Smart warehouses can assist in the automation of processes, enhancing workflow efficiency and lowering the risk of error.
2. With the help of technology, we can better process and use data to study consumer behavior, market trends, and other topics.
3. With smart warehousing, we can better assess the requirements of warehousing.



Benefits of the Internet of Things for warehouse Managers:

Error-free processes: The Internet of Things aids fulfillment of warehouse activities such as receiving, inventory management, order fulfillment, shipping, and accounting. The key advantage of installing IoT is that makes the process error free in warehousing procedures. Data collected from multiple sources is regularly and then automatically loaded into the warehouse management system, which is updated regularly to reflect changes in inventory levels. Manual data gathering and entry take time and frequently result in errors. When a specified quantity of stock is reached, the system will automatically produce a purchase order to replenish it, eliminating occurrences of stock shortage. In the long run, this will lead to an increase the customer loyalty.

Superlative predictive analysis: The data provided by IoT devices aid in supply chain optimization through effective material handling and smart warehouse management. It provides us with enough data to estimate demand and buy inventory accordingly. Managers' decision-making efforts are reduced by automated data collecting and real-time analysis. They take less time to put plans into motion and execute them flawlessly when they have critical numbers in front of them.

Streamlined fleet management: IoT technology allows for remote fleet monitoring. Warehouse managers can monitor the availability of their trucks for planned deliveries. It enables management to monitor the status of the cars and detect any impending faults, reducing the need for emergency repairs. Real-time tire pressure monitoring systems, route optimization systems, and driver monitoring systems ensure that the stock arrives on schedule and in good shape.

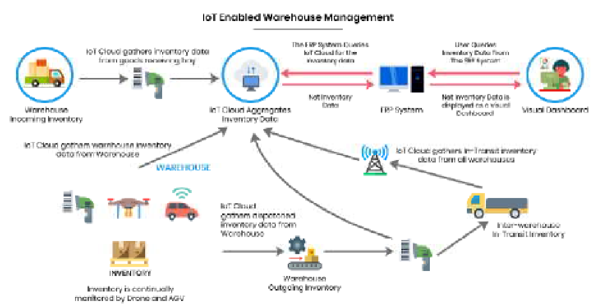
Better forecasting : IoT devices generate a large amount of data, which can be utilized to forecast demand. The information can assist warehouse managers in better planning their inventory and forecasting demand for specific items. Data analysis assists managers in detecting trends in consumer behavior that may be utilized to improve forecasts.

Timely regulatory compliance : In highly regulated manufacturing businesses, IoT devices offer the potential to ease traceability and inventory management for compliance. By providing precise information about shipping products, blockchain technology helps maintain regulatory compliance throughout the supply chain. It also contributes to the protection of workers on the floor by industrial security requirements.

Types of IoT technologies used within smart warehouses:

Beacons: Beacon technologies employ low-power blue tooth technology to send signals between various types of devices, allowing them to connect. Smartphones and other GSM-enabled mobile phones can be used to monitor them. Beacon technologies are integrated into the inventory management system to aid in the improvement of the company's asset management system, inventory balance, and information delivery. Bluetooth Low Energy (BLE) technology is great for tracking activity and mobility. Because many motions may be monitored from a single mobile phone, it helps to boost efficiency.

RFID tags: RFID tags are widely used in warehouses and are connected to products to convey data about the product to a central system through radio waves. It allows businesses to track their products around the warehouse without relying on manual input from employees.

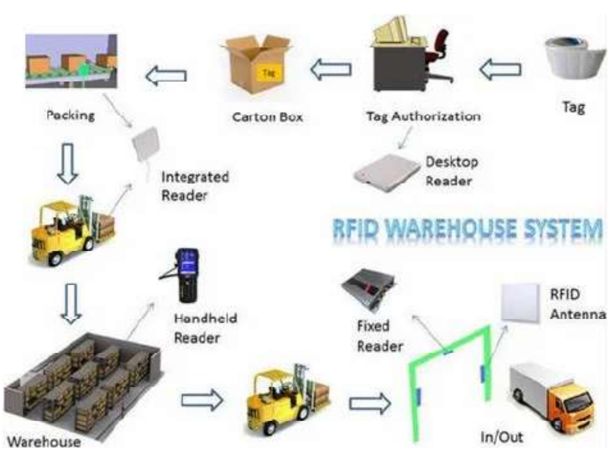


Source: Benefits of Using IoT Enabled Warehouses | Supply Chain Integration (oodles.io)

Robotic arms: Robotic arms can perform a variety of jobs such as picking and packing things. They can also be used to manage inventory and track items. They can be configured to perform numerous jobs at the same time.

IoT sensor types: Sensors can be independent devices or sensors integrated into everyday things or machines to make them smart, and they are classified based on the physical phenomenon they are designed to measure.

IoT temperature sensors: Temperature sensors are especially important in industrial plants, warehouses, weather reporting systems, and agriculture, where the soil temperature is monitored to ensure balanced and optimal growth.



Source: www.indiamart.com

Moisture IoT sensors: in addition to reporting and forecasting weather, moisture and humidity sensors are widely used in agriculture, environmental monitoring, food supply chain, HVAC, and health monitoring.

Light, sound, and acoustics Smart acoustic sensors in IoT enable us to measure the level of noise in a given location. Acoustic IoT sensor systems are gaining traction in smart city solutions due to their ability to measure and send data to aid in noise pollution prevention.

Water level IoT sensors: Data collected by water level monitoring sensors can be used in flood warning systems for analytics and prediction to help prevent natural disasters.

IoT sensors for presence and proximity: This sort of sensor can detect the existence of its target object and determine the distance between them by producing an electromagnetic radiation beam. With their excellent reliability and extended life, it is no surprise that they have quickly found their way into numerous IoT areas, such as smart homes.

Image and Motion IoT sensors: By converting optical data to electrical impulses, an image sensor allows the connected item to perceive its surroundings and act on it based on intelligence derived from data analysis. Image sensors are utilized whenever a smart device needs to see its surroundings, which includes smart automobiles, security systems, military equipment such as radars and sonars, medical imaging devices, and, of course, digital cameras.

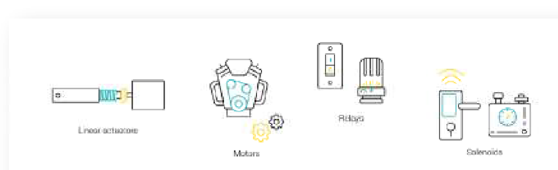
IoT actuator types: They are rarely apparent during operation because of their small size, but the impacts of their activity can be felt in automobiles, industrial machines, or any other electronic equipment incorporating automation technology.

Linear actuators -Linear actuators are used to allow objects or elements to move in a straight path.

Motors -Motors allow for accurate rotational movements of gadget components or entire objects.

Relays - are electromagnet-based actuators that drive power switches in lighting, heaters, and even smart vehicles.

Solenoids - are most commonly utilized in home appliances as locking or triggering mechanisms, but they also serve as controllers in IoT-based gas and water leak monitoring systems.



Wearables: Using linked gadgets, warehouse staff may swiftly identify things and deliveries. Wearables track the accuracy of the product harvest to gauge the efficacy of corporate training and keep track of individual employee results. Other features include heartbeat and vital monitoring to ensure that workers are not weary.

Automation: IoT may simply monitor all items and record the results in massive data units or warehouses. This automated tracking can lower the possibility of human error in management by saving at least 20 hours per month.

Predictive maintenance: Combining this operating equipment data with strong machine learning algorithms can help prevent forklift or other essential material handling equipment problems. This will allow the warehouse to downtime.

Using a cloud-based warehousing Management platform to track inventory: Cloud-based warehousing management tools incorporate data from IoT devices into their systems. Online warehouse management software, with a secure internet connection and an easy-to-use interface, will assist in keeping track of inventory levels and monitoring shipments. It will even tell you which products sell the best and where you can make improvements.

Optimise space utilisation: Spatial utilization optimization employs IoT technology to provide warehousing managers with a detailed picture of their storage rooms' layouts and settings.

Enhance equipment effectiveness: Improve equipment efficacy means that the warehouse can better manage its resources so that none of them are wasted.

Grants remote monitoring: The capabilities of smart warehousing systems enable firms to make real-time decisions without having to visit each location. Using a web-based tool, managers may now receive rapid access to real-time data from their warehouses. They can organize their operation more effectively if they can view their full operation remotely.

Increases employee productivity: IoT technology enables warehouses to automate processes, making them easier to manage and allowing decision-makers to act swiftly. Warehouse management systems (WMS) can improve worker performance by allowing them to complete more jobs without relying on physical movement while also assisting businesses in increasing efficiency through enhanced automation. They can also simply exchange information with their managers without having to submit paperwork, which can be time-consuming and inconvenient.

Reduces risk and cost: The Internet of Things (IoT) technology has been linked to warehouse management systems to monitor their safety. If something goes wrong, the system will notify the management automatically. Smart warehousing powered by IoT technology could also help warehouses by updating stock levels and letting them know which products are currently selling well.

Enables environmentally friendly operations: Optimizing warehouse operations can lead to more efficient energy usage, which eventually leads to lower carbon emissions, assisting businesses in meeting their environmental sustainability aims.

Blockchain: It gives warehouse and inventory managers real-time visibility into how well a product is selling and allows them to track its actual position. The technology assists store managers in detecting theft and managing inventory more effectively. Blockchain helps warehouse decision-making by allowing store managers to estimate demand based on data logs provided by the technology.

Conclusion: Smart warehouses use a variety of IoT devices to automate their operations and increase productivity. Businesses can employ RFID tags, sensors, beacons, robotic arms, wearable technology, and other modern solutions to optimize their business processes on a larger scale. Technology is constantly evolving, and by utilizing IoT technologies, businesses no longer need to rely on manual input because robotic arms can now take over to do jobs concurrently. There are numerous reasons for warehouse automation, ranging from improved accuracy to increased productivity, 24-hour operations, and cost savings. Many various sorts of firms, including Amazon, Walmart, and Target, have already implemented warehouse automation to some extent, and this trend is only anticipated to expand in the future.

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(Footnotes)

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3PL: CHANGING THE FACE OF WAREHOUSES

MANISHA ALMADI MIDHA

The warehouse sector is witnessing revolution with the entry of 3PL (third-party logistics) that are transforming the definition of warehousing in India. Manisha Almadi Midha tracks down logistics companies which have state-of-the-art warehouses, providing complete logistics solutions to various verticals including textile, apparel and fashion. However, the private players do have a few concerns which they want to be addressed, for further growth of the organized warehousing sector.

The warehousing sector in India,valued at 1 745 billion in FY 2013,has been growing at 15 per cent for the last three years. It is estimated togrow at 18 per cent to about 1 1,440 billion by 2017.According to global real estate consultancy, Knight Frank, India's warehousing requirementis expected to grow at an annual average rate of 9 per cent to 1,439 million sqft in 2019 from 919 million sq ft in 2014. The additional demand forwarehousing space, estimated at around 104 million sq ft till 2015 will entailinvestments of 1 15,000-16,000 crore peryear. The return on investment in the sector is around 12- 20 per cent.

The forayof 3PL

The warehouse sector is witnessinga boom in India's logistics industry. "They are increasing their capacity,expanding their network and adapting new concepts to match up withinternational standards. The steady growth in India's economy andglobalisation, increase in foreign direct investment (FDI), governmentinitiatives in terms of economic reforms and infrastructure, growth indifferent sectors like retail, manufacturing and automotive, and the changingbusiness dynamics are some of the reasons as how the 3PL (third-partylogistics) in the warehouse sector has changed the face of the four-walled,small, dingy warehouses," says Aakanksha Bhargava, CEO & president,PMR (PM Relocations).

Akash Bansal, business head atDelhi-based Om Logistics, explains, "As end-users are increasingly outsourcing their warehousing services, warehousing players are recognising theneed to be a part of the customer's logistics chain, as against being alandholder leasing out space. The warehousing sector in India has been evolvingrapidly from being traditional "godowns", a four-wall and shed withsuboptimal size, inadequate ventilation and lighting, lack of racking systems,poor hygiene conditions and lack of inventory management to warehouses withmodern set-ups such as storage and handling points where raw materials,intermediate and manufactured goods are collected, assorted, stored anddistributed to the point of consumption /sale."

Until about 2003-04, warehouseslacked the necessary infrastructure, safety norms, truckheight loading docks,etc. The closed-down manufacturing units were used as "godowns" todump goods. "However, these have given way to transformed, modernwarehouses, constructed according to international standards which provideheavy-duty floor, vertical racking, proper insulation, temperature control,high roofs, fire & electrical safety, and most importantly, a qualitystructure for employees to work," remarks Balaji V, COO-Contract Logisticsat Allcargo Logistics.

Providing warehouse services to the retail industry

There are a number of big players in the market. Global logistics provider DHL caters to large retail groups as well as fashion boutiques while DHL Express is the official logistics partner for IMG Fashion Weeks across the world, including Lakme Fashion Week in India. DHL offers complete logistics services from pre-retail to in-store and reverse logistics to its retail/fashion clients.

Safexpress provides 'Stock2Shelf' service to apparel outlets mostly at malls where footfalls are high and retailers are unable to store high inventories in their back rooms. This ensures lower storage cost for retailers; the distribution company does not have to manage and own warehouses near the point of consumption, and the customers get frequent stock replenishments. Safexpress also facilitates safe returns where the damaged or unsold products find their way back to the company's redistribution/ disposition warehouses. Other value-added services include cleaning & wiping, barcode labelling, racking, bin tagging, repacking, quality check, order management, supplier-wise inventory management and documentation (permits, Modvat, Pods, etc).

Om Logistics provides one-stop regional warehousing and fulfilment solution customised for retailers (Hennes & Mauritz (H&M), Woodland, Shahi Export, Nahar Spinning Mills, Arvind Mills, Orient Craft, Vardhman Group and Richa Global to name a few), and e-merchants to manage their logistics needs. "Our warehouses facilities come with a complete range of services from inventory management, order processing, pick & pack to after-sales support including returns management.

In today's time where the need of the hour is to minimise inventories and lower costs (fixed & variable), Om Logistics has become the lean logistics partner (LLP) for its customers," says Bansal.

Allcargo Logistics provides services such as pick & pack, barcode scanning, kitting (assembly), temperature control, inventory management, repacking, reverse logistics, bonded & non-bonded facilities, and scalable & customised warehousing to apparel, footwear and fashion accessories retailers. PMR's facilities include short- and long-term storage, pest control, vigilant security and fire drills, well-trained manpower, and record management services for corporate clients.

The conditions in a warehouse differ (for heavy goods like machinery vis-a-vis fashion items such as threads, fabric or apparel) in terms of racking and bins, SKU and shipping rates.

Space dynamics in cities & towns

Om Logistics has more than 15 million sq ft of warehousing space pan India. "We have approximately 50-60 warehouses of more than 30,000-40,000 sq ft which are used for logistics centres and transport corporations. The USP of Om Logistics is that we are an asset-heavy organisation, i.e. majority of these warehouses are owned by us," informs Bansal. Their major warehouses are at Binola, Narsapura, Bangalore, Faridabad, Chennai, Delhi, Kolkata, Ahmedabad, Halol, Pune, Noida, Goa, Patna, Ambala, Bhuj, Gurgaon, Haridwar, Indore, Kundali, Mumbai, Rudrapur (Pantnagar), Sanand and Vadodara.

Delhi logistics company Safexpress has 8 million sq ft of warehousing space across the country and plans to add more space in the next two years. It has logistics parks in Agra, Ahmedabad, Ambala, Bangalore, Chennai, Gurgaon, Indore, Jamshedpur, Kolkata, Mumbai, Nagpur, Puducherry, Pune and Salem, and plans to invest ¹ 600 crore in 32 more logistics parks.

Mumbai's Allcargo has 1.5 million sq ft area of warehousing space which they plan to expand to 10 million sq ft in the next 4-5 years. "About 70-80 per cent of our warehouses are located in cities - Mumbai, Bangalore, Chennai, Delhi, Indore, Mysore, Goa, Hyderabad and Nagpur, and about 20 per cent are in towns like Hosur. We are coming up with logistics parks in the textile hubs of Chennai and Delhi/NCR," says Balaji. Gurgaon-based PMR has 55,000 sq ft of warehousing area spread across 14 locations across India. "We are currently looking at funding, post which we are first planning to invest in digitising our process and then in a logistics park," informs Bhargava.

Private players v/s the unorganised sector

Bansal remarks, "The entry of international 3PL has brought about new technology interventions, automated material handling devices and standards. This has intensified competition for domestic players. In addition, growing demand for better services at lower costs has led to the emergence of organised warehousing in the country. Warehousing players are now stressing on efficient inventory management systems, with greater emphasis on value-added services such as consolidation, labelling, packaging & repackaging, barcoding, distribution services, custom clearance service, customer service and reverse logistics.

"The use of modern storage solutions, automation in warehouses for the effective utilisation of space and Management Information System (MIS) implementation are resulting in higher accuracy and cost. Whereas in the unorganised warehouses such things are manual and costs on the same are very negligible or not there."

The main areas of cost differentials between the two sectors are "Direct and indirect cost - labour, digital technology; inventory carrying cost - effective use of raw material, less paperwork and efficient working; maintenance - in terms of upkeep; energy - less energy utilised; and product damage - less," maintains Bhargava.

Key challenges remain

Bansal feels there are two types of challenges in the warehouse sector, one is strategic and the other is operational. These are discussed as under:

Infrastructure: An efficient warehousing operation hinges critically on high-quality supporting infrastructure that includes a good national highway network, interstate roads and congestion-free city roads. Less than 8 per cent of the warehousing sector is organised. The industry is fragmented and largely unorganised (92 per cent) and is dominated by small players with small capacities, not well-linked with the national highway network and interstate roads.

- Land availability: Procurement of land in a strategic location with clear title and proper approvals is still a key challenge for any new entrant to set up a warehouse.
- High cost of credit: Access to adequate and timely credit at a reasonable cost is one of the most critical problems faced by this sector. The main reason for this has been the high-risk perception among banks about the unorganised nature of this sector and the high transaction costs for loan appraisal.
- Lack of integration with complete supply chain: Though warehousing is an integral component of the supply chain, currently warehouses are structured on a standalone basis. Warehousing service providers often struggle with other supply chain stakeholders for integration of information and visibility. This disintegration in the upstream, downstream or both ends of warehousing leads to unpredictability of usage of space and facilities.
- Problem of trained manpower: The lack of training institutes adds to the woes of the warehousing

sector. Evolving warehouse management processes and operations with more demanding customers, lack of attraction for new recruits arising from poor working conditions, relatively less attractive incentives and benefits, and the emergence of attractive alternative career options are reasons that contribute to the skill shortage in the Indian warehousing sector.

- Lack of IT penetration: The warehousing sector in India, with some exceptions, is characterised by low technology levels that act as a handicap in the emerging Indian and global market.
- Lack of expertise in warehousing technologies: A majority of the Indian warehousing players today have inefficient methods of storing, handling and monitoring of goods. They also suffer from stock visibility issues, stock traceability, higher pilferages and damages.
- Process inefficiencies: There is an absence of standardised operating processes and procedures at warehouses. The material unloading, handling, storing and loading are more often carried out in an ad hoc manner. This not only builds in inefficiency but also leads to many mishandling problems including damages and subsequent increases in cost.

According to Bhargava, "The warehouse in the Indian logistics market faces challenges at every level. The increase in damaged goods due to slow penetration of new technology plays a crucial role. In an ever-growing country like ours, the warehouse capacity with up-to-date modern facilities, the fragmented nature of the industry and the lack of significant investments pose as great challenges which need to be addressed with utmost urgency.

"Suppliers get delayed, equipment fails, employees get sick, and orders are shipped to the wrong customer. Not having the right information with you leads to problems in warehouses and could have a direct impact on your bottomline and future success. Warehouse management software plays a crucial role in the warehouse management process."

Balaji adds, "Frequent power outage affects the efficiency of warehouses. We don't have power supply for 6-7 hours on an average daily in our Bhiwandi warehouse near Mumbai. A recent fire accident in a China warehouse suggests it wasn't in compliance with safety standards. These issues need to be addressed."

Ways to address issues

Bhargava suggests three measures:

- Space utilisation/warehouse layout: It's not about how much space you have; it's about optimising that space to avoid unnecessary labour. Keep fast-moving and high-selling inventory near the front of the facility so lift truck drivers aren't constantly travelling to the farthest reaches of the warehouse.
- Picking optimisation: For warehouses that still have manual processes in place, there tends to be no common route taken to pick items for shipment, which adds unnecessary time to the process. With system-directed pick, the routing can be automated, which will reduce wear and tear on equipment and the workforce.
- Inventory accuracy: When manufacturers don't have full visibility to their inventory, they face the problems of either running out of stock at the wrong time or carrying too much stock, and thus decreasing cash flow while increasing expenses to warehouse extra materials. In addition to these, Bansal feels "Warehousing has to have high IT penetration, more training Institutes/colleges on logistics sectors, better infrastructure and taxation systems to help and boost warehouses across India."

More government reforms required

The absence of the appropriate scale, reduced quality of warehousing infrastructure, low capital and operating inefficiencies are some of the reasons why government reforms are needed in this sector. "The warehousing sector also needs subsidised land from the government in order to improve the current scenario and set up more logistics parks. The government can also introduce GST, National Policy on Handling, Storage & Transportation, and increase the public-private partnerships (PPP). These steps if taken by the government will make the sector more organised," remarks Bhargava.

"The government is required to support warehousing players in their initiatives and provide for a more conducive environment by providing tax havens, funding facilities, upgrading infrastructure and accelerating the consolidation of the industry. The PPP model can also be developed for building dedicated training institutes for the logistics industry. Increase in IT adoption and knowledge infrastructure can provide a boost to the growth and maturity of warehousing players in India," adds Bansal.

"The approval procedures need to be made simpler. There is no single window support. More logistics parks have to be developed. The GST and Land Bills must be rolled out, and the process of purchasing land has to be made simpler. Transport taxes levied at checkposts/ tolls have to be reduced, especially when trucks in India are allowed to cover a distance of 250 km/day as against a distance of 600-700 km/day by international trucks. A reduction in our operative costs will enable us to serve customers better which will help improve the country's economy," rounds off Balaji.

Source: www.fibre2fashion.com

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BUDGET GLOSSARY

A

Annual Financial Statement

SPOGHT : On the Budget day, the finance minister tables about 10 documents. Of these documents, the most important one is the Annual Financial Statement. The government is required to present an estimate of receipts and expenditure every financial year - April 1 to March 31 to the Parliament. This statement is the annual financial statement.

B

Budget Estimates : During the Budget speech, the funds allocated for various ministries are laid out. These numbers are called Budget estimates. For instance, if the government sets Rs 1,000 crore aside for healthcare, then this amount is the Budget estimate for the healthcare sector. These estimates however are not the final commitment by the government but these are just estimates of the extent of expenditure, the government is willing to go for. The government later also gives a revised estimate of how much is possible for it to extend, although the difference may not be huge.

C

Current Account Deficit : The Current Account Deficit (CAD) is the shortfall between the money received by selling products to other countries and the money spent to buy goods and services from other nations. If the value of goods and services we import exceeds the value of those we export, the country is said to be in a deficit, and the difference in the two values is CAD. The current account includes net income, including interest and dividends, and transfers, like foreign aid.

D

Divestment or disinvestment means selling stake in a company. : Governments resort to divestment generally as a way to pare losses or to raise revenues. This could be from a non-performing asset, a loss-making company. This helps the government in raising non-tax revenue and to exit loss-making ventures.

D

Direct Taxes : Direct taxes are those levied directly on taxpayers - the income-tax, wealth tax or corporation tax.

D

Dividend Distribution Tax : Dividend Distribution Tax (DDT) is a tax levied on dividends distributed by companies out of profits to shareholders. The Budget in 2020 did away with the dividend distribution tax (DDT) in the hands of the company and instead decreed that tax be deducted at source (TDS) at 10 per cent on dividend income paid by a company to shareholders if the amount exceeded Rs 5,000 a year.

E

Economic Survey : Economic Survey brings out the economic trends in the country. The Survey analyses trends in sectors like agricultural and industrial production, infrastructure, imports, exports, employment, money supply and all the relevant economic factors that have a bearing on the Budget. It is presented in Parliament a day ahead of the Budget for the next financial year.

F

Finance Bill : Finance Bill is one that concerns the country's finances including taxes, government expenditures, government borrowings, revenues, etc. The Union Budget which contains all these is passed as a Finance Bill. It gives effect to the financial proposals of the government.

F

Fiscal Deficit : Fiscal deficit is a condition when the expenditure of the government exceeds its revenue in a year. The fiscal deficit is calculated as the total revenue generated minus the total expenditure. Government revenue comes from revenue receipts, recovery of loans and other receipts of the government. While most countries continue to project a deficit in their economies, a surplus is rare. The Fiscal Responsibility and Budget Management Act (FRBM Act), 2003, establishes financial discipline to reduce the fiscal deficit in the country

G

Gross Domestic Product : Gross Domestic Product (GDP) is the value of the goods and services produced within the country during a year. GDP is the measure of the country's economic output. In India, contributions to GDP are largely divided into three sectors - agriculture, industry, and services.

I

Indirect Tax : An indirect tax is one that is not paid directly by a person to the government. Indirect taxes are imposed on goods and services in the form of goods and services tax (GST).

I

Inflation is the measure of change in the average price of services and commodities, done at regular intervals.

Higher inflation hurts purchasing power of people and hence the government and policymakers take steps to maintain it at an optimum level. The government addresses the situation with respect to inflation and its impact on the economy.

K

K-Shaped economic recovery : Post the COVID-19 pandemic, economic recovery has been fractured and uneven. While many remain unemployed, the wealthiest have grown their fortunes-reinforced by a robust stock market. As these divergences expand, the term "K-shaped recovery" has emerged.

L

LTCG - Long Term Capital Gains : Capital gains mean the profit earned by an individual on the sale of his investment in assets such as stocks, real estate, bonds, commodities are taxed in India. In India, 'long-term' and 'short-term' are defined by the Income Tax Act, 1961. While a holding period of one year is considered 'long-term' for equities, the same is two years for real estate.

M

Minimum Alternate Tax (MAT) : The tax provision known as Minimum Alternate Tax (MAT) was created to bring these 'zero-tax paying companies' within the ambit of income tax and make them pay a minimum amount in tax to the government.

N

Non-plan expenditure : The government's total spending is divided into two sub-heads - plan and non-plan expenditure. Non-plan expenditure is what the government spends on non-productive areas. It includes salaries, subsidies, loans and interest. Plan expenditure pertains to the money set aside for various projects of ministries. It is spent on asset creation via sponsored programs and schemes.

O

Outcome Budget : The outcome budget is a progress report on what various departments have done with the allocation in the previous annual budget. It measures the outcomes of whether the money has been spent for the purpose it was sanctioned.

P

Public Account : Money held by the government in the case of Provident Funds, Small Savings collections, income of government set apart for expenditure on road development, primary education etc.- are kept in the Public Account. Public Account funds do not belong to the government and have to be finally paid back to the persons and authorities that deposited them.

Q

Quarterly Review of the economy : India's GDP is also reviewed quarterly to give an indication of the progress of the economy every three months of a financial year.

R

Revenue Deficit : Revenue deficit is that which occurs when the government's total revenue expenditure exceeds its revenue receipts. This happens when the actual amount of revenue does not correspond with the budgeted revenue.

S

Securities transaction tax (STT): Securities transaction tax (STT) is a tax levied while purchasing and selling securities listed on stock exchanges in India like equity, derivatives, unit of mutual funds, unlisted shares etc.

T

Treasury Bills: When the central government approaches the financial market to raise money, it does so by issuing two types of debt instruments - treasury bills and government bonds. Treasury bills are issued whenever the government needs money for a short period. These treasury bills are issued only by the central government, and interest on them is determined by market forces. Treasury bills, or T-bills, have a maximum maturity period of 364 days.

U

Union Budget : As per Article 112 of the Indian Constitution, the Union Budget of a year, also referred to as the annual financial statement, is a statement of the estimated receipts and expenditure of the government for that particular year.

V

Value-Added Tax (VAT) : The tax is based on the difference between the value of the output and inputs used to produce it. VAT brings in transparency to commodity taxation.

W

Wealth Tax : Wealth tax is levied on the total value of a personal asset and is for the richer sections of luxury assets such as jewellery, bullion, yachts and aircraft etc. Currently imposing such a tax does not exist but is being debated

Z

Zero-based Budget : Zero-based Budget refers to preparing the Budget from scratch or 'zero base'. In a zero-based Budget, no balances are carried forward. This concept emphasises the identification of a task and funding of costs irrespective of the current structure of expenditure.

●●●

KEY FEATURES OF THE UNION BUDGET 2023-24

What are the Constitutional Provisions regarding Budget?

§ According to **Article 112 of the Indian Constitution,** the Union Budget of a year is referred to as the **Annual Financial Statement (AFS).**

o It is a statement of the **estimated receipts and expenditure of the Government in a Financial Year** (which begins on 1st April of the current year and ends on 31st March of the following year).

§ Overall, the Budget contains:

o Estimates of **revenue and capital receipts,**

o Ways and means to raise the **revenue,**

o Estimates of **expenditure,**

o Details of the **actual receipts and expenditure of the closing financial year** and the **reasons for any deficit/ surplus in that year, and**

o The **economic and financial policy of the coming year,** i.e., taxation proposals, prospects of revenue, spending programme and introduction of new schemes/projects.

§ In Parliament, the Budget goes through **six stages:**

o **Presentation** of Budget

o General **discussion**

o **Scrutiny** by Departmental Committees

o **Voting** on Demands for Grants

o Passing an **Appropriation Bill**

o Passing of **Finance Bill**

§ The **Budget Division of the Department of Economic Affairs** in the Ministry of Finance is the **nodal body** responsible for preparing the Budget.

o The **first Budget of Independent India** was presented in **1947.**

What are the Highlights of Budget 2023-24?

§ A key theme of Union Budget 2023-24 is the focus on inclusive development - **Sabka Sath, Sabka Vikas** which specifically covers;

o **Farmers, Women, Youth, Scheduled Castes, Scheduled Tribes,** Other Backward Classes **(OBCs)**, Divyangjan **(PwDs)** and Economically Weaker Sections **(EWS),**

o Overall **priority for the underprivileged** (vanchiton ko variyata),

o There has also been a sustained focus on **UTs of J&K and Ladakh** and the **Northeast Region (NER).**

§ The Budget is along the lines of the **two-pronged growth strategy** first unveiled in 2019:

o **Incentivising the private sector** thus creating jobs and pushing growth.

o **'Minimum Government, Maximum Governance';** increasing capex and raising more revenues via **disinvestment.**

§ **Key Takeaways of the Budget:**

o Changes in the **new income tax regime** (in rebate limit and in tax slabs).

o A **33% increase in capital investment outlay** has been proposed, raising it to Rs 10 lakh crore (the **biggest in the past decade)**.

o **Changes in customs duty; reduced on** import of certain inputs for mobile phone manufacturing, shrimp feed etc. and **increased on** cigarettes, gold articles, compounded rubber etc.

o **Capital outlay for the railways increased to the highest ever** – Rs 2.40 lakh crore.

Part – A

What is the Budget's Vision for Amrit Kaal?

§ **Amrit Kaal:**

o The Finance Minister of India called it the **first Budget in Amrit Kaal.** The vision for the Amrit Kaal is an **empowered and inclusive economy** that is **technology-driven and knowledge-based** with a **robust financial sector.**

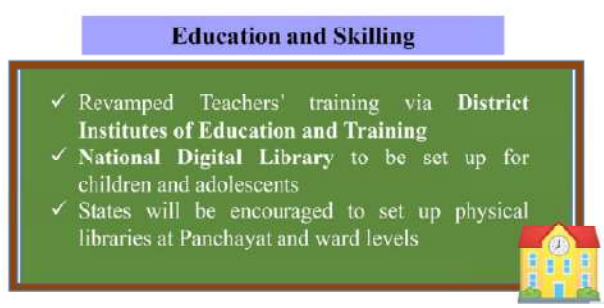
- § **The Budget identifies 4 transformative opportunities to be leveraged before reaching India@100:**
  - o Economic Empowerment of Women through SHGs
  - o PM VIshwakarma KAushal Samman (PM VIKAS)
  - o Tourism Promotion in Mission Mode
  - o Green Growth

What are the Priorities of Budget 2023-24?

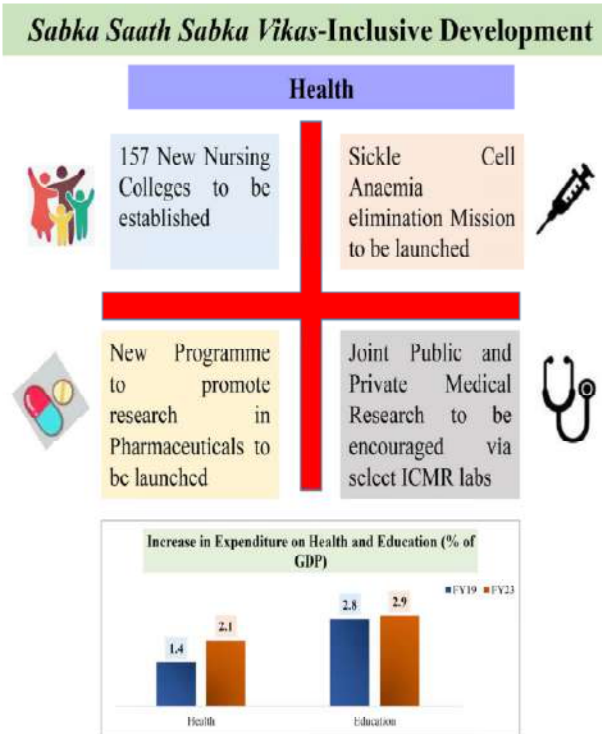
- § **Saptarishi:**

Priority 1: Inclusive Development

- § **Agriculture:**
  - o **Digital Public Infrastructure:** Digital Public Infrastructure for agriculture will be built as an open source, open standard and interoperable public good resulting in:
    - · Inclusive **farmer-centric solutions**
    - · Relevant information services for **crop planning/ health**
    - · Better access to **farm inputs, credit, and insurance**
    - · Growth-support of the **agri-tech industry and start-ups**
  - o **Funding for Agri-startups: Agriculture Accelerator Fund** will be set-up to **encourage agri-startups by young entrepreneurs** in rural areas.
  - o **Agri-Credit:** Agriculture credit target to be **increased to Rs 20 lakh crore** with **focus on animal husbandry, dairy and fisheries.**
    - · A new **sub-scheme of PM Matsya Sampada Yojana** with targeted investment of Rs 6,000 crore to be launched for fishermen, fish vendors and MSMEs.
  - o **Horticulture: Atmanirbhar Clean Plant Programme** will be launched to boost availability of disease-free, quality planting material **for high value horticultural crops at an outlay of Rs 2,200 crore.**
  - o Millets: To make India a global hub for **'Shree Anna' (Millets),** the **Indian Institute of Millet Research, Hyderabad** will be supported as the **Centre of Excellence** for sharing best practices, research and technologies at the international level.
  - o **Agri-Cooperatives:** To fulfil the vision of **"Sahakar Se Samriddhi"**, the Government plans to establish decentralized storage capacity and set up **multiple cooperative societies in uncovered villages** over the next 5 years.
- § **Education and Skilling:**



- § **Health:**
  - o **157 new nursing colleges will be established** in co-location with the existing 157 medical colleges established since 2014.
  - o A Mission to **eliminate Sickle Cell Anaemia by 2047** will be launched.



Priority 2: Reaching the Last Mile

§ **New 'Aspirational Blocks Programme':**

o Building on the success of the **Aspirational Districts Programme**, the **Aspirational Blocks Programme** was recently launched covering 500 blocks.

o It is aimed at improving the performance of areas across multiple domains such as **health, nutrition, education, agriculture, water resources, financial inclusion, skill development, and basic infrastructure.**

§ **PM PVTG Development Mission:**

o To improve socio-economic conditions of the **Particularly Vulnerable Tribal Groups (PVTGs), Pradhan Mantri PVTG Development Mission** will be launched.

o An amount of **Rs 15,000 crore** will be made available to implement the Mission in the next 3 years under the **Development Action Plan for the Scheduled Tribes.**

o The Centre will also **recruit 38,800 teachers and support staff** for the 740 **Eklavya Model Residential Schools**, serving 3.5 lakh tribal students.

§ **Water for Drought Prone Region:**

o In the **drought prone central region of Karnataka**, central assistance of **Rs 5,300 crore** will be given to the **Upper Bhadra Project** to provide sustainable micro irrigation and filling up of surface tanks for drinking water.

§ **Other Initiatives:**

o The **outlay for PM Awas Yojana is being enhanced by 66%** to over Rs 79,000 crore.

o A **'Bharat Shared Repository of Inscriptions (Bharat SHRI)' will be set up** in a digital epigraphy museum, with **digitization of 1 lakh ancient inscriptions** in the first stage.

Priority 3: Infrastructure and Investment

§ **Increase in Capex for Infra:**

o Capital investment outlay increased for the third consecutive year - by **33% to Rs 10 lakh crore** making it **3.3% of GDP.**

o The **'Effective Capital Expenditure'** is budgeted at Rs 13.7 lakh crore **- 4.5% of GDP.**

§ **Support to State Govts for Cap-Investment:**

o The Government has decided to **continue the 50-year interest free loan to state governments for one more year** to spur investment in infrastructure and to incentivize them for complementary policy actions.

o The enhanced **outlay for this is Rs 1.3 lakh crore.**

§ **Railways:**

o A capital outlay of **Rs 2.40 lakh crore** has been provided for the **Railways** - the highest ever outlay and about 9 times the outlay made in 2013- 14.

§ **Aviation:**

o **50 additional airports, heliports, water aerodromes** and **advanced landing grounds** will be revived for improving regional air connectivity.

§ **Other Transportation Projects:**

o **100 critical transport infrastructure projects,** for last and first mile connectivity for ports, coal, steel, fertiliser, and food grains sectors have been identified and **will be taken up on priority with investment of Rs 75,000 crore**, including **Rs 15,000 crore from private sources.**

o An **Urban Infrastructure Development Fund (UIDF)** will be established through use of **priority sector lending shortfall.**

· UIDF will be managed by the **National Housing Bank**, and will be used by public agencies to **create urban infrastructure in Tier 2 and Tier 3 cities.**

· **Rs 10,000 crore on a yearly basis** will be allocated for this purpose.

Priority 4: Unleashing the Potential

§ **Reduced Compliances and Jan Vishwas Bill:**

o To enhance ease of doing business, more than **39,000 compliances have been reduced** and **more than 3,400 legal provisions have been decriminalised** under the **amendments to the Companies Act 2013.**

o To further the trust-based governance, the Government introduced the **Jan Vishwas Bill** to amend 42 Central Acts.

§ **Centres of Excellence for AI:**

o To realise the vision of **"Make AI in India and Make AI work for India",** three **centres of excellence for Artificial Intelligence** will be set-up in top educational institutions.

§ **National Data Governance Policy:**

o To **facilitate innovation and research by start-ups** and academia, a **National Data Governance Policy** will be brought out, which will enable **access to anonymized data.**

§ **Digilocker for Data Sharing:**

o An **Entity DigiLocker will be set up for use by MSMEs**, large business and charitable trusts for **storing and sharing documents online securely,** whenever needed, with various authorities, regulators, banks and other business entities.

§ **Resolving Disputes:**

o **Vivad se Vishwas: Less stringent contract execution** for MSMEs (being provided as a relief to the MSMEs affected during the Covid period).

· **Easier and standardised settlement scheme** enabling **faster settlement of contractual disputes** of Govt and Govt undertakings.

o **e-Courts: Phase III of e-courts** will be launched for effective administration of justice.

§ **5G Technology:**

o **100 labs for developing applications using 5G services** will be set up in engineering institutions to realise a new range of opportunities, business models, and employment potential.

o The labs will cover, among others, applications such as **smart classrooms, precision farming, intelligent transport systems**, and **healthcare apps.**

Priority 5: Green Growth

§ **National Green Hydrogen Mission:**

o **An outlay of Rs 19,700 crores has been allocated** to the **National Green Hydrogen Mission** to facilitate transition of the economy to **low carbon intensity, reduce dependence on fossil fuel imports,** and make the country **assume technology and market leadership** in this sunrise sector.

o The target is to reach an annual production of 5 MMT by 2030.

§ **GOBARdhan Scheme:**

o **500 new 'waste to wealth' plants under GOBARdhan scheme** will be established to promote **Circular Economy (200 compressed biogas (CBG) plants** and **300 community/cluster-based plants**). Total Investment - Rs 10,000 crore.

o In due course, a **5% CBG mandate** will be introduced for all organizations marketing natural and biogas.

§ **Bhartiya Prakritik Kheti Bio-Input Resource Centres:**

o Over the next 3 years, the Centre will facilitate **1 crore farmers to adopt natural farming** by setting up **10,000 Bio-Input Resource Centres**, creating a national-level distributed **micro-fertilizer and pesticide manufacturing network.**

§ **Other Investments in Green Energy:**

o **Rs. 35,000 crore for priority capital investments towards energy transition** and **net zero objectives**, and energy security (Ministry of Petroleum & Natural Gas).

- o **Battery Energy Storage Systems** with capacity of 4,000 MWH to be supported with **Viability Gap Funding.**
- o **Rs 20,700 crore** (central support - Rs 8,300 crore) for **inter-state transmission system** for evacuation and **grid integration of 13 GW renewable energy from Ladakh.**

Priority 6: Youth Power

Priority 7: Financial Sector

§ **Credit Guarantee for MSMEs:**

- o In 2022, the c**redit guarantee scheme for MSMEs** was revamped and will take effect from 1st April 2023 through **infusion of Rs 9,000 crore** in the corpus.
  - · This will enable **additional collateral-free guaranteed credit of Rs 2 lakh crore.**
  - · The **cost of the credit** will be **reduced** by about **1%.**

§ **Financial Information Registry:**

- o A National Financial Information Registry will be set up to **serve as the central repository of financial and ancillary information.**
- o This will facilitate efficient flow of credit, promote financial inclusion, and foster financial stability.
- o A **new legislative framework, designed in consultation with the RBI,** will govern this credit public infrastructure.

§ **Small Savings Schemes:**

- o To commemorate Azadi Ka Amrit Mahotsav, a **one-time new small savings scheme, Mahila Samman Savings Certificate,** will be made **available for a two-year period up to March 2025.**
  - · This will offer **deposit facility upto Rs 2 lakh in the name of women** or girls (fixed interest rate of **7.5%**) with **partial withdrawal option.**
- o The **maximum deposit limit** for **Senior Citizen Savings Scheme** will be **enhanced from Rs 15 lakh to Rs 30 lakh.**
- o The maximum deposit limit for the **Monthly Income Account Scheme** will be **enhanced from Rs 4.5 lakh to Rs 9 lakh** (for **single account**) and from **Rs 9 lakh to Rs 15 lakh (**for **joint account).**

What is the Status of Fiscal Management?

§ **Utilisation of Funds for Capital Expenditure:**

- o The **Indian Finance Minister** stated that **all states must utilise their fifty-year loan for capital expenses** by the end of **2023-24.**
- o Most of this will be at the discretion of states, but a part will be conditional on states designated for specific purposes, such as:
  - · Replacing outdated **government vehicles**
  - · Improving **urban planning**
  - · Making **urban local bodies eligible for obtaining municipal bonds**
  - · Building housing for police officers
  - · **Constructing Unity Malls**
  - · **Creating libraries and digital infrastructure for children** and adolescents
  - · Contributing to the **capital expenses of central schemes.**

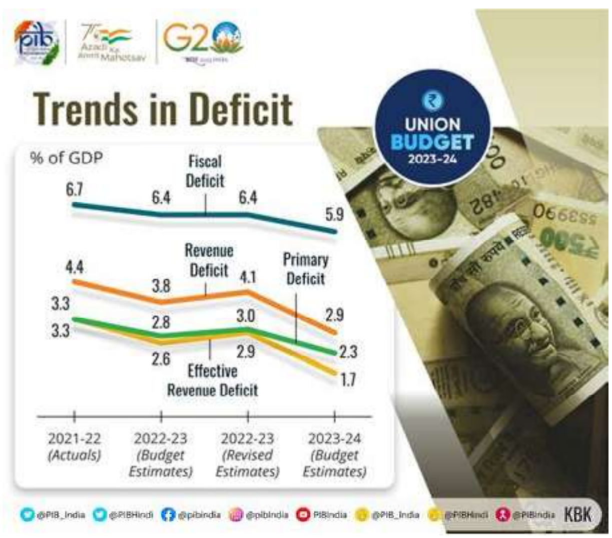
§ **Fiscal Deficit Allowed to States:**

- o States are allowed to have a deficit of **3.5% of their Gross State Domestic Product (GSDP)**, with **0.5%** of this amount specifically designated for power sector reforms.

§ **Revised Estimates 2022-23:**

- o **Total receipts**, (excluding borrowings): **Rs 24.3 lakh crore**
  - · **Net tax receipt: Rs 20.9 lakh crore.**
- o Total expenditure: **Rs 41.9 lakh crore**
  - · **Capital expenditure: Rs 7.3 lakh crore.**

- o **Fiscal deficit : 6.4%** of GDP.
- § **Budget Estimates 2023-24:**
- o Total **estimated receipts** (excluding borrowings): **Rs 27.2 lakh crore,**
- o Total estimated expenditure: **Rs 45 lakh crore.**
- · **Net tax receipts: Rs 23.3 lakh crore.**
- o **Fiscal deficit: 5.9%** of GDP.
- · To **finance the fiscal deficit in 2023-24,** the net market borrowings from dated securities are estimated at **Rs 11.8 lakh crore.**
- · The **gross market borrowings** are estimated at **Rs 15.4 lakh crore.**
- o Also, the government is committed to sticking to this plan to **reduce the fiscal deficit to** below **4.5% by 2025-26.**



Part – B

What are the Reforms Proposed in Direct Taxation?

- § **Personal Income Tax:**
- o There are five major announcements relating to the personal income tax. The **rebate limit in the new tax regime has been increased to ₹ 7 lakh.**
- · It means that persons in the new tax regime with **income up to ₹ 7 lakh will not have to pay any tax.**
- o The tax structure in the new personal tax regime has been changed by r**educing the number of slabs to five and increasing the tax exemption limit to ₹ 3 lakh.**
- § **Other Tax Reforms:**
- o **Standard Deduction:**
- · The new tax regime has proposed to **increase the standard deduction for salaried individuals to 50,000 rupees** and the deduction for family pension up to **15,000 rupees.**
- o **MSMEs:**
- · The limits for **presumptive taxation have been increased for micro enterprises and certain professionals** as long as the amount received in cash does not exceed **5% of the total gross receipts/ turnover.**
- · The **deduction for payments made to MSMEs** will only be allowed when payment is actually made to support their timely receipt of payments.
- o **Cooperatives:**
- · New **manufacturing co-operatives** that start manufacturing before 31.3.2024 will have **a lower tax rate of 15%.**
- · The limit for cash deposits and loans by **Primary Agricultural Co-operative Societies and Primary Co-operative Agriculture** and Rural Development Banks has been increased to **2 lakh rupees per member.**
- · **Tax Deduction at Source (TDS)** on cash withdrawals for co-operative societies has been increased to **3 crore rupees.**
- o **Startups:**
- · The date for **start-ups** to receive income tax benefits has been **extended to 31.3.2024.** The carry forward of losses for start-ups has been increased from **7 years of incorporation to 10 years.**
- o **Online Gaming:**
- · **Taxability on online gaming** will be clarified with TDS and taxability on **net winnings at the time of withdrawal** or at the end of the financial year.
- o **Gold:**
- · **Conversion of gold** into electronic gold receipt and vice versa will **not be treated as capital gains.**
- o **Exception from Income Tax:**
- · **Income of authorities, boards and commissions set up by Union or State laws** for housing, town and village development, and regulation, will be **exempt from income tax.**
- · **Agniveer Fund** has been given **Exempt-Exempt-Exempt (EEE) status.** Payments received by Agniveers enrolled in Agneepath Scheme, 2022 will be **exempt from taxes.**
- · Deduction in total income will be allowed for **contributions to the Agniveer Seva Nidhi** account by the Agniveer or the Central Government.

§ **Common IT Return Form**:

o To improve taxpayer services, the government **rolled out a proposal for next-generation Common IT Return Form** for taxpayer convenience, along with plans to strengthen the grievance redressal mechanism.

§ **Current and Proposed Tax Slabs:**

Tax Rate	Current Income Slab	Proposed Income Slab
Nil	Up to Rs 2.5 lakh	Up to Rs 3 lakh
5%	Rs 2.5 lakh to Rs 5 lakh	Rs 3 lakh to Rs 6 lakh
10%	Rs 5 lakh to Rs 7.5 lakh	Rs 6 lakh to Rs 9 lakh
15%	Rs 7.5 lakh to Rs 10 lakh	Rs 9 lakh to Rs 12 lakh
20%	Rs 10 lakh to Rs 12 lakh	Rs 12 lakh to Rs 15 lakh
25%	Rs 12 lakh to Rs 15 lakh	-
30%	Above Rs 15 lakh	Above Rs 15 lakh

What are the Reforms Proposed in Indirect Taxation?

§ **Custom Duties:**

o The number of **basic customs duty rates** for goods **other than textiles and agriculture** has been decreased to **13 from 21.**

o **National Calamity Contingent Duty (NCCD)** on specified **cigarettes** revised upwards by about **16%**

o **Increased Duties**:

· Articles made from gold and platinum

· Import duties on silver dore, bars, and articles

o **Exception from Duties:**

· **Compressed biogas** contained in blended compressed natural gas.

· Testing agencies that import **vehicles, automobile parts/components, sub-systems,** and tires for testing and/or certification purposes.

· Also, the **deadline for the customs duty on specified machinery for lithium-ion cell manufacturing for EV batteries** has been extended to 31.03.2024.

· **Denatured ethyl alcohol** used in the chemical industry.

§ **Legislative Changes in Customs Laws:**

o The **Customs Act, 1962** is going to be revised to set a **nine-month deadline for the Settlement Commission** to make a final decision after an application has been filed.

o The **Customs Tariff Act** will be revised to make the purpose and scope of Anti-**Dumping Duty (ADD), Countervailing Duty (CVD)**, and Safeguard Measures clearer.

o Changes will also be made to the **Central Goods and Service Tax Act:**

· The minimum amount of tax for starting a **prosecution under GST will be raised from 1 crore to 2 crore.**

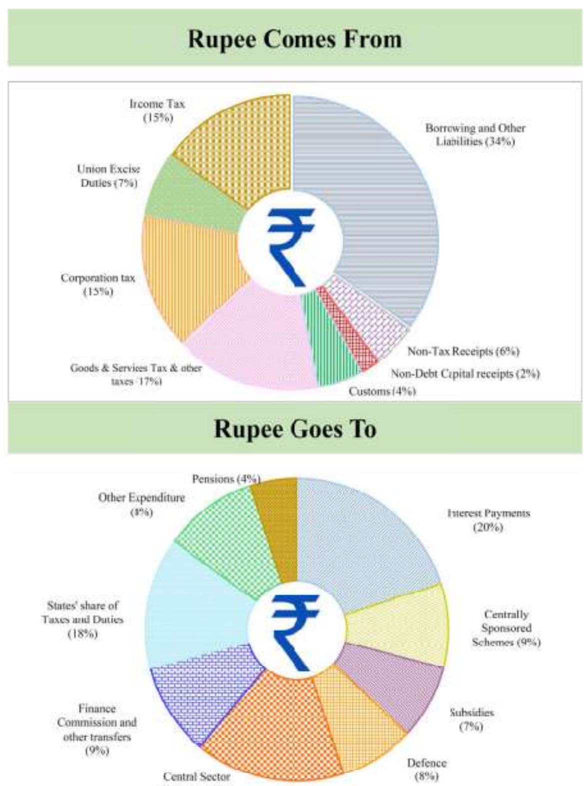
· The **compounding amount for tax will be reduced from 50-150%** to 25-100% of the tax amount.

· Certain offences will be decriminalised.

· The **filing of returns or statements will be limited to a maximum of three years** from the due date.

· Unregistered suppliers and composition taxpayers will be allowed to make **intra-state supply of goods through E-Commerce Operators (ECOs).**

Where does the Rupee Come from and where does it Go?



Source: Union Budget 2023-24

●●●

MSME'S GET BOOSTING DOSE IN BUDGET 2023

SN PANIGRAHI, PMP®, ATP (PMI - USA), FIE, C.ENG
GST & INTERNATIONAL BUSINESS & PROJECTS CONSULTANT, CORPORATE TRAINER, MENTOR & AUTHOR, NC MEMBER, IIMM
snpanigrahi1963@gmail.com

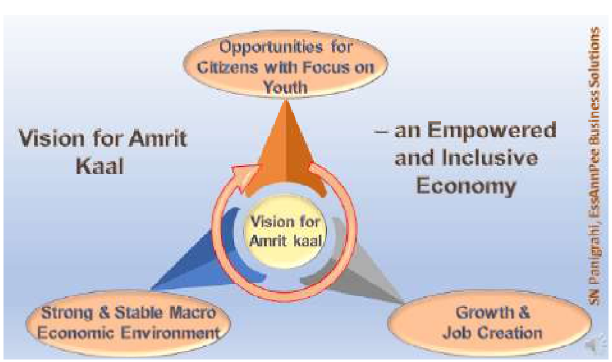
Introduction : The Union Budget 2023-24 is a well Balanced People's Budget. It has put inclusive development at the heart of the country's economic agenda by focusing on and facilitating ample opportunities for citizens to fulfil their aspirations, providing a strong impetus to growth and job creation and ensuring that the benefits reach the last mile.

Union Budget 2023-24 presented by Smt. Nirmala Sitharaman, Union Minister of Finance and Corporate Affairs in the Parliament outlined the vision of **Amrit Kaal** which shall reflect an empowered and inclusive economy. "We envision a prosperous and inclusive India, in which the fruits of development reach all regions and citizens, especially our youth, women, farmers, OBCs, Scheduled Castes and Scheduled Tribes", she said.

Vision for Amrit Kaal – an empowered and inclusive economy : Union Finance Minister highlighted that "Our vision for the Amrit Kaal includes **technology-driven and knowledge-based economy** with strong public finances, and a robust financial sector". To achieve this, Jan Bhagidari through **Sabka Saath Sabka Prayas** is essential, she added.

The economic agenda for achieving this vision would focus on three priorities:

1. facilitating ample opportunities for citizens, especially the youth, to fulfil their aspirations;
2. providing strong impetus to growth and job creation; and
3. strengthening macro-economic stability

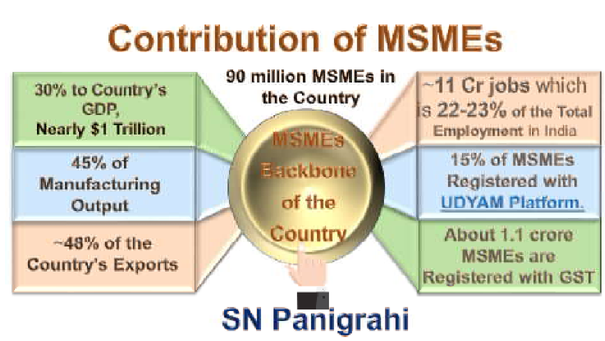


Saptarishi: Seven guiding priorities of Budget 2023-24 : Union Finance Minister announced the first budget in Amrit Kaal will be guided by seven priorities that complement each other and act as the 'Saptarishi'.

Contribution of MSMEs: MSMEs play a critical role in India's Economic Growth and Development. **MSMEs are the Backbone of the Country** and are the Growth Engines of our Economy**. There are around 90 million MSMEs in the Country.** Let's now discuss the Contribution of MSME Sector.

MSMEs Contribute :

- Around **30% to Country's GDP,** that is to the tune of **Nearly $1 Trillion.**
- Almost **45% of Manufacturing Output.**
- **Nearly 48% of the Country's Exports.**
- Creates around **11 Cr jobs** which is **22-23% of the Total Employment** in India.
- **15% of MSMEs Registered with UDYAM Platform.**
- About **1.1 crore MSMEs are Registered with GST**



Union Budget 2023-24 : Boost to MSMEs : Budget 2023-24 may benefit the MSME Sector Significantly as the Government Intends to provide a Significant Boost to MSMEs, through Revamping of Collateral-free Guaranteed Credit Scheme for MSMEs; Measures to Ensuring Timely Payment by Buyers to MSMEs, Enhanced Limits of Presumptive Taxation and some other relief to the Sector while Encouraging Domestic Manufacturing, Investment Opportunities, Support to Artisans, and focusing on Exports which Directly and Indirectly Boost the Prospects of MSME Sector.

Access to Finance: Collateral-free Guaranteed Credit : In a big relief to Covid-hit **90 million Micro, Small and Medium Enterprises (MSMEs),** Union Finance Minister Nirmala Sitharaman, announced in the Budget 2023-24 an infusion of Rs 9,000 crore into the corpus to revamp credit guarantee scheme for MSMEs. The scheme will be **effective from April 1, 2023**.

This will enable additional collateral-free guaranteed credit of Rs 2 lakh crore. Further, the cost of the credit will be reduced by about 1%.

This is expected to boost fund flow to the distressed and fund-starved MSME sector.

The scheme will give comfort to banks which are normally reluctant to lend to MSMEs in the absence of proper collateral.

It's a big boost for young entrepreneurs, thereby realizing the vision of PM Sri Modi ji of **Make in India** & **Atmanirbhar Bharat**.

Return of 95 per cent of the Forfeited Amount Relating to Bid or Performance Security : Further, to provide relief to MSMEs, finance minister said that in cases of failure by MSMEs to execute contracts during the Covid period, **95 per cent of the forfeited amount relating to bid or performance security, will be returned** to them by government and government undertakings.

The move is expected to benefit those whose capital was blocked as bid fee or performance guarantee to secure government and undertaking tenders **due to Covid-related Challenges and Economic Disruptions.**

Measures to Ensuring Timely Payment by Buyers to MSMEs : To support MSMEs in the timely receipt of payments, FM, Sitharaman also proposed the **deduction for expenditure incurred on payments made to them by buyers only when payment is actually made to MSMEs**.

"This means buyers cannot claim a deduction without first paying MSMEs. It will force them to pay in time.

The move is likely to force buyers to clear small businesses' dues without much delay.

Presumptive Taxation : Limits Enhanced

Presumptive Taxation involves the use of indirect methods to compute tax liability, where the taxable income is calculated based on assumptions instead of actuals. Under the Scheme, the micro enterprises & professionals are required to declare a given percentage of gross receipts as its income, and pay a fixed percentage of it as tax. Under Presumptive Taxation, small businesses and professionals are not required to maintain their books of account and get their accounts audited, providing relief from tedious tax filing exercises.

Till now, micro enterprises with a turnover of up to Rs 2 crore and certain professionals with a turnover of up to Rs 50 lakh could avail the benefit of presumptive taxation.

In the Budget 2023-24, the limits are enhanced to Rs 3 crore and Rs 75 lakh, respectively, for the taxpayers whose cash receipts are no more than 5% of Total Receipts. .

PM Vishwakarma Kaushal Samman : To Support Artisans The handicraft and handloom sector in India plays a vital role in the country's economy and cultural heritage. For centuries, traditional artisans and craftspeople, who work with their hands using tools, have brought fame to India through their creations. The FM said the art and handicraft created by them represents the true spirit of **Atmanirbhar Bharat**.

For the first time, an assistance package called PM Vishwakarma Kaushal Samman has been conceptualised for traditional artisans and craftspeople to enable them to improve the quality, scale and reach of their products to integrate them with the MSME value chain, Sitharaman said in her budget speech.

The components of the scheme will include not only financial support but also access to advanced skill training, knowledge of modern digital techniques and efficient green technologies, brand promotion, linkage with local and global markets, digital payments, and social security.

This will greatly benefit the scheduled castes, scheduled tribes, OBCs, women and people belonging to the weaker sections.

Pradhan Mantri Kaushal Vikas Yojana (PMKVY) 4.0 : Digital Ecosystem for Skilling

In order to further expand the digital ecosystem for skilling, FM, Sitharaman said a unified **Skill India Digital platform** will be launched enabling demand-based formal skilling, linking with employers including MSMEs, and facilitating access to entrepreneurship schemes.

The Government will introduce on-the-job training across all short-term courses while launching new age courses that will be industry-specific as part of the revamped Pradhan Mantri Kaushal Vikas Yojana (PMKVY) 4.0, to substantially improve the employability of Indian youth.

Finance minister Nirmala Sitharaman announced a host of skilling initiatives over the next three years that could make India the global hub for skilling, including stipends to 47 lakh youth, setting up of setting up of Skill India Digital Platform and building 30 Skill India International Centres across different states to open up job opportunities for Indian youths overseas.

PMKVY 4.0 will be industry centric and impart training on new age courses like coding, AI, robotics, mechatronics, IOT, 3D printing, drones and soft skills.

Under the National Apprenticeship Promotion Scheme, the government will provide stipend support to 47 lakh youth in three years through direct benefit transfer for which a pan-India National Apprenticeship Promotion Scheme will be rolled out.

As part of its **Vision 2047**, the government wants **India to be the largest skill bank in the world**, transforming itself into a hub of economic activities using sustainable technologies while also reaping the benefits of demographic dividend in the country.

Supply-side Policies in Budget to Boost Manufacturing

The government has proposed a number of **supply-side policies in Budget to boost manufacturing**. As a result of which, India may emerge as one of the favorite destinations for investments from both within and outside.

To mention a few, in the Budget the government has proposed to reduce the custom duties on several Electronic Components, while increasing it on the finished products. The Budget has also extended the concessional custom duty on several input parts to boost local manufacturing & investment to Encourage "**Make in India**" in the electronics sector.

Customs Duty Reduction to Make Indian Manufacturing Competitive

The custom duty on certain components like certain parts used for manufacturing of open cell television panels, reduced from 5% to 2.5%, and brought it down to nil on several mobile phone components – camera lens and parts used in the manufacturing of camera module (earlier 2.5% duty), palladium tetra amine sulphate for manufacturing of parts of connectors and specified items for manufacture of pre-calcined ferrite powder(earlier both were at 7.5% duty).

The basic custom duty exemption on certain components and accessories for manufacturing of CCTV Camera and IP camera, lithium-ion battery and battery pack, open cell and parts for LCD and LED TV panels, e-readers and video games is extended by one year till March 2024 to boost local manufacturing.

Similar exemption has also been extended on components used in the manufacturing of brushless direct current (BLDC) motors used in fans and appliances, ethylene – propylene – non-conjugated diene rubber (EPDM) for insulated wires and cables, moulds, tools and dies for parts of electronic components and equipment, parts used in the manufacturing of LED lights or fixtures including LED lamps and LED drivers, components of digital still image video camera and parts used in reception equipment of televisions.

Discouraging Imports to Encourage Local Production

With the intension to **Discourage Imports and to Encourage Local Production**, the Budget has proposed to double the basic custom duty on kitchen chimneys from 7.5% to 15%, while on heat coils for use in manufacture of electric kitchen chimney is being reduced from 20% to 15%.

Customs Duty on bicycles increased from 30% to 35%, and toys and parts of toys (except electronic toy parts) from 60% to 70%; compounded rubber is being increased from 10% to '25% or Rs. 30/kg whichever is lower.

These measures, in turn, will increase the prices of the imported products and make locally manufactured products cost competitive.

Digi-sharing of Documents

An "**Entity DigiLocker**" will be set up for use by MSMEs, large business and charitable trusts, according to the budget. This will help these companies store documents online securely so that these can be, whenever needed, shared with various authorities, regulators, banks and other business entities easily.

Conclusion

Finance Minister Nirmala Sitharaman, in the budget, had a slew of announcements that would impact the MSME sector.

The government has proposed to spend a record Rs 22,138 crore on allocations aimed at micro, small, and medium enterprises (MSMEs) ministry in the Budget 2023-24, giving a boost to employment in the country.

These measures propel the growth, specially of manufacturing sector backed by MSMEs. **India already overtook the UK as the world's fifth-largest economy in 2022, and is on track to achieving PM Narendra Modi's vision of a $5 trillion economy by 2026-27.**

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NEED ASSESSMENT, FORMULATION OF SPECIFICATIONS AND PROCUREMENT PLANNING

This is the second article in the series of articles for Public Procurement. This is in continuation of first article in the Feb 2023 issue from pages 5 to 15 titles "Public Procurement : Introduction to Policies and Principles."

Need Assessment : Procurements should be initiated only based on an indent from the user Department. The authority in the user Department initiating the indent for procurement shall first determine the need (including anticipated requirement) for the subject matter of the procurement. Description and Specification of Need assessment is of fundamental importance in ensuring value for money, transparency, competition and level playing field in procurement. The user Department shall maintain all documents relating to the determination and technical/financial/budgetary approvals of the need for procurement. During need assessments, the following matters are decided to comply with the 'Procurement Guidelines':

i) The expression/description of the need keeping in view the Value for Money (VfM) and to ensure wide competition. Therefore to the extent practicable it should be:

a) Unambiguous, complete, using common terminology prevalent in relevant trade;

b) In accordance with the guidelines prescribed if any in this regard;

c) Except in case of proprietary purchase from a selected single source, reference to brand names, catalogue numbers or other details that limit any materials or items to specific manufacturer(s) should be avoided as far as possible. Where unavoidable, such item descriptions should always be followed by the words "or substantially equivalent".

ii) Method of satisfying it (owning/leasing/hiring/outsourcing or through Public Private Partnership (PPP), and so on) may be determined as per policies declared in this regard or based on a techno-economic evaluation (using life cycle cost, if feasible) of various alternative methods of satisfaction of the need and compatibility and inter-operability with existing infrastructure or systems.

iii) The quantity of the subject matter of procurement, commensurate with economy:

a) Care should be taken not to make unnecessary procurements much in advance of actual requirements, if such procurement is likely to be unprofitable to the Government, coupled with unwarranted inventory-carrying cost. Where sales, consumption or usage limits of requirements have been laid down by the Competent Authority (CA), the officer signing the indent should also certify that the prescribed scales or limits are not exceeded. The authority preparing the indent shall neither package nor divide its procurement or take any other action so as to limit competition among potential bidders or to avoid its obligations under 'Procurement Guidelines'. Provided that in the interest of efficiency, economy, timely completion or supply, wider competition or access to MSEs, a indenting or procuring authority may, for reasons to be recorded in writing, divide its procurement into appropriate packages, or club requirements of other users for procurement. Some requirements e.g. IT Systems may have elements of Goods, Works and Services. It could be either sliced into of Goods, Works and Services elements or combined into a package. Such decisions for slicing or packaging should be based on technical and VfM considerations. It is also necessary to round off the calculated quantity to the nearest wagon load/truck load/package to economise on transportation; and

b) Units of quantity are a very important parameter. Some items may be manufactured in metric tons but may be used in units of numbers or units of lengths (for example, steel sheets/structural). For the sake of transparency, it is important to buy an item in units of manufacture. For example, it is better to buy steel/structural in units of weight since it has a tolerance in weight per unit of length; this usually works to the disadvantage of the buyer if it is bought in units of length. The buying and issuing units of an item may be different – but should be standardised.

c) Time-schedule and place of product/work/service delivery: Need assessment and generation of indent for procurement should be done sufficiently in advance of the time when goods are required. Delays in need assessment have adverse impact on the value for money and transparency. Great care is required to be exercised in filling up realistic dates for the requirement of material. The procuring entity should be allowed time in accordance with the establishment lead times. In urgent cases, the procuring entity may entertain indents providing shorter periods but such urgencies should be approved by the authority empowered to grant administrative approval for the indent and must be accompanied by proper justification.

d) Formulation of Specification to ensure value for money, transparency, level playing field and ensuring widest competition. This is further detailed in subsequent para.

Estimation of Cost:

1. The estimated cost in the indent is a vital element in various procurement processes, approvals and establishing reasonableness of prices at the time of evaluation of the bids. Therefore, it should be worked out in a realistic and objective manner. The prevailing market price ascertained through a market survey or budgetary quotations from one or more prospective suppliers or published catalogues/Maximum Retail Price (MRP) printed on the item is the main source for establishing the estimated cost of items for which there no historic data available. It may be noted that MRPs usually include significant margins for distributors, wholesalers and retailers;

2. For equipment/craft which are uniquely custom-built to buyer's specifications, the best way to get a fair assessment of costs is by obtaining budgetary quotes from potential parties. Ideally, there should be three quotes. However, there is need to have a time schedule for receipt of quotes to ensure some timeframe for this activity. Thus:

a) An attempt should be made to obtain as many budgetary quotes as possible from reputed/ potential firms and a time of 21 (twenty-one) days be indicated therefore. In the event of receipt of less than three budgetary quotes, two extensions of up to 10 (ten) days each may be considered; and

b) In the event of non-availability of three quotes within the above extended period, the estimates should be prepared on the basis of the number of budgetary quote(s) received, which may even be one; and where more than one budgetary quote is received, the estimate should be framed on an average of the quotes which will reduce variations and fluctuations;

3. Other methods for establishing the estimated cost in the indent and tender evaluation are:

a) Estimated rate in past indents of the same goods;

b) Last purchase price of this or similar or nearly equivalent requirements;

c) Costing analysis based on costs of various components/raw materials of the item;

d) Rough assessment from the price of the assembly/ machine of which the item is a part or vice versa;

e) Through the internal or external expert costing agencies; and

f) As a last resort, rough assessment from the opportunity cost of not using this item at all;

iv) These methods are not mutually exclusive and can be supplemented with escalations to cater for inflation, price increases of raw materials, labour, energy, statutory changes, price indices, and so on, to make them usable in conditions prevailing currently. In case of foreign currencies, the rate should be reduced to a common denomination of Indian Rupees. Price indices can be obtained from the following websites. Some may require prior free registration and some paid subscription:

a) For price indices of indigenous items: http://www.eaindustry.nic.in/home.asp.in (Ministry of Industry);

b) For metals and other minerals: http://www.mmronline.com/ or http://www.metalprices.com/index.asp or http://www.asianmetal.com/;

c) For price trends of nonferrous details; London Metal Exchange - https://www.lme.com/ gives price trends of nonferrous details, which often show volatile trends;

d) Other useful sites: http://www.tradeintelligence.com/ and http://www.cmie.com/. (Centre for Monitoring Indian Economy);

e) For price trends of different countries: http://www.imf.org/external/pubs/ft/weo/2015/01/ (International Monetary Fund) and

f) For organisation/chambers of commerce such as the (Indian Electrical and Electronics Manufacturer's Association): www.ieema.org;

Formulation of Technical specifications (TS)

The procuring authority should ensure that specifications are developed to ensure VfM, level playing field and wide competition in procurement [Rule 173 (ix) of GFR 2017]. The TS constitute the benchmarks against which the procuring entity will verify the technical responsiveness of bids and, subsequently, evaluate the bids. Therefore, well-defined TS will facilitate the preparation of responsive bids by bidders as well as examination, evaluation and comparison of the bids by the procuring entity. It would also help in ensuring the quality of the supplied goods. The procuring authority should ensure that the specification should:

i) Provides a level playing field and ensures the widest competition; and

ii) Be unambiguous, precise, objective, functional, broad based/generic, standardised (for items procured repeatedly) and measurable. TS should be broad enough to avoid restrictions on workmanship, materials and equipment commonly used in manufacturing similar kinds of goods;

iii) Set out the required technical, qualitative and performance characteristics to meet just the bare essential needs of the procuring entity without including superfluous and non-essential features, which may result in unwarranted expenditure;

iv) Normally be based on standards set by the Bureau of Indian Standards (BIS), wherever such standards exist. Preference should be given to procure the goods which carry the BIS mark. In the absence of BIS standards, TS may be based on the relevant International standards. Provided that an indenting authority may, for reasons to be recorded in writing, base the TS on equivalent international standards even in cases where BIS standards exist. For any deviations from Indian standards or for any additional parameters for better performance, specific reasons for deviations/modifications should be duly recorded with the approval of the CA. Where the technical parameters are only marginally different, Indian standards may be specified and the Departmental specifications could cover only such additional details as packing, marking, inspection, and so on, as are specially required to be complied for a particular end use;

v) All dimensions incorporated in the specifications shall be indicated in metric units. If due to some unavoidable reasons, dimensions in FPS units are to be mentioned, the corresponding equivalents in the metric system must also be indicated.

vi) Comply with sustainability criteria and legal requirements of environment or pollution control and other mandatory and statutory regulations, or internal guidelines, if any, applicable to the goods to be purchased;

vii) Make use of best practices. examples of specifications from successful similar procurements in the other organisations or sector may provide a sound basis for drafting the TS;

viii) Commensurate with VfM, avoid procurement of obsolete goods and require that all goods and materials be new, unused and of the most recent or current models and that they incorporate all recent improvements in design and materials, unless provided for otherwise in the bidding documents;

ix) Should have emphasis on factors such as efficiency, optimum fuel/power consumption, use of environmental-friendly materials, reduced noise and emission levels, low maintenance cost, and so on. Government of India has set up the Bureau of Energy Efficiency (BEE) (http://www.bee-india.nic.in) on March 1, 2002 under the provisions of the Energy Conservation Act, 2001, with the primary objective of reducing the energy intensity of the Indian economy. The Bureau initiated the Standards & Labelling Programme for equipment and appliances in 2006to provide the consumer an informed choice about the energy saving and thereby the cost saving potential of the relevant marketed product. The scheme is invoked for 21 equipment/appliances, i.e. Room Air Conditioners, RAC(Cassette, Floor Standing Tower, Ceiling, Corner AC), Tubular Fluorescent Tube Lights, Frost Free Refrigerators, Distribution Transformers, Direct Cool Refrigerator, Electric storage type geyser, Color TVs, Induction Motors, Ceiling fans, Agricultural pump sets, LPG stoves, Washing machine, Laptops, Ballast, Office automation products, Solid State Inverter, Diesel Engine Driven Monoset Pumps for Agricultural Purposes, Diesel

Generator, Inverter AC and LED Lamps. Of which the first 8 products have been notified under mandatory labelling since 7th January, 2010. The other appliances are presently under voluntary labelling phase. The energy efficiency labelling programs under BEE are intended to reduce the energy consumption of appliance without diminishing the services it provides to consumers. More the stars higher the efficient is the appliance. The threshold ratings prescribed by the Ministry of Finance are:

Appliance	**Threshold Star Rating**
Split Air conditioners	5 Star (under normal conditions where annual usages are expected to be more than 1000 Hrs)3 Star (where usage of AC is limited e.g. in conference rooms)
Frost	FreeRefrigerators 4 Star
Ceiling Fans	5 Star
Water Heaters	5 Star

We should try to build either the BEE Star rating where applicable and minimum energy efficiency where such star ratings are not yet available, into the TS (in accordance with Rule 173 (xvii) of GFR 2017). Such benchmarking illustrates use of neutral and dependable benchmarking in procurement of sustainable environmentally favourable goods by way of appropriately formulated Technical Specifications. In a similar fashion, other Type III Eco- labels as per ISO 14020 or voluntary Environmental Standard can be used for specifying environmental sustainability criteria.

x) Discourage procurement involving evaluation of samples: According to the existing guidelines on public procurement of goods, purchase in accordance with a sample should not be usually undertaken. Calling[31] for a sample along with the tender and deciding on the basis of evaluation of the sample may NOT be done. In certain specifications, there may be a built-in sample clause. Usually such clauses are stipulated to illustrate indeterminable characteristics such as shade/tone, make-up, feel, finish and workmanship, and so on. In some specifications, there may not be a sample clause but such indeterminable characteristics are left to be agreed to between the seller and buyer. One way to procure/indigenise certain spares whose drawings/specifications are not available is to procure in accordance with an available sample of the part. In such cases, supply must be in conformity with an agreed reference sample in such respects only, whereas for the remaining characteristics it must be in conformity with the laid down drawings/specifications. Procurement of such items should be decided on the basis of detailed specifications/drawings and no sample should be called for or evaluated along with the bids. If desired, a purchaser's reference sample may be displayed for prospective tenderers to illustrate the desired indeterminable characteristics, which final supplies from successful bidder(s) will have to meet in addition to the specifications/drawings. If required, in addition to the purchaser's reference sample, the provision for the submission of a pre-production sample matching the purchaser's sample by Successful bidder(s) may be stipulated for indeterminable characteristics, before giving clearance for bulk production of the supply. The Indent for items which are to be procured in accordance with a sample must be accompanied with three sealed samples as far as possible;

Essential Technical particulars

The essential Technical particulars to be specified in the tender document shall include the following to the extent applicable for a particular purchase:

xi) Scope of supply and, also, end use of the required goods;

xii) All essential technical, qualitative, functional, environmental and performance characteristics and requirements (such as material composition, physical, dimensions and tolerances, workmanship and manufacturing process wherever applicable; test schedule; if any), including guaranteed or acceptable maximum or minimum values, as appropriate. Whenever necessary, the user may include an additional format for guaranteed technical parameters (as an attachment to the bid submission sheet), where the bidder shall provide detailed information on such technical performance characteristics in reference to the corresponding acceptable or guaranteed values;

xiii) Drawings;

xiv) Requirement of the BIS mark, where applicable, mentioning all parameters where such a specification provides options;

xv) Requirement of an advance sample, if any, at the post contract stage before bulk production;

xvi) Special requirements of preservation, packing and marking, if any;

xvii) Inspection procedure for goods ordered and criteria of conformity;

xviii) Requirements of special tests or type test certificate or type approval for compliance of statutory requirements with reference to pollution, emission, noise, if any;

xix) Other additional work and/or related services required to achieve full delivery/completion, installation, commissioning, training, technical support, after- sales service and Annual Maintenance Contract (AMC) requirements, if any;

xx) Warranty requirements;

xxi) Qualification criteria of the bidders, if any; and

xxii) Any other aspects peculiar to the goods in question such as shelf life of the equipment, and so on.

2.2.3 **Need Assessment and Technical Specification - Risks and Mitigations**	
Risk	***Mitigation***
Need is either artificially created or exaggerated, with the intention to channel benefits to an individual or an organisation. For example, demand is created for a good that is not needed simply to benefit the company's owner.	**Keep records and involve stakeholders:** Records of decision making and data used should be kept. Involve procurement and finance functions at this stage also. End user and stakeholder consultations should be part of the process.
Delays in Assessment of Need and generation of Indent for Procurement, may lead to shortcut procurement procedures that	Need assessment should be done sufficiently in advance of the time when goods are required. In case or urgent

dilutes transparency and prevent achievement of value for money. It may also lead to delays in delivery of goods.	requirements, the urgency certificate should be approved by authority empowered to grant administrative approval for the indent, recording justification – why the need could not be formulated earlier.
The estimate of the costs may be inadequate. This may lead to inadequate response from the bidders and may delay finalisation of procurement. It may also adversely affect the quality of supplies.	Estimates of procurement should be prepared with due diligence, keeping in view inflation, technology changes, profit margins etc.
Need Description/ Specifications involving subjectivity: Procurements where samples are asked to be submitted along with the offer and the evaluation is based on the subjective evaluation of samples – may lead to allegations of corruption.	If required, a stock sample for indeterminable parameters such as, shade/tone, size, make-up, feel, finish and workmanship, may be displayed during procurement to which the offers must conform. If necessary, provide for submission of an advance sample by successful bidder(s) before giving clearance for bulk production of the supply.
Need Description/ Specifications and terms of reference are disproportionate to the need identified or made to tilt in favour one or a group of vendor(s) or contractor(s) to artificially restrict competition.	**Use a formal market discovery tool:** Pre-bid conference and/ or well publicised EoI may be used for discovery of the market. Otherwise, encourage and invite comments on the technical and commercial conditions in the bid document or hold pre-bid conference.
Asymmetric dissemination of vital need information: Dialogue for determining solutions available in the market is held only with selected prospective bidders, giving them undue advantage in preparing for the bidding. Selected prospective bidders get access to inside information not disclosed or disclosed late to others.	

Obtaining Technical, Administrative and Budgetary Sanctions/ Approvals and signing of Indents

Procuring Entities may lay down a schedule of powers for administrative and budgetary approval of indents generated for procurement of goods. Before granting such approvals, it should be certified that funds in the budget are available and liability for this indent is noted against the total available budget. In case the time schedule of delivery is urgent (or shorter than usual lead- time) an urgency certificate should be recorded justifying the urgency. The indenting authority may submit an indent in form of a Purchase Requisition to the procuring entity, giving it adequate time for procurement. Indenters should monitor the progress of the Indents submitted by them.

Procurement Planning : After receipt of the Indent, the procuring entity should take following decisions to initiate procurement, to ensure conformity to the Procurement Guidelines:

xxiii) Within 10 (Ten) working days of receipt of the indent from the user Department, the procuring authorities should critically review the description and TS enclosed with the indent for completeness/approvals/funding, VfM and possibility of the widest competition and seek clarifications from the indenting officer, if needed, before initiating such procurement;

xxiv) Reassessment of the quantity and appropriate aggregation of quantities of various users: The procuring authority shall normally neither package nor divide its procurement or take any other action so as to limit competition among bidders or to avoid the necessity of obtaining the sanction of higher authority required with reference to the estimated value of the total demand (Rule 157 of GFR 2017).

Provided that in the interest of efficiency, economy, timely completion or supply, wider competition or access to MSEs, a procuring authority may, for reasons to be recorded in writing, divide its procurement into appropriate packages, or club requirements of other users for procurement. Packaging of the contract and procurement planning should be done keeping in view the availability and possibility of eliciting the interest of the qualified firms; effective competition for the type and size of the contract; and access to MSEs.

For example for a particular contract, material to be procured may constitute more than 50 (fifty) per cent of the total cost of works or there are services which are a mix of consultancy services with substantial element of goods, such as procurement of an IT system. Such procurement could be done as a single composite contract comprising all components or divided into separate contracts for each category of procurement. In all such situations, the dominant aspect of the requirement and value for money aspects of a composite all-inclusive contract versus dividing the contract into respective categories should be carefully examined at the time of Need assessment/ Procurement Planning.

This is a crucial stage of decision-making in procurement planning for a better outcome and for VfM considerations;

xxv) Determine and declare in documents, any limitation on participation of bidders as per the Government's procurement policy regarding preference to certain sections of industry, if any. The procuring entity shall not establish any requirement aimed at limiting participation of bidders in the procurement process that discriminates against or amongst bidders or against any category thereof except to lay down a reasonable and justifiable eligibility or pre-qualification criteria for the bidders;

xxvi) Selection of a system of bidding (single/two stage; single/two bids; suitability for e-procurement or reverse auction);

xxvii) Select the mode of procurement (open tenders, limited tenders, single tenders, and so on);

xxviii) Decisions on the timeframe for completing various stages of procurement, which should be declared in the pre-qualification/bidder registration or bidding documents.

The procuring entity should endeavour to adhere to the time limit so decided and record reasons for any modification of such limits; and

xxix) Integrated procurement plan should be prepared for goods, works and services for the ensuing financial year based on the latest cost estimates, and realistic time schedule for procurement activities and contract implementation and thus schedule and stagger the procurements over the year with a view to ensure an even load on the procuring entity and the market and also to co-ordinate matching procurements of Goods, Works and Services for a project;

The procuring entity may publish information regarding the planned procurement activities for the forthcoming year or years on the central public procurement portal and website/ e-Procurement portal used by the procuring entity with a caveat that such publication shall not be construed as initiation of a procurement process and cast any obligation on the procuring entity to issue the bidding document or confer any right on prospective bidders.

Procurement Planning - Risks and Mitigations	
Risk	*Mitigation*
Procurement Planning	
Packaging, bundling and slicing of requirement is done to avoid open competition or reduce competition. Or it is too large to make it difficult for MSEs to participate. Possible clubbing/collaboration among different units having the same needs are not explored.	**Lay down** a clear policy for packaging and bundling of requirements. In large packages, the affordability of EMD and resultant restriction on competition may be kept in view and bidders may be allowed to bid for slices of the package by depositing proportional EMD.

QUIZ

1. A supply chain consists of all ________________ involved directly or indirectly in fulfilling a customer need
   a) activities
   b) policies
   c) strategies
   d) Entities

2. Supply chain integration includes three different focuses namely cooperation, coordination, and ____________
   a) Commercialization
   b) Collaboration
   c) Conversion
   d) Consumption

3. A characteristic NOT observed in a push supply chain is
   a) Anticipatory
   b) Responsive
   c) Forecast based
   d) Warehousing oriented

4. The goal of a supply chain is
   a) To deliver the right product to customers at any cost
   b) To monitor and control all entities involved in successfully delivering a product
   c) To collaborate with as many number of suppliers as possible
   d) To adopt technology that best suit the business strategy

5. Supply chain value is created by
   a) Providing multiple range of products
   b) Taking feedback from customers
   c) Making more accurate forecasts
   d) Increasing customer satisfaction at the lowest possible cost

6. INCOTERMS are used to
   a) Allocate responsibility for cost, risk, and ownership
   b) Specify delivery terms and conditions
   c) Fix price and date for delivery
   d) Allocation of risk and cost between buyer and seller

7. A successful supply chain is characterized by
   a) Large number of suppliers
   b) Large number of contracts
   c) Trust among trading partners
   d) Arms length relationship with core suppliers

8. The effect of lack of synchronization among supply chain members is referred to as
   a) Bottleneck
   b) Bullwhip
   c) Risks
   d) Constraints

9. A key measurement in freight transportation is
   a) Cubic foot
   b) Square foot
   c) Capacity utilization
   d) Ton-mile

10. Industry 4.0 is the convergence of
   a) Cyber-physical systems
   b) Robotics and automation
   c) Bigdata and artificial intelligence
   d) JIT and cloud technologies

JANUARY QUIZ ANSWERS

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

GOVERNMENT PROVIDES A BIG RELIEF TO MSMES FOR COVID-19 PERIOD; FULFILS PROMISE ANNOUNCED IN UNION BUDGET 2023-24

95% of bid or performance security forfeited for failure to execute contracts to be refunded; No interest shall be paid on such refunded amount.

Relief provided in all contracts for procurement of Goods and Services, entered into by Ministry/ Department/ CPSE etc. with MSMEs

The Ministry of Finance today provided a major relief to Micro, Small and Medium Enterprises (MSMEs) for COVID-19 period. In an order issued by the Department of Expenditure (https://doe.gov.in/sites/default/files/Vivad%20Se%20Vishwas%20I%20%20Relief%20for%20MSMEs.pdf), Ministries have been asked to refund performance security/ bid security and liquidated damages forfeited/ deducted during the COVID-19 pandemic. The order has been issued as a follow-up to the "Vivad se Vishwas-I" scheme announced in the Budget Speech 2023-24 by the Union Finance Minister. In Para 66 of the Budget Speech, she had announced that

"In cases of failure by MSMEs to execute contracts during the COVID period, 95 per cent of the forfeited amount relating to bid or performance security will be returned to them by Government and Government undertakings. This will provide relief to MSMEs".

COVID-19 pandemic, one of the biggest crises in the human history, had a devastating impact on the economy. It had a huge adverse impact on the MSMEs too. A number of MSMEs had highlighted the difficulties being faced by them in the last 2 years due to COVID-19 pandemic. To provide relief to the MSMEs, Government has in the last 2 years, announced many benefits for them. As a follow up to the relief measures announced earlier, the Ministry of Finance decided to give following additional benefits to MSMEs:

i. 95% of the performance security forfeited from such firms shall be refunded.

ii. 95% of the Bid security (Earnest Money Deposit), if any, forfeited from MSME firms in tenders opened between 19.02.2020 and 31.03.2022 shall be refunded.

iii. 95% of the Liquidated Damages (LD) deducted from such firms shall also be refunded. LD so refunded shall not exceed 95% of the performance security stipulated in the contract.

iv. In case any firm has been debarred only due to default in execution of such contracts, such debarment shall also be revoked, by issuing an appropriate order by the procuring entity.

However, in case a firm has been ignored for placement of any contract due to debarment in the interim period (i.e. date of debarment and the date of revocation under this order), no claim shall be entertained.

v. No interest shall be paid on such refunded amount.

As per the Office Memorandum issued by the Department of Expenditure to Secretaries of all the Ministries/ Departments of Government of India and Chief Secretaries of all States and Administrators of Union Territories, relief will be provided in all contracts for procurement of Goods and Services, entered into by any Ministry/ Department/ attached or subordinate office/ autonomous body/ Central Public Sector Enterprise (CPSE)/ Public Sector Financial Institution etc. with MSMEs, which meet the following criteria:

i. The contractor/ supplier should be registered as a Medium, Small or Micro Enterprise with Ministry of MSME, as on 31.03.2022.

ii. The original delivery period/ completion period was between 19.02.2020 and 31.03.2022.

The grant of relief will be monitored through Government e-Marketplace (GeM). MSME Vendors will be able to register on GeM portal and enter details of the applicable contracts. The list of the procuring entities will also be available on the portal. The portal will notify the nodal officers of each procuring entity to verify the claim of the MSME vendor. After due diligence, the nodal officer will refund the due amount and update the portal with the amount, date and transaction details of the payment. The portal will also provide reports to track pendency with each procuring entity.

The date of commencement of the process of applications for relief through GeM will be notified separately.

Source : PIB

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IMPORTANT NEWS FOR PUBLIC PROCUREMENT RELIEF FOR MSME - GOVERNMENT OF INDIA ISSUED A CIRCULAR TITLED WITH SUBJECT - "RELIEF FOR MSME"

CIRCULAR REPRODUCED BY H.K. SHARMA, CHIEF EDITOR - MMR

No.F.1/1/2023-PPD
Government of India
Ministry of Finance
Department of Expenditure
Procurement Policy Division

264-C, North Block, New Delhi.
6th February, 2023.

Office Memorandum

Subject: Vivad Se Vishwas I - Relief for MSMEs

Government has been getting many references from Micro, Small and Medium Enterprises (MSMEs) regarding difficulties being faced by them in the last two years due to COVID 19 pandemic. The Government had provided certain benefits to the industry (including MSMEs) in Government contracts in the past.

2 In order to further support MSMEs, it has been decided to provide relief in all contracts for procurement of Goods and Services, entered into by any Ministry/ Department/ attached or subordinate office/ autonomous body/ Central Public Sector Enterprise (CPSE)/ Public Sector Financial Institution etc with MSMEs, which meet the following criteria:

(i) The contractor/ supplier should be registered as a Medium, Small or Micro Enterprise with Ministry of MSME, as on 31.03.2022.
(ii) The original delivery period/ completion period was between 19.02.2020 and 31.03.2022.

3. For the MSMEs which meet the specified criteria, the following reliefs shall be provided:

(i) 95% of the performance security forfeited from such firms shall be refunded.
(ii) 95% of the Bid security (Earnest Money Deposit), if any, forfeited from MSME firms in tenders opened between 19.02.2020 and 31.03.2022 shall be refunded.
(iii) 95% of the Liquidated Damages (LD) deducted from such firms shall also be refunded. LD so refunded shall not exceed 95% of the performance security stipulated in the contract.
(iv) In case firm has been debarred only due to default in execution of such contracts, such debarment shall also be revoked, by issuing an appropriate order by the procuring entity.

However, in case a firm has been ignored for placement of any contract due to debarment in the interim period (i.e. date of debarment and the date of revocation under this order), no claim shall be entertained.

(v) No interest shall be paid on such refunded amount.

4. Government e-Marketplace (GeM) shall provide an online portal for the purpose implementation of this order. Broad functionality of the portal shall be as follows:

Step 1: GeM shall provide functionality to MSME Vendors to register on the portal through its authorized personnel.

Step 2: The registered contractor shall list out the applicable contracts on the portal. The list of the procuring entities shall be available only through drop down menu, which should be changed only with the approval of DoE. The details of the dispute should contain atleast following details: contract number, contracting authority, paying authority, Deducted/ forfeited amount.

Step 3: GeM portal shall intimate through email to nodal officers of each procuring entity to verify the claim of the MSME vendor.

Step 4: The nodal officer of the procuring entity shall after due diligence and refund of due amount as per this order shall update the portal with the amount, date and transaction details of the payment.

Step 5: Reports to track pendency in each procuring entity shall be provided by GeM.

5. The date of commencement of the scheme shall be notified separately.

06/02/2023

(Kanwalpreet)
Director(PPD)
Tel.No. 2309 3811; email: kanwal.irss@gov.in

To

1. Secretaries of all Ministries/ Departments of Government of India for information and necessary action. They are also requested to inform these provisions to all procuring entities under their administrative control.
2. Secretary, Department of Public Enterprises with a request to reiterate these orders in respect to public enterprises.
3. Secretary, Department of Financial Services with a request to reiterate these orders in respect to public sector financial institutions.
4. Chief Secretaries/ Administrators of Union Territories/ National Capital Territory of Delhi.
5. CEO/ GeM with a request to ensure implementation of this order on GeM.

WTO UPDATE : A MIX OF TRADE POLICY APPROACHES IS NEEDED TO ACHIEVE SUSTAINABILITY GOALS

DDG PAUGAM

Speaking at the Asia-Pacific Economic Cooperation (APEC) forum working group on marine debris on 20 February, Deputy Director-General Jean-Marie Paugam said the APEC "soft law" approach of setting out a collective direction and relying on individual implementation could provide inspiration for the WTO in mobilising trade policy for environmental sustainability objectives. DDG Paugam's remarks are below.

In 1994, two major trade events took place: one was the Marrakech declaration which gave birth to the WTO, the other one was the Bogor declaration which set APEC in motion. Of course the two models of international trade cooperation initially looked perfectly opposite:

- The WTO was promoting a model of hard-law through enforceable multilateral or plurilateral agreements aiming at balancing trade concessions from participants.
- The APEC had chosen a soft-law model, based on non-binding agreement on collective objectives and individual implementing measures.

Ladies and Gentlemen, I believe that times have greatly changed since then.

My key message today is that the APEC and the WTO models of trade cooperation have been converging much more than initially expected over the last 30 years; and I also think that the topic of sustainable development holds a great potential for more convergence in the future. This is why it is my privilege to address your working group. I have no doubt that what you are doing here is very relevant to the WTO

There are four reasons why I believe this to be true.

First, let's face it, the classical opposition between soft-law and hard-law, binding or non-binding, has become partially irrelevant. At least, within the WTO we have been observing quite a variable geometry in the way we approach rulemaking.

De facto, the WTO has recognised the notion of non-binding commitments from its Members. For instance, our agreement on Trade Facilitation, if not intrinsically soft law, fully recognises the possibility of "opting in" for some of the proposed commitments. In other areas, such as the SPS or TBT we have been negotiating non-binding guidelines. There are other areas where WTO Members have collectively set some guidance and political objectives but have let them to be implemented through individual government's actions.

So the WTO has moved away from a "one size fits all" model of trade agreements. That is a first element of convergence.

Second, the WTO is increasingly looking at sustainable development goals. This is an area where APEC has clearly been pioneering. APEC was able, before most, to agree on a list of 54 Environmental Goods to facilitate trade in back in 2012.

And it has yielded concrete results, as APEC's exports and imports of those 54 products increased by 5.7 percent and 13.5 percent, respectively, between 2012 and 2019.

Today, the WTO itself has also entered a green moment with very significant new initiatives focusing on sustainable development.

- At our last Ministerial meeting last year we concluded a landmark agreement on reforming subsidies to fisheries: it was about prohibiting subsidies contributing to illegal fishing. Our Members are now ratifying this agreement — Singapore was the second Member of WTO to do so, very recently. Members are now in the second phase which is about reforming subsidies contributing to overfishing and overcapacities. Here for the first time, the WTO has concluded a trade agreement whose main purpose is to contribute to ocean preservation, conforming with SDG goal 14-6.
- At the same Ministerial Meeting, our Members for the first time formally recognised the contribution of the multilateral trading to the fight against climate and other environmental crisis.
- Several WTO Members also co-sponsor three environmental initiatives: the trade and environmental sustainability discussions (supported by 74 Members representing 85% of global trade), the Fossil Fuel Subsidy Reform initiative (supported by 48 Members representing around 40% of global trade), and the Dialogue on Plastics Pollution (75 Members representing 75%

of global plastics trade).

These various approaches can complement each other: for instance, keeping the fish in and taking the plastic out of the ocean are obviously the two sides of a same coin.

Here we have a second element of convergence between our two models.

Third, the APEC model of setting a collective direction and relying on individual implementation could prove innovative and inspiring for the WTO when it comes to mobilising trade policy for sustainability objectives.

There is a very strong rationale for this: when and where trade policy is driven by sustainable development goals, the game is not about exchanging and balancing trade concessions for market access of private goods; what is at stake is the production of global public goods such as the preservation of the oceans, the biodiversity or the climate. Producing public goods is not a zero-sum game but a "win-win" process: every additional effort counts for the common purpose.

This is also the rationale that lies at the heart of the Paris agreement, which sets collective goals and relies on national determined contributions to achieve them. Does this methodology look familiar in an APEC context? Would it be possible to consider in the WTO? Actually we already have two key elements in place for this to happen.

- The first one is that our Members are more and more active in mobilising their trade policy in favour of the environment. We monitor this through the notification of trade measures. Overall, since 2009 the number of environmentally related trade measures has reached 17'000, almost tripling from a pace of 829 annual measures notified in 2009, to 2250 in 2021. This covers all main areas of environmental concerns and all policy tools. So, it is documented that our Members are already acting individually.
- The second element is that our Members have created the fora that make possible the design of collective goals and action. Of course, our Committee on Trade and Environment is one, but also the three environment initiatives that I previously mentioned on trade and environmental sustainability, fossil fuels, plastics.

So, we already have the fora for collective goal setting and the willingness for individual, tailor-made implementation through trade measures. Doesn't it look like we are ready for action?

This will be my fourth point: what is the type of action that our Members are considering today? Let me focus on the example of the plastic initiative.

First, there is the idea of promoting sustainable and affordable alternatives and substitutes to plastic and technologies contributing to the Basel Convention Plastics Wastes Amendment. There is now an emerging list of some key goods and services[1] that could be traded more.

A second area relates to trade action focusing on single-use plastics and other harmful and unnecessary plastics. We can see that single-use plastic products, packaging and harmful plastic wastes[2] are top of mind with our Members. We can see emerging a list of "worst offenders" where our Members are already acting. Concerted action on this, including best practices, guidelines and harmonisation could make a concrete contribution. Another policy commitment that would make sense is to restrict/regulate the export of those goods also restricted/regulated in the domestic market.

Third, our Members are building up into a Catalogue of trade-related plastic measures, including regulatory requirements, price and market-based mechanisms and support policies used by Members to address plastic pollution. This would allow Members to fuel domestic trade action plans to help address plastic pollution and potentially pledge to do so at MC13 following clear timelines

Ladies and Gentlemen, my hope is that the work that you are leading here within APEC can again show how trade can deliver meaningful results for sustainability. You can inspire, the efforts that we have started within the WTO. As you have clearly got from my messages, I see no reason for opposing different sorts of trade policy approaches when it comes to promoting public goods and a sustainable economy. Bogor and Marrakech together for the environment! That is my call today.

I thank you for your attention.

Notes

1. Including: those required for re-use and circular business models (services) and natural fibres and other material alternatives and substitutes (such as hemp, jute, Banana/plantain leaf, coconut husk, bamboo, aluminium, algae and paper). UNCTAD estimates that trade in many of these goods already amount to 388 billion USD in 2020 Back to text
2. Among single-use, the main products targeted are]: plastic bags; tableware; food container; cups; and plastic straws

Source: WTO Website

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GLOBAL ECONOMY 2023: COVID-19 TURNED GLOBAL SUPPLY CHAINS UPSIDE DOWN – 3 WAYS THE PANDEMIC FORCED COMPANIES TO RETHINK AND TRANSFORM HOW THEY SOURCE THEIR PRODUCTS

STEVEN VASS, BUSINESS + ECONOMY EDITOR

The global supply chains that modern companies depend on were turned upside down three years ago after COVID-19 emerged in China. The spread of the new respiratory illness and efforts to slow it resulted in shortages of everything from toilet paper and prescription drugs to refrigerators and semiconductors. Even today, retailers continue to struggle to keep some products, including household items like Tylenol and eggs, in stock. Overall stress in supply chains remains high. Because shortages, delays and bottlenecks can hurt their bottom line, many companies that didn't go bust during the pandemic have been rethinking their supply chains and implementing changes to make them more resilient. As a supply chain expert, I have observed three major shifts in how companies manage their supply chains – changes that will significantly affect consumers and businesses alike.

1. Bringing supply chains home : One of the main downsides of having supply chains that span the globe is that they are more vulnerable to problems outside of a company's control, such as an earthquake that strikes a key supplier or a citywide lockdown that shuts down factories.

That's why companies in every industry have been working to relocate suppliers and production facilities closer to home or geographically spreading them out so that they're not so dependent on one country or region. The goal is to ensure they can withstand disruptions and maintain business continuity. The pace of reshoring – the process of shifting production and manufacturing to domestic locations from overseas factories – has surged in recent years. Over 60% of European and U.S. manufacturing companies expect to reshore part of their Asia production in the next three years, according to a survey conducted in early 2022.

A more recent survey found that U.S. transport and manufacturing reshored about 350,000 jobs in 2022, up 25% from the previous year. This trend not only has support from government subsidies but retailers as well. Walmart, one of the world's biggest retailers, has committed to help its suppliers reshore by increasing its purchases of U.S.-made products by US$350 billion over the next decade. In the U.K., a survey of 750 small businesses found that 2 in 5 are considering switching to domestic manufacturers to avoid COVID-19 disruptions and high shipping costs.

At the same time, other companies are trying to diversify their sources of supply, often away from China, which until recently was regularly locking down whole cities to maintain its now-lapsed zero COVID-19 policy. India and Vietnam are popular destinations. U.S.-based Apple, for example, frustrated by product delays in China, where 98% of its iPhones are made, recently started producing models in India. In addition, Foxconn, its largest supplier, agreed to expand production in Vietnam. Overall, U.S. manufacturing orders from China are down 21% since August 2022. In Europe, carmaker Volvo announced in July plans to open its first European factory in 60 years in Slovakia. And leaders of the U.S., Mexico and Canada are meeting to discuss ways to encourage more investment in the region, which may result in more reshoring.

2. Investing in more technology: One of the biggest issues when the COVID-19 pandemic began was that companies often didn't know what was going on with their suppliers because of poor technology. For example, prior to the pandemic, over 50% of companies didn't communicate with or know the locations of all their suppliers, making it difficult to anticipate shortages. Companies have since learned, if they didn't already know, that being able to see what is happening along their supply chains is critical to avoiding and adapting to disruptions. And modern digital technologies are key to making this happen.

This includes everything from state-of-the-art software to better communicate with suppliers to cloud computing for efficient data storage, artificial intelligence tools to make better decisions and robotics for automating processes. Implementing these new technologies is the biggest global corporate priority for 2022, according to strategic consultancy the Hackett Group.

3. From 'just-in-time' to 'just-in-case' : One of the great supply chain advancements in recent decades is a Japanese management philosophy known as "just-in-time." While the essence of the philosophy is eliminating waste, businesses reduced just-in-time to the idea of having low or even zero inventory. That meant carrying as little stuff in warehouses as possible to minimize storage costs, maximize efficiencies and yield higher profits. As long as there were no disruptions, the system worked.

However, just-in-time made businesses vulnerable to even small disruptions. Companies' super-lean supply chains meant the disruptions caused by the pandemic – and pretty much anything else – were amplified considerably, making even a hiccup potentially cascade into a major problem. Companies now fearful of shortages are moving toward carrying more inventory. Since the pandemic began, many have been shifting from just-in-time to a "just in case" model. While having more inventory will make it less likely companies will experience shortages, it's also more costly because it can lead to a lot of excess stock and products becoming obsolete before they're sold.

But this trend, like the others, is unlikely to change anytime soon despite the elevated costs they'll incur. That is, companies learned that the cost of empty shelves was higher than the cost of some inefficiency. In most cases, these costs will be passed on to consumers in terms of higher prices – which may be bad news for consumers tired of inflation.

Source: theconversation.com

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ALLEVIATING SUPPLY CHAIN CRISIS THROUGH CROSS-BORDER TRAINS

China's cross-border trains under the Belt and Road Initiative (BRI) have remained resilient and have become a leading option for many international traders, given its competitive advantage, especially as sea transport keeps experiencing congestion and container shortage at many major ports.

The Russia-Ukraine conflict and the COVID-19 resurgence in China have created various unprecedented challenges for cross-border trade. But rail freight service from China to Europe and other countries have been a saviour, protecting from the potential risks of disruption in supply chains. The main benefits include speed and cost as rail freight transport is faster than sea freight, and more cost-effective than air freight.

China-Europe Railway

China-Europe railway routes have become an important means of trade between China and Europe. The China-Europe freight train service is 13,000-kilometre cross-continental transport line linking China and Europe and is playing a strong role in stabilizing the global supply chain while driving their economy towards growth. Russia's war with Ukraine is regarded as the bottleneck in the growth. To avoid transporting goods via Russia, a new southern route has been opened across the Caspian Sea and the Black Sea allowing entry to Europe via Romania, although capacity on this slower route is limited. However, there has been barely any disruption to the train service even with the heightened geopolitical tensions in Europe.

From 2016 to 2021, the annual number of China-Europe freight trains increased from 1,702 to 15,183, with an average annual growth rate of 55 per cent while the annual value of goods transported rose from $8 billion to $74.9 billion. Moreover, the rail service's share of total trade between China and Europe rose to 8 per cent in 2021 from 1.5 per cent in 2020, helping their supply chain stability. From January to June 2022 a total of 7,473 freight trains operated between China and Europe, carrying a total of 720,000 TEU. Compared with 2021, these figures were up 2 per cent in number of trains and 2.6 per cent by volume.

The Shanghai Cooperation Organization Local Economic and Trade Cooperation Demonstration Area (SCODA) in the eastern Chinese coastal city of Qingdao saw a much busier China- Europe freight train service in the first half of 2022. The demonstration area handled 430 outbound and inbound China-Europe freight trains in the period, up 44.8 per cent YoY. The inbound trains carried 17,000 containers while the outbound trains sent 18,000 containers in the first six months of 2022.

In July 2022, Fuzhou, the capital of east China's Fujian Province, launched its first China-Europe 9,900-km-long freight train. The train named 'Mindu' departed from Jiangyin Port in Fuzhou with Moscow as its destination. The train was loaded with 455 tonnes of goods valued at $1.8 million. The train is expected to take 16 days to reach its destination, i.e., nearly 20 days less than if they were shipped by sea. During the same month, another new China-Europe freight train departed from Chongqing to reach Melzo in Italy, carrying goods worth $10 million including daily necessities, clothing, household appliances, and machinery equipment. The entire trip is estimated to take about 22 days.

Two more China-Europe freights rail services started in July from Jinhua in East China's Zhejiang province to reach Venlo in the Netherlands and from the Shijiazhuang International Dry Port in Hebei to reach the BILK intermodal terminal in Budapest, with an estimated transit time of 22 days and 18 days respectively. The service is expected to boost the textile-apparel trade between China and the two European countries.

The China-Netherlands train's departure marked the launch of the first China-Europe freight train from Zhejiang to the Netherlands as well as the departure of the 400th China-Europe freight train managed by Jinhua in 2022. The China- Hungary train will transit through Mongolia after passing the Erenhot border crossing and then travel via Russia, Belarus, Poland, and the Czech Republic, all the way to Budapest along the main line of the China-Europe train.

China's Jinhua and Shijiazhuang ports have been busiest since the start of this year. Jinhua had 368 inbound and outbound China-Europe freight trains, which transported 30,368 containers of goods, in the first half of this year, an increase of 8 per cent YoY, while Shijiazhuang operated 186 international trains, an increase of 125 per cent YoY, with transport routes diverging to more than 40 countries and regions such as the European Union, Central Asia, and ASEAN. Additionally, Shijiazhuang port has been following the ' Shi Europe' model, i.e., the model of gathering goods from the surrounding regions and cities in Shijiazhuang and then sending abroad collectively. This has proved to be very efficient since the recently launched Hebei-Hungary service is one of the many running under this concept.

China-Kyrgyzstan-Uzbekistan Railway

After 20 years of negotiations, the construction of the China-Kyrgyzstan- Uzbekistan (CKU) railway is expected to start in 2023. Amidst the Russia-Ukraine crisis, the CKU railway offers several economic prospects for China. Since the war started, businesses have decided to stop shipping goods via Russia. The CKU railway will give China the chance to diversify its trade routes, reduce its dependency on Russian routes, and maintain viable commerce with EU countries in the long term. The CKU will act as a path to the EU via Iran and Turkey, with a total length of 523 km including 213 km in China, 260 km in Kyrgyzstan, and about 50 km in Uzbekistan.

The CKU rail route will not only reduce China's dependency on Russia but also decrease its dependence on Kazakhstan as a transit country. The recent violent unrest in Kazakhstan showed that reliance on any one country for trade in Central Asia for railway trade may be risky. In this context, the CKU railway can help China diversify its rail routes and switch cargoes from one route to another during future crises. In addition, the new railway will also contribute to Kyrgyzstan's and Uzbekistan's economies by reducing the cost of transport and generating employment.

The CKU railway also will generate economic opportunities for China. Through this new route, Beijing will be able to send its goods to both the Middle East and European markets. The CKU railway will be one of the shortest routes to send cargo to both regions as it will shorten the freight journey by 900 km while saving seven or eight days in shipping time. Along with the Middle Corridor, the CKU railway can help increase the cargo capacity of Central Asian countries through East-West trade. It will help improve the overall economic situation in the central and western regions, which can reduce the risk of social instability. In addition, the CKU railway project will revive the 'Middle Corridor' potential to Europe, which was earlier considered costly compared to the land route via Russian territory. The other component of the 'Middle Corridor' is Baku-Tbilisi-Kars (BTK) railway, which is another route that will heavily rely on Chinese suppliers to ship their cargo to Europe.

China-Asean Railway

China has been trying to raise bilateral trade with the Association of Southeast Asian Nations, or ASEAN, and has been building several railway lines under BRI that would link ASEAN's railway network by opening wider opportunities for trade. The China- Laos Railway has facilitated the full flow of goods, services, and factors of production at both the domestic and international levels. Since the Regional Comprehensive Economic Partnership (RCEP) agreement took effect in January 2022, the destinations of international freight via the China-Laos Railway have been expanded to more countries and regions, including Thailand, Malaysia, and Cambodia.

The railway has become a convenient logistics channel between China and ASEAN. Through the railway, China has so far imported about 120,000 tons of goods with a value of more than 500 million yuan and exported over 70,000 tons of goods with a value of over 1.7 billion yuan, according to China's Custom. In the first half of 2022, 379,000 TEUs of cargo have been sent by the land-sea freight trains of the New International Land-Sea Trade Corridor, up 33.4 per cent YoY. The number of trains operating within the sea-rail intermodal service of the New International Land-Sea Trade Corridor had surged from 178 in 2017 to 6,117 in 2021. It has given a big push to railway transport that has previously been underutilised in ASEAN while mending supply chain disruptions.

The China-Laos railway, which opened in December 2021, has been operating successfully for more than six months now. The rail freight line has improved the flow of goods between China and Laos, as well as among members of the ASEAN. The 1,035-kilometre line runs between Kunming, the capital of Southwest China's Yunnan province, and Laos' capital Vientiane. The trip takes about 10 hours, with speeds reaching up to 200 km per hour.

In July, a new freight transit yard was developed at the Vientiane South Station on the China-Laos Railway, with the first railway containers heading to Thailand's Laem Chabang port. This new transit yard reduces lead time by saving one day while delivering goods between China's Kunming City and Thailand's Laem Chabang Port, thereby reducing 20 per cent of transport costs. The facility will enable goods along the railway to reach northward to connect the China-Euro railway and southward to the port of Laem Chabang, further boosting trade between China and ASEAN countries. This freight transit yard of the China-Laos Railway is expected to work to improve the efficiency of freight transport between China and ASEAN, providing reliable transport support for the China- Laos Economic Corridor.

The World Bank estimated that the railway could potentially increase aggregate income in the land-locked country by up to 21 per cent over the long term, and Laos' link to the broader BRI network could increase its GDP by up to 21 per cent as well.1 By 2030, the freight rail is expected to move up to 2.4 million tonnes of freight each year between China and Thailand, Malaysia, and Singapore. Moreover, the total transit trade by rail between China and ASEAN would account for more than half of the region's railway traffic and reach 3.9 million tonnes of freight by 2030.

The rising trade is often attributed to the implementation of the RCEP, which is also providing a more integrated regional supply chain and has triggered the growth potential of cross-border trains. Moreover, the rising air and ocean freight shipping charges have also been pushing more companies towards rail transport.

The number of cargo cross-border trains between China and Vietnam has tripled since the beginning of 2022. The Pingxiang railway port saw $972 million worth of goods in the first quarter, a 240 per cent YoY increase. China also has launched several new freight routes from Chongqing and Chengdu provinces, empowering Vietnam and ASEAN exporters to establish new trade prospects with Western China. These routes will reduce the transportation time from an average of 20 days to between five and seven days.

Chengdu has also opened a road-rail transport link through Myanmar – and provides trade routes to the Indian Ocean. The route is the most convenient land and sea channel linking Southwest China and the Indian Ocean and provides an alternative to China's fear of maritime blockage at the Straits of Malacca (a narrow stretch of water, 580 miles in length, between the Malay Peninsula and the Indonesian island of Sumatra).

Chinese customs data showed that trade via train between China and ASEAN expanded 3.5 times in the first quarter of this year. China's trade with ASEAN totalled over 1.35 trillion yuan in the first quarter of 2022, an increase of 8.4 per cent YoY, as ASEAN continues to be China's largest trading partner. According to S&P Global, the manufacturing purchasing managers' index of ASEAN members was 52.0 in June 2022, signalling the solid health of the manufacturing sector with firms experiencing a higher volume of new orders.2

China and Thailand have recently pledged to finish a long-delayed high-speed rail line linking Thailand to China through Laos by 2028. The 609-kilometre railway line from the capital Bangkok to the Lao border at Nong Khai has only been completed 5 per cent till now. Nong Khai is just across the Mekong River from the Lao capital of Vientiane, where a high-speed train to the Laos-China border started service in December 2021. With trains running at a maximum speed of 250 km/h, the new line will reduce the time the Bangkok-Nong Khai journey takes now on existing standard-gauge tracks. This project is part of China's long-term plans to link its Yunnan province to the ports of Singapore via high-speed trains cutting through Laos, Thailand, and Malaysia.

The Jakarta-Bandung high-speed railway project, with a design speed of 350 km/hr, is a $6 billion railway line that aims to connect the Indonesian capital city to the textile hub of Bandung, reducing travel time from more than three hours to only 40 minutes. China was selected by Indonesia over Japan to build Indonesia's first fast-train rail link due to China's superior financial structure. The project is being developed by PT Kereta Cepat Indonesia China (KCIC) (60 per cent) and China Railway International (40 per cent). Although construction began in 2016, there have been extensive delays due to the pandemic. In April 2022, KCIC announced that the project was 82 per cent completed with plans to be operational by June 2023.

Impact On the Textiles And Apparel Industry

China's textile and clothing sectors have been benefitting quite well from China's BRI, with its provinces and transport hubs linking to global supply chains and improving the existing ones. China's rail development under BRI is providing textile and apparel manufacturers with both opportunities and challenges in optimising and restructuring the networks of their production facilities.

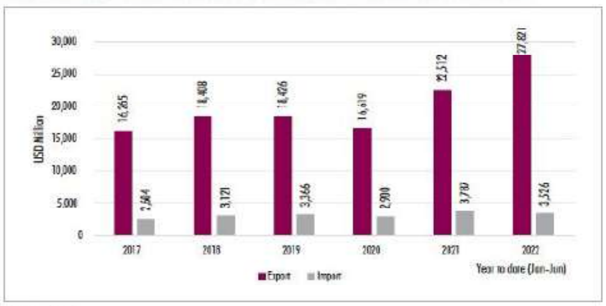
In the past 5 years, China's textiles and apparel exports expanded by 18.68 per cent and reached $305 billion in 2021. China has been the world's largest producer and exporter of textiles and clothing for a long time with the country being the largest producer of cotton in the world. China's low labour costs have acted as a catalyst in keeping it at a high position in world trade. Although China has recently started losing its labour cost advantage, it still successfully upholds its leading position in the industry by maintaining its competitive advantage in labour-intensive textile products with the relocation of the textile and apparel manufacturing from China to ASEAN countries and establishing new factories along the Belt and Road. The key objective is to "Collaborate for Success" and provide a situation where everyone can make a profit.

China's textile makers are more than ready for bigger orders, especially from Southeast Asian nations, since the RCEP deal officially took effect in January 2022. In the first half of 2022, China exported textile and apparel worth some $155 billion, mainly to the US and the ASEAN. According to the data given by China's Customs, the textiles and apparel exports to ASEAN increased over 23.5 per cent YoY in January-June 2022, and exported $27.82 billion worth of textile and apparel, compared to exports of $22.51 billion during the same period of 2021.

China's rail freight line is not limited to Europe and ASEAN but has expanded to Africa too. Ethiopia has witnessed the strongest growth through the construction of the Addis Ababa-Djibouti Railway by China under BRI.

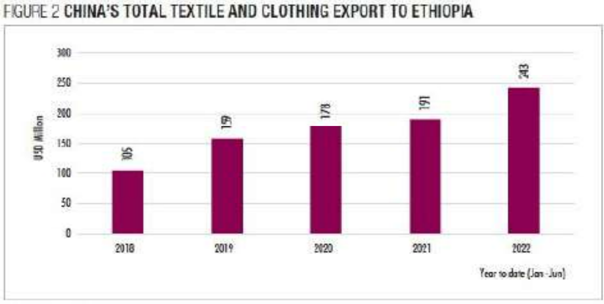
According to the data given by China's Customs, the textiles and apparel exports to Ethiopia increased by 27.2 per cent YoY to $243 million in January-June 2022, compared to exports of $191 million during the same period of 2021. Previously, transportation between Ethiopia and Djibouti took more than seven days but now it only takes ten hours to complete the journey. Djibouti is part of the Maritime Silk Road, thereby offering connections to the ports in Guangzhou. In addition, the Mekelle Dry Port, Tigray, which is at the planning stage will improve logistics offerings further on the rail link.

FIGURE 1 **CHINA'S TOTAL TEXTILE AND CLOTHING EXPORT TO ASEAN COUNTRIES**



Source: TexPro

FIGURE 2 **CHINA'S TOTAL TEXTILE AND CLOTHING EXPORT TO ETHIOPIA**



Source: TexPro

Impact On E-Commerce

Several physical stores closed in 2021 due to the pandemic and people started spending more on e-commerce. In response, retailers have sought to diversify their means of transport due to increased demand and numerous supply chain constraints. China is a significant part of the global e-commerce market due to the manufacturing nature of its economy and the size of the market while European countries are also among the leaders in e-commerce penetration due to their quality characteristics. According to the UNCTAD B2C E-commerce Index, EU countries are the leaders in the number of online buyers. On average, 70 to 80 per cent of internet consumers in the EU make online purchases. Thus, when considering the cross-border online shopping sector, it is trade between China and the EU that is one of the most promising areas for growth.

E-commerce tends towards faster ways of delivering goods, which at the same time are ready to offer a fairly competitive price, i.e., road transport and rail. In the current situation, retailers have found China-Europe freight trains as a cheap and efficient source of freight. Traditionally, e-commerce supply chains relied mostly on maritime or air shipping to transport products in bulk to destination countries where local express providers took final responsibility for the delivery of products to the end customer. From January to May 2022, Chongqing's cross-border e-commerce imports and exports grew by 88.9 per cent YoY to 19.79 billion yuan. In 2021, Chongqing's cross-border e-commerce imports and exports reached 32.21 billion yuan, up 63.3 per cent YoY.

This shift is credited to digital advances in e-commerce, which has increased competition among companies, especially in fast fashion. For instance, Shein, one of China's leading fast-fashion e-commerce retailers, uses customer data to decide on the production of a huge range of trendy apparel at extremely low-price points and in small volumes. These items are then marketed and sold to a particular set of consumers around the globe via online platforms. While its manufacturing base is in China, Shein's core markets are the United States, Europe, Australia, and the Middle East. In such a scenario, companies find trains as an economical, reliable, and fast mode of transport.

Conclusion

The increasing costs of air and sea cargo shipping have rejuvenated interest in freight rail, which has helped alleviate the global supply chain crisis amid the COVID-19 pandemic. However, due to the focus on road transport for the past decades and consequent under-investment in rail, ASEAN countries would need to exert extra efforts to take advantage of emerging opportunities in rail transport. An efficient combination of modes of transport will keep overall transport costs low, reduce delivery delays, and sustain established logistics standards. Modern railway infrastructure linking global supply chains could open new trade opportunities, create new jobs, and accelerate the overall growth of the economies. However, this would require policymakers to implement restructuring in the business and trade environment and facilitate well-targeted complementary infrastructure investments.

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Source: Fibre2Fashion

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EXPIRED E-WAY BILL UNDER GST-PROVISIONS AND CASE LAWS

PARVEEN KUMAR MAHAJAN

Article contains provision about validity period of e-way bill under CGST Act, 2017 and judgements of various high courts given on expired e-way bill.

The e-way bill document shall be generated subject to exceptional provisions if the goods value exceeding Rs.50000.00 are to be moved from one state to other state or union territory in relation to a supply; or for reasons other than supply; or due to inward supply from an unregistered person.

The e-way bill shall be valid for the period as mentioned in sub-rule 10 of rule 138 of the CGST Rules. The following table has been provided under the said rule to state the validity period with detailed explanations.

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Validity period of E-Way BIll

Sl. No.	Distance	Validity period
(1)	(2)	(3)
1.	Upto 200 km.	One day in cases other than Over Dimensional Cargo or multimodal shipment in which at least one leg involves transport by ship
2.	For every 200 km. or part thereof	One additional day in cases other than Over Dimensional Cargo 7 or thereafter multimodal shipment in which at least one leg involves transport by ship
3.	Upto 20 km,	One day in case of Over Dimensional Cargo 7or multimodal shipment i which at least one leg involves transport by ship
4.	For every 20 km. or part there of there after	One additional day in case of Over Dimensional Cargo or multimodal shipment in which at least one leg involves transport by ship

Provisions for extending the Validity Period of E-Way Bill

1. The GST Council may extend validity period for certain categories of goods.
2. Where, under circumstances of an exceptional nature, including trans-shipment, the goods cannot be transported within the validity period of the e-way bill, the transporter may extend the validity period after updating the details in Part B of FORM GST EWB-01.
3. The validity of the e-way bill may be extended within eight hours from the time of its expiry.

Calculation of each day for Validity Period of E-Way Bill

Each day shall be counted as the period expiring at midnight of the day immediately following the date of generation of e-way bill.

Consequences if vehicle supplying the goods not reached within validity period of E-Way Bill

There is no specific provision so for that what action is to be taken under the GST law if the vehicle is not reached to the destination within valid period. Generally, the GST Authorities, in such cases where valid period of e-way bill had expired, take action under section 129 of the CGST Act. They pass the order of detention and penalize accordingly. But in number of cases the High Courts allow writ and set aside/quashed the orders which were passed casually and without making the case of evasion of tax or abetment of evasion.

High Court Cases on Expired E-Way Bill under GST

E-way bill expired by 41 minutes – Citation – 2023-VIL-72-CAL – KARAN SINGH Vs STATE OF WEST BENGAL & ORS. – Date of Order – 31-01-2023 – The Hon'ble court set aside the detention order on the ground that the adjudicating authority failed to communicate to the transporter about his right to extend the period.

No ill intent on the part of the petitioner – Citation – 2023-VIL-66-GUJ – ORSON HOLDINGS COMPANY LIMITED & 1 OTHERS Vs UNION OF INDIA & 2 OTHERS –Date of Order – 18-01-2023 – The Hon'ble Court quashed and set aside the order of detention and notice issued on the grounds that there does not appear to be any ill-intent on the part of the petitioner to use the expired e-Way bill. It appeared to be bona fide and without establishing any fraudulent intention.

Absent evasion, there can be no revenue loss – Citation – 2022-VIL-825-MAD – TVL. THIRUVANNAMALAIYAR TRANSPORT Vs THE DEPUTY STATE TAX OFFICER – Date of Order – 13-12-2022 – The Hon'ble Court held that the expiry of E-way bill does not create any scope for evasion. Absent evasion, there can be no revenue loss. Order passed on the basis of example given in para 10 of the circular No.10/2019, Q1/17253/2019 dated 31-05-2019.

Example 2: A conveyance carrying the goods from a factory of fertilizers is delivering the same at various locations as directed by the department of Agriculture. The goods are accompanied by invoice or invoice with delivery challan and E-way bill. The E-way bill has expired due to delay in making delivery at various locations. The expiry of E-way bill does not create any scope for evasion. In cases as in the examples, penalty of upto Rs.5000/- per Act shall be levied.

No fraudulent intent or negligence on the part of the petitioner – Citation – 2022-VIL-813-GUJ – SHREE GOVIND ALLOYS PVT LTD Vs STATE OF GUJARAT – Date of Order – 01-12-2022 **–** The only ground to quash the orders is that the respondent could not establish any element of evasion of tax with fraudulent intent or negligence on the part of the petitioner.

Time period of e-way bill was short due to wrong mentioned pin code – M/s SHANU EVENTS Vs STATE OF U P – Date of Order – 05-08-2022 – WRIT TAX No. 258 of 2022 – The pin code was inadvertently stated of the state of the supplier in place of state of the recipient. Therefore, validity period on the e-way bill was mentioned for one day only. Held – The mistake was inadvertent and bona fide as sometime occurs. In absence of any allegation or material found of ill-intent on part of the assessee to transport the goods for the purposes of sale, the imposition of tax and demand of penalty is wholly unfounded.

No case of deliberate and willful attempt on the part of the writ petitioner to evade payment of tax – M/s HANUMAN GANGA HYDROPROJECTS PRIVATE LIMITED Vs JOINT COMMISSIONER – Date of Order –

06-07-2022 – WPA 1480 of 2022 – Held – In order to justify invocation of the power to impose penalty in terms of the said Act, it is necessary that such authority arrives at a definite finding that there was a deliberate and willful attempt on the part of the assessee to evade tax or there is lack of bona fide.

Penalty imposed without due consideration of the plea raised by the petitioner and without proper application of mind – RIVIGO SERVICES PRIVATE LIMITED Vs THE STATE OF JHARKHAND – Date

of Order – 13-06-2022 – W.P.(T) No. 4654 of 2019 – The case of the petitioner is that the vehicle reached ITC Limited warehouse at Jamshedpur within the validity period of E-Way bill but due to temporary shortage of space the vehicle could not be unloaded. The impugned consignment was taken back to warehouse of the petitioner /transporter. Later on, upon availability of space at the ITC warehouse the driver was informed to park the vehicle – while vehicle was in transit from transporter's facility to the warehouse of ITC Limited, it was intercepted and detained on the allegation that E-way bill has expired.

The petitioner has referred to GPS tracking report for the vehicle. These tracking reports confirm the plea raised by the petitioner that the consignment had reached ITC warehouse at Asanbani, Jamshedpur before expiry of e- way bill and on account of paucity of space for the next seven days, it was standing at one location i.e., the warehouse of the petitioner /transporter at Bhilaipahari. This fact has not been verified by the State Tax Officer or by the Appellate Authority, which has vitiated the impugned orders on facts.

The impugned action has entailed penalty without due consideration of the plea raised by the petitioner and without proper application of mind. As such, both the orders passed by the State Tax Officer and the appellate order are set aside.

Goods reached at destination in-time but goods unloaded after expiry of the E-Way Bill – Citation – 2021-VIL-758-KAR – State Vs M/s HEMANTH MOTORS – Date of Order – 27-07-2021 – Held – On the plea of the GST Authority that the consignment was being delivered on next day and therefore, the goods cannot be transported within valid e-way bill the court held that the action by the authorities was taken at the destination and not during transit and therefore, as inference has to be drawn that the conveyance had reached the destination well within the subsistence of the valid period stipulated under the E-way bill.

Conclusion

Thus, mere expiry of e-way bill can not become the ground of taking action under the law until and unless there is case of evasion of tax, case of ill intent of the supplier and case of non-bona fide etc.

Source: Taxguru

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MSMES AND THEIR USAGE OF E-COMMERCE FOR OPERATIONAL EFFICIENCY

SONARIKA MAHAJAN, FOUNDER, HUMANITIVE

The Micro, Small, and Medium Enterprises (MSMEs) sector contributes significantly to India's GDP and employs millions of people nationwide. The Covid pandemic caused MSMEs to see the value of digitizing and to step up their efforts to do so. Despite this, MSMEs are not entirely content because it is still unclear why digitalization has become so important to the future. E-commerce buying has grown from a necessity during the shutdown in India two years ago to popular practice. And this trend is here to stay!

Challenges Faced By The Industry : MSMEs nowadays face a variety of difficulties that keep the industry from reaching its full potential. These difficulties include a lack of trained labor, outdated technology, poor market access, difficulty obtaining raw materials, excessive financing costs, supply chain bottlenecks, a low level of consumer spending desire, and many others. Beyond this, the start of the pandemic has also harmed the industry.

While the government has been striving to revive the industry, MSMEs must embrace digital solutions to overcome some of these obstacles and hasten the pandemic's recovery. To improve operational efficiency and hasten their growth, small firms must turn to digital solutions like e-commerce and e-procurement. MSMEs may benefit from e-commerce by embracing it. These benefits include greater revenues and margins, expanded market reach, access to new markets, reduced marketing expenses, easier client acquisition, and improved customer experiences.

How Can E-commerce Help The Industry : MSMEs are converting to digital ways to sell online as a result of the difficulties posed by traditional techniques. And during the previous five years, overall sales have increased dramatically. E-commerce is a route that allows the smallest MSMEs to increase their client base to a global level without expanding geographically, and it may help MSMEs achieve economic stability, growth, and security.

Online sales by the MSMEs evaluated by ICRIER, a government-based research body, will represent 27 percent of all sales in 2020–21. This percentage has climbed from 19 percent in 2019–20 and 12 percent in 2018–19. The increase in digital commerce can be ascribed to internet shoppers' altered purchasing patterns during the pandemic. Additionally, the government has actively pursued legislation in recent years to assist MSMEs in going digital.

India's e-commerce industry has seen significant growth as a result of the country's widespread use of cell phones, the internet, and online experiences. Customers' realization that online shopping is the safest way to acquire anything delivered right to their door has fueled the sector's expansion even further. To support this expansion, it's also necessary to comprehend the specific e-procurement needs of MSMEs and provide easy access to the market. Creating a commercial store with thousands of items from top categories including business laptops, networking equipment, industrial adhesives, tools and equipment, and safety and security across top brands is one such efficient approach.

There is also a chance to start programs like 'Bill to Ship to' to address MSMEs' other industrial demands. Company PAN. It is now easier to do business thanks to features like multi-user accounts, approvals, expenditure analytics, secure and dependable delivery, etc. that let customers claim GST credit on their billing address. In addition to removing geographical obstacles and offering a sizable client base, large-scale e-commerce firms are empowering small businesses by giving them the chance to interact directly with producers and suppliers, which lowers the cost of procurement. The small company owners are greatly assisted in scaling up their operations at a far lower level of investment because of the greater access to suppliers, which also helps to raise their cost structure.

MSMEs currently account for the second-largest source of employment in India. Additionally, there are more options now that e-commerce has become more widespread. E-commerce has increased MSMEs' total employment rates in India.

Online B2B Marketplace : In recent years, MSMEs' e-procurement demands have increased. In order to serve as a one-stop shop for small company owners, online B2B wholesale marketplaces must offer GST-enabled, technology-led solutions for all types of enterprises in India's most distant pin codes at wholesale costs. These platforms must not only offer direct access to the supplier but also access to value-added services that will help businesses cut down on paperwork, increase compliance with procurement requirements, and decrease mistakes.

Players are now more needed than ever to deliver greater insights and forecast whether or not various suppliers' items will meet a buyer's wants. Organizations need to take advantage of the chance to assist B2B companies in meeting the needs of thousands of business clients in order to increase their income.

What Does The Future Hold?

For most MSMEs in India, e-commerce has been an opportunity rather than a hindrance. And in the upcoming years, this tendency is predicted to accelerate. How can you follow the trend, and what will you need to expand, are the main questions.

The best method to stand out from the competition and keep consumers is to have an online store. By creating a strong brand for themselves, key companies need to differentiate themselves from the growing number of emergent e-commerce enterprises.

In India, the MSME sector has the potential to develop more quickly because of e-commerce's ability to cut costs and provide businesses unprecedented access to a global market. MSMEs may harness the enormous power of the internet and realize its full potential thanks to government efforts like Skill India, Digital India, and Startup India, as well as private initiatives like MSME Accelerate.

Source: www.indianretailer.com

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ULTIMATE GUIDE TO TECHNOLOGIES THAT ARE TRANSFORMING SUPPLY CHAINS

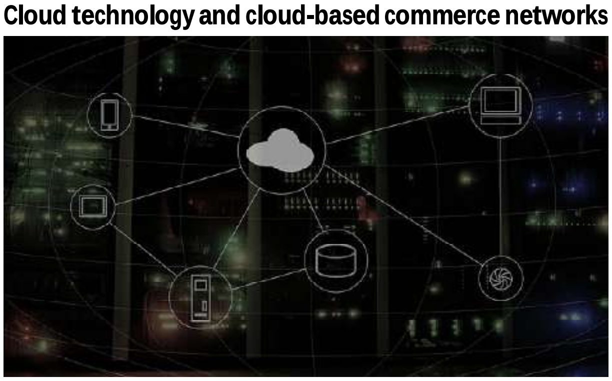
Technology can have a significant impact on supply chains, but supply chain digitization still lags behind digitization of other areas of business across many industries. According to research from McKinsey & Company, the supply chain dimension has the lowest level of digitization (43%) compared to other dimensions, including products and services, marketing and distribution channels, business processes, and new entrants at the ecosystem level. Still, there are several technologies that are transforming supply chains for the organizations that adopt them.

Technology advancements and adoption are driven by better data availability and a push for better visibility, efficiency and accuracy. The right technology solutions allow supply chain operations to make data-driven decisions and provide a competitive advantage, particularly if an organization's competitors are slow to adopt the latest technology advancements.

Let's take a look at the technologies that are making the biggest impact on supply chains around the world:

- Cloud technology and cloud-based commerce networks
- Internet of Things
- Artificial Intelligence & Machine Learning
- Advanced and predictive analytics
- Digital supply chain twins
- Weighing and shipping technologies
- Robotics, driverless vehicles and drones
- 3D printing
- Blockchain
- Additional resources on supply chain technologies

Cloud technology and cloud-based commerce networks



The biggest benefit of cloud technology and cloud-based commerce networks is that they allow organizations to leverage large pools of IT resources without the need to build and maintain data center infrastructure. In the cloud, companies can deploy resources on an as-needed basis, rather than invest in additional servers and storage capacity that they may only need for a short time.

Cloud technology allows organizations to combine all supply chain and logistics information into a single, central solution. Centralized information eliminates data silos and strengthens information sharing through real-time communication (instead of point-to-point data transmission). All entities throughout the supply chain – such as vendors, suppliers, partners, and end consumers – can access relevant, accurate and up-to-date information.

Internet of Things

The Internet of Things (IoT), comprised of physical devices equipped with remote sensors that capture and transmit large amounts of data, is already making a big impact in the supply chain industry. IoT supports operational efficiencies in areas such as asset tracking, inventory management and forecasting, improving productivity and aiding decision-making across the supply chain.

For example, companies can track products throughout the entire lifecycle with RFID and GPS sensors. Manufacturers can gather valuable granular data such as the time an item spent in storage, at what temperature, how long it took to sell, the length of time between purchase and fulfillment and how long it spent in transport. IoT sensors provide real-time visibility into inventory levels, making it possible to identify sales trends and make more accurate projections to plan for future manufacturing or replenishment. Fulfillment operations can use data from IoT trackers to better pinpoint the key indicators that lead to better reliability and efficiency in their services.

Should supply chain delays occur, companies can more easily identify the source of bottlenecks and take action to improve processes. Thanks to the ability to track the location of items in real-time during shipping, companies can deliver excellent customer service by providing customers with accurate delivery estimates and real-time location information.

Artificial Intelligence & Machine Learning

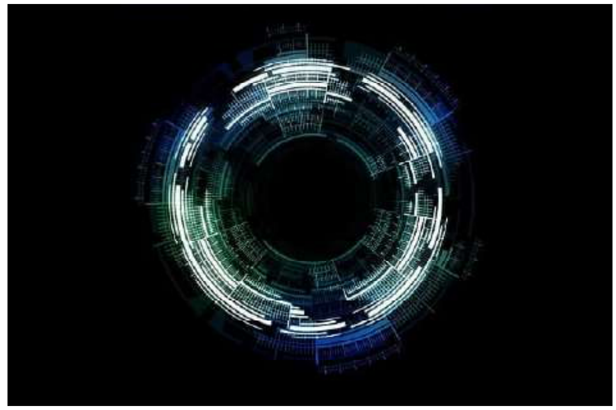
A variety of other technologies, such as robots and advanced warehouse management systems, leverage Artificial Intelligence (AI) and Machine Learning (ML) for data-driven decision-making. According to PricewaterhouseCoopers, AI's potential contribution to the global economy by 2030 is $15.7 trillion. Thanks to AI, companies can automate functions such as demand forecasting, capacity and production planning and predictive maintenance.

For example, AI-driven technologies can analyze weather, real-time sales data and other factors to generate accurate demand forecasts and facilitate logistics plans. DHL developed a tool based on machine learning that analyzes 58 parameters of technical data to predict air transit time delays up to a week in advance. The tool also identifies the top factors impacting shipment delays, such as departure day and the on-time performance of an airline.

DHL's Resilience360 Supply Watch module, part of its cloud-based risk management solution, Resilience360, uses advanced Machine Learning and Natural Language Processing (NLP) to analyze the content and context of 8 million online and social media posts from more than 300,000 sources. By analyzing sentiment from unstructured data from these online conversations, the system identifies risk factors, allowing supply chain managers to take proactive, corrective action to avoid supply chain disruptions.

Robotics enabled with AI and ML augment the work of humans in warehouses and distribution centers. For instance, Chuck by 6 River Systems is a collaborative robot that leverages AI and ML to prioritize work and optimize picking routes in real-time. Collaborative robots like Chuck are programmed to guide users through specific tasks, and they also have built-in quality control measures like barcode readers to help reduce human errors and improve accuracy. Chuck integrates with warehouse management systems (WMS), as well, so it can be used for a variety of warehouse activities such as picking, put-away, counting, replenishment and sorting. Mobile Sort, another solution by 6 River Systems, uses ML to help associates intelligently pick and sort batches into discrete orders. Using images, lights and sensors, Mobile Sort directs associates and validates tasks for better efficiency and accuracy. We'll discuss robotics solutions in more detail later in this guide.

Advanced and predictive analytics



Advanced and predictive analytics are deployed in real- or near-real time. Use cases include dynamic pricing, product quality testing, dynamic replenishment and staffing and resource decisions. Advanced and predictive analytics solutions extrapolate data from IoT, weather patterns and dynamic sales data to help supply chain managers understand future scenarios and make more profitable decisions.

Predictive analytics may sound similar to Machine Learning, but it's actually an application of ML, EDUCBA explains. ML is an AI technique consisting of complex algorithms and models that can be used for prediction. In Machine Learning, algorithms process the data provided without a pre-determined set of rules and regulations. These systems get better with experience, after processing large quantities of data, without the need for explicit programming.

Predictive modeling, or predictive analytics, on the other hand, is a form of analytics that evaluates a set of historical and current data to identify patterns and behaviors, predict the most likely outcomes and estimate the probability of different outcomes based on the data.

According to Supply Chain Dive, based on its analysis of the 2019 MHI Annual Industry Report, 30% of supply chain professionals surveyed say they're currently using predictive analytics at their company. That's an increase from 17% in 2017. Nine out of 10 respondents say they believe predictive analytics will impact the supply chain in the next decade. Just 7% say they're not likely to adopt predictive analytics, a decrease from 11% in 2017. More than half (57%) of those not currently using predictive analytics say they have plans to do so within the next five years.

Predictive analytics has many use cases in the supply chain. Here are just a few examples:

- **Predictive maintenance:** In manufacturing, predictive analytics supports predictive maintenance. Coupled with IoT, parts and sensors transmit data regarding a part's or equipment asset's performance. When data indicates that a part shows signs of failure, manufacturers can ensure that replacement parts are in-stock and plan for repairs to avoid unexpected downtime that may otherwise cause far-reaching supply chain disruption.

- **Route optimization:** Logistics managers leverage predictive analytics to determine the shortest and fastest route to a destination considering factors such as weather conditions, traffic delays and vehicle data such as mileage. By using predictive models to determine the best route with the least risk, logistics companies help to ensure on-time deliveries.

- **Demand forecasting:** Predictive analytics can help warehouses and distribution centers optimize inventory, ensuring that there's enough stock on-hand to meet anticipated demand. Companies can more easily prepare for seasonal fluctuations to avoid stock-outs and lost sales opportunities. By identifying behavior patterns that indicate a shift in consumer habits, companies can even predict upcoming trends and prepare for unexpected demand shifts.

- **Inventory optimization:** Coupled with demand forecasting, predictive analytics enables warehouses and DCs to optimize inventory levels. Predictive analytics helps determine the inventory quantity and safety stock levels needed to meet demand without incurring additional long-term storage costs for excess inventory.

- **Procurement:** Partnering with cost-effective and reliable vendors is vital for keeping a business running smoothly. By using predictive analytics to evaluate vendors on factors such as reliability, cost and quality, companies can make data-driven procurement decisions and implement contingency plans (such as back-up suppliers) to mitigate risk.

Digital supply chain twins

A digital supply chain twin as a digital model of a real-world entity or system. It represents all relationships between every entity in the real-world supply chain from end-to-end, including customers, warehouses and distribution centers, manufacturers, logistics providers, markets, weather and more. Combining the ideas of IoT and modeling, it uses sensors to gather data which feeds the digital supply chain replica.

"Although digital twins vary greatly in their purposes and the amount of data they hold, all follow the same principle," explains Gartner. "There is exactly one twin per thing. The twin is continuously updated to mirror the current state of the physical thing." According to a Gartner report on findings from a survey conducted in July and August 2018, 13% of companies implementing IoT projects currently use digital twins, and 62% are establishing the use of digital twins or reported having plans to do so within 12 months.

Digital twins serve as proxies for their real-world counterparts. Programming a twin to encapsulate data allows analysts and supply chain leaders to make changes to the twin without impacting any connected applications, and likewise, changes to connected applications without affecting the twin. Supply chain leaders can apply prescriptive analytics and AI to a digital twin to enhance situational awareness and support better, faster decision-making – either by augmenting human decision-making or automating the decision-making process entirely. Supply chain leaders use digital twins to:

- Analyze potential fluctuations in demand
- Identify bottlenecks in the supply chain
- Test promotions in different markets or regions
- Identify risks and prescribe solutions such as arranging backup suppliers
- Apply predictive maintenance for vehicle fleets to minimize disruptions
- Simulate the most efficient routes to ensure on-time delivery

Unilever, a consumer goods company, created a pilot digital twin of a factory in Brazil in 2018 and now plans to implement digital twins of 170 global plants by the end of 2020. According to the Wall Street Journal, "The technology lets the Anglo-Dutch company make real-time changes to optimize output, use materials more precisely and help limit waste from product that doesn't meet quality standards." In the pilot program, focused on a facility that makes products ranging from Dove soap to ice cream, Unilever used the twin to set parameters for various standards, such as the ideal temperature for cutting soap into bars. When the temperature is too high, a machine cools the soap to the optimal temperature.

Instead of pausing production for quality checks, operators track whether the production process is meeting the pre-defined parameters and tests quality offline using the digital twin. If production isn't meeting those parameters, operators then pause production to implement changes. Unilever saved approximately $2.8 million at the pilot factory by reducing energy consumption and boosting productivity by 1-3%.

Weighing and shipping technologies

As demand for two-day and next-day shipping continues to grow, manufacturers, warehouses and logistics companies all feel the pressure for speed. Mobile weighing technologies are one solution that allows convenient weighing at the point of loading and unloading. These technologies offer an alternative to the traditional static weighing scales located in various areas in the facility. With traditional weighing scales, operators had to transport products from loading and unloading areas to weighing scales using equipment such as forklifts and pallet jacks. Operators recorded information manually and then transported the product back to the loading or unloading area.

While static scales still have a place in the modern warehouse, they create several challenges. First, the need to transport product back and forth between scales and loading and unloading areas means more time and energy spent on the weighing process. The pallet jacks and forklifts used to transport product between locations contributes to traffic congestion and increases safety risks, as well. Forklift operation causes 100 deaths 95,000 injuries each year across all industries, according to OSHA. Plus, OSHA recommends a maximum speed of five miles per hour for forklifts, which can be challenging when time is of the essence. Mobile weighing technologies reduce these risks by reducing the need to transport product to static scales.

Weighing technologies aid the trucking industry, too:

- **Weighbridge truck scales:** Weighbridge truck scales are placed in areas easily accessible for trucks, and trucks drive onto the scale for weighing. These scales can process many trucks in a short time, and they work for many types of trucks.
- **On-board truck scales:** Today, more trucks are fitted with on-board truck scales, cordless weighing systems that transmit data using load cell technology and air suspension pressure readings to determine the weight of the truck and the load.
- **Portable truck scales:** Portable truck scales ensure accurate weighing results and help to ensure that trucks are loaded to optimal capacity and within legal limits. Portable truck scales are easy to move and offer weigh-in-motion capabilities.

In packaging, cartonization solutions calculate the ideal carton size for orders to reduce waste and eliminate guesswork in selecting the right containers for packaging and shipping. If associates select a carton that's too small or too large, they often end up back-tracking to repeat tasks (selecting a different carton size and repackaging an order). In some cases, associates who select a carton that's too large use it anyway to avoid repeating tasks, resulting in packaging material waste and potentially higher shipping costs.

The most advanced cartonization software solutions factor in weight as a 4^{th} dimension. These solutions go beyond calculating whether the items in an order will fit in a carton to determine the most cost-effective way to pack an order, considering factors such as carrier dimensional weight rates and labor costs for order picking.

Robotics, driverless vehicles and drones

Robotics, driverless vehicles and drones benefit the manufacturing and warehousing industries in several ways. Collaborative mobile robots, for instance, increase accuracy and efficiency in the warehouse by setting the pace for warehouse associates, leading them through work zones to minimize walking and keeping them on-task. Leveraging AI and ML, collaborative robots like Chuck by 6 River Systems optimize pick routes in real-time and prioritize tasks based on current warehouse conditions.

Collaborative robots work with a warehouse's existing infrastructure, eliminating costly infrastructure upgrades and lengthy wait times to achieve ROI common with traditional warehouse automation solutions. Equipped with state-of-the-art sensors – the same technology used in autonomous vehicles – Chuck doesn't need wires, stickers or cables to navigate a warehouse. Chuck is fully aware of its surroundings and navigates around obstacles such as boxes and racks with ease. Chuck also slows down when he detects people or equipment in the area.

A flexible, scalable automation solution for the modern warehouse, warehouse operators can rent additional collaborative robots to meet demand during peak periods and return the additional units when demand returns to normal. Operators can also easily transfer Chucks between facilities as needed.

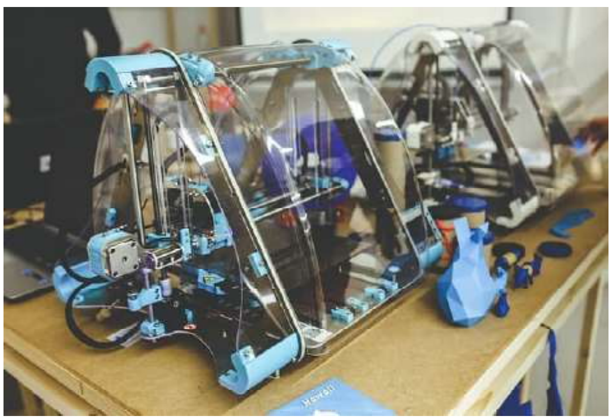
Collaborative robots transport totes or cartons filled with items throughout the warehouse, meaning associates experience less physical strain and fatigue that's common with manual material transport. Warehouses that leverage collaborative robots can realize a 2-3X increase in productivity.

Used to streamline inventory management, drones can scan barcodes on pallets and record the location of every item in a warehouse's WMS, automating the tedious and error-prone process of manual inventory counts. Drones are a safer alternative to manual inventory processes, eliminating the need for reach trucks, scissor lifts and forklifts to access hard-to-reach inventory during inventory counts.

A few major enterprises have explored the use of drones for delivery purposes, such as Amazon's Prime Air, a project aiming to deliver packages to customers in 30 minutes or less. UPS Flight Forward, a subsidiary of UPS, won federal approval to expand its drone delivery operations in the U.S. in 2019. While drone delivery isn't yet a fully realized technology, IEEE Spectrum predicts that commercial drone delivery “will finally be a thing in 2020” in the United States, but with intense regulatory scrutiny.

Like unmanned aerial vehicles, several companies have their eye on making driverless vehicles a reality in the near future. These vehicles may be monitored by a driver remotely who has the ability to take control over the vehicle at any time should conditions require human intervention. With this setup, one operator could monitor multiple vehicles simultaneously. Although still in its infancy, the concept of driverless vehicles is in active development by companies like Waymo and Uber. Ultimately, the possibility of driverless trucks in logistics is on the horizon. According to McKinsey & Company, 65% of consumable goods in the U.S. are transported by truck. Fully autonomous trucks could reduce operating costs by approximately 45%, resulting in between $85 billion and $125 billion in savings in the trucking industry.

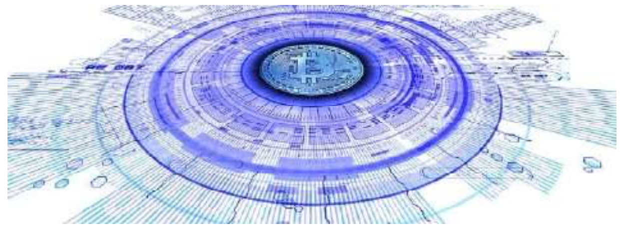
3D printing



3D printing impacts the supply chain by supporting on-demand manufacturing, which results in inventory cost savings. Because 3D printing relies on digital files or blueprints of a product, developers and companies can implement produce new iterations in less time and at a lower cost. 3D printing allows for sourcing multiple parts from a single source, reducing supplier risk and improving the agility of the product life cycle.

3D Printing Industry reports that, according to research from PricewaterhouseCoopers, 71.1% of manufacturing companies in the U.S. already use 3D printing in some form. Nearly one-third (31.4%) use it for rapid prototyping. 6.6% of manufacturers currently use 3D printing to produce end products, while 42% of manufacturers say they plan to implement 3D printing for mass manufacturing within the next three to five years. What’s more, more than one in five manufacturers (22%) say they believe the restructuring of the supply chain will be the most significant change resulting from widespread adoption of 3D printing.

Blockchain



According to Logistics Bureau, blockchain could resolve much of the friction present in the supply chain today. This friction arises from:

- The multiple entities involved in the supply chain and the need to share information freely (yet securely) with those entities
- The complex contract process requiring banking and legal services
- The complexity of tracing parts and products back to suppliers
- Processing time (sometimes several days) to process payments between entities

A digital, decentralized ledger, blockchain records transactions in a series of blocks. Multiple copies of the blockchain are distributed across several computers, known as nodes, and every node receives an updated copy for every new transaction. The distributed nature of blockchain makes tampering difficult, as hackers or those with malicious intent would need to update all copies of the blockchain at precisely the same moment. Logistics Bureau points out several benefits of blockchain for the supply chain, including:

- Reliability and integrity: All entities agree that the blockchain is a valid record of transactions.
- Provenance: Blockchain makes it easy to trace products and parts to their point of origin.
- Security: It’s impossible to delete transactions from a blockchain. Likewise, it’s not possible to falsify inventory records, payment transactions, delivery times or warehouse conditions in a blockchain ledger.

The blockchain ecosystem isn’t yet fully mature. All partners, suppliers and other entities involved in a supply chain would need to buy into blockchain to realize the full potential of this technology. By tracking products from the point of origin to the end consumer, blockchain has promise for use in industries requiring excellent traceability, such as food and beverage and drugs and pharmaceuticals.

Supply chains are complex, and any effects on one point in the supply chain tend to have a domino effect. For instance, transportation delays can result in raw materials shortages, which slow or halt manufacturing processes that rely on those materials. Advancements in supply chain technology support the efficient flow of goods through every stage of the supply chain.

Source: 6river.com

BRANCH NEWS

LUCKNOW BRANCH

Seminar on supply chain management in new paradigm was organized by IIMM, Lucknow branch on 5th February 2023 at Royal Café hazratganj Lucknow.

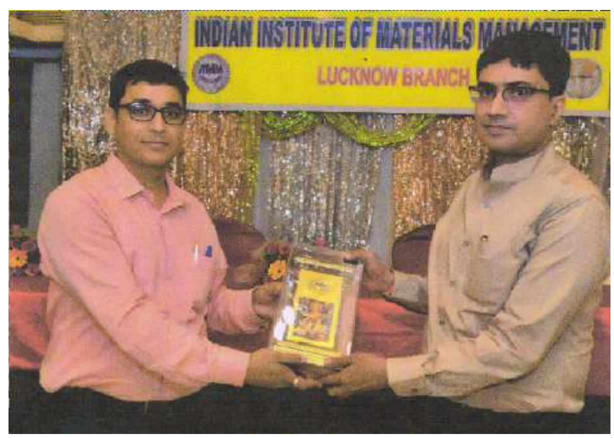
Seminar was inaugurated by Mr. Ravi Prakash Chief of project, Hindustan Aeronautic ltd. And mr. Anupam Sharma, Dy general Manager zonal office Punjab national bank Headquarter , Lucknow 5th February 2023. Program is followed by Saraswati vandana by shanti kunj Haridwar. Mr. Prashant Kumar Singh chairman of IIMM Lucknow branch Welcome all deginatives ,eminent speakers and members of the IIMM. In this welcome speech stated that Challenges in current scenario supply chain are very much dynamic in nature, therefore Lucknow organized the seminar for supply chain professionals.

Memento given by Secretary Lucknow Branch to Mr. Anupam Sharma, DYGM (Zonal) Punjab National Bank, Lucknow.

Gathering for attending the Seminar

Chief Guest Mr. Ravi Prakash chief of projects, Hindustan Aeronautics Ltd, Lucknow stressed that supply chain professionals need to pull up theirs socks to convert the threat into opportunity.

Bouquet given by Secretary, Lucknow Branch to Dr. Vaisampayam, VC, Kanpur, Allahabad & Bundelkhand University



Memento given by Ashsh Srivastava, Sr. Manager HAL, Lucknow to Dr. Ashutosh Mohan, Prof. BHU, Varanasi

Mr. Anupam Sharma, DGM, PNB, zonal office express their view and ideas of new financial policies of government of India for banks.

Eminent speakers at the seminar were Dr. J.V Vaishampayan, Ex V.C Allahabad, Kanpur ,bundle khand University and Dr, Ashutosh Mohan, Proffesor Management studies BHU Varanasi .

Above seminar attended by more than 100 excutive of various field / organization such as HAL Lucknow, Kanpur, Korwa ITI Mankapur, Punjab national bank Lucknow NTPC. Head office north, RML Hospital, king George medical college, Lucknow.

Bouquet given by Mr. Brijesh Singh, GM Tata Motors, Lucknow to Chief Guest

After vote of thanks given by Mr. Suarabh Chandra, Additional Genral manager, TATA motors and NC lucknow branch. Seminar followed by lunch.

AURANGABAD BRANCH

Marathwada Association of Small Scale Industries & Agriculture (MASSIA) has organized Advantage Maharashtra EXPO 2023 t Auric, DMIC , Shendra Aurangabad during 5th to 8th January 2023. The EXPO was supported by **Indian Institute of Materials Management, Aurangabad.** Shri. Udayji Sawant, Cabinet Minister of Ministry of Industries, Maharashtra State and Shri.Bhagwatji Karad- Union Minister of State for Finance, Govt of India, inaugurated the EXPO. Deputy Chief Minister of Maharashtra Shri. Devendraji Fadvanis had visited the closing ceremony of EXPO. The Highlights of EXPO were:

Executive Committee at Stall

ICEEM College Executive Committee visited IIMM Stall during Expo

- Over 800 Exhibitors from Pan India.
- 8 Lacks + Business Visitors visited the EXPO.
- National & International participants.
- State Government announced various schemes for MSME's and Industries across Aurangabad Industry and Investors.
- State government announced an agreement with Greenko for investment in Aurangabad for a renewable energy project which will create employment for 6300 people.
- Electric two-wheeler manufacturer Ather Energy have shown interest to Invest in Auric.
- Marathwada Auto Compo Pvt Ltd one of the leading auto components manufacturing companies and Exhibitor at EXPO has announced starting of Heavy fabrication Industry with latest technologies & machineries at Turkhabad Kharadi, Aurangabad. The plant is expect to start in March 23.
- Many new products were launched at EXPO.
- B2B Meetings & Vendor development programs. Seminars on latest trend & technologies.

Indian Institute of Materials Management, Aurangabad had also its Stall as an Exhibitor at EXPO. On invitation from IIMM Purchasers, SCM professionals, Proprietors, buyers, Tier I, II & III suppliers, Managing Directors, Dealers, Distributers, students from various faculty / branch and Members of Different association visited the IIMM stall. All the executive committee members took huge efforts for making the program a huge success. MASSIA felicitated IIMM executive committee members. K.Srihari –Chairman of IIMM, Aurangabad Branch received the Memento on behalf of Branch.

Shri.Bhagwatji Karad- Union Minister of State for Finance, Govt of India, Mr.Lalit Gandhi, President – Maharashtra Chamber of Commerce, Industry & Agriculture (MACCIA), Mr.Tansukh Zambad – Vice

President –Maharashtra Chamber of Commerce, Industry & Agriculture (MACCIA), Mr.Prasad Kokil – President, Chamber of Marathwada Industries & Agriculture (CMIA), Dr.Gautam Saha- Director Strategic Development, International Centre for Excellence in Engineering & Management (ICEEM), Mr.Suraj Dumne – President, Aurangabad Industrial Supplier Association (AISA), Mr. Dattray Bedade – Secretary, Aurangabad Industrial Supplier Association (AISA) had visited IIMM stall and appreciated the branch activities across the region.

BANGALORE BRANCH

7th January 2023 (Saturday) – Monthly Lecture Program / Webinar :

IIMM Bangalore Branch organized a Monthly lecture Program / Free Webinar on "Supply Chain Challenges in Semiconductor Industry" on 7th January 2023 (Saturday) at 6.00 pm, on MS Team Meet by Mr. Girish Kamala, Sr. Director and Country Head – Automotive, Infineon Technologies India Pvt. Ltd. Mr. G. Balasubramanian, Co-Ordinator welcomed the gathering and introduced the speaker. Lecture program was very interesting with good interaction from the participants and speakers. Mr. M.R. Achyuth Rao, Honorary Secretary proposed vote of thanks. We received Excellent feedback from the participants.

18th January 2023 (Wednesday) : Talk on "Effective Time Management":

IIMM Bangalore Branch and World Trade Centre Bengaluru, Kochi & Chennai, organized a Talk on "Effective Time Management" -When the Clock Ticks Away - Do More in Less Time by Mr. V. Aswatha Ramaiah, Founder, Unique Consultants on 18th January 2023 (Wednesday) at 4.00 pm. Mr. Vivek and Mr. Sandeep from World Trade Centre welcomed the gathering and introduced the Speaker. Dr. P.Sengottaiyan, Branch Chairman, Proposed Vote Thanks. About 325 participants attended the program. We received excellent feedback from participants.

28th January 2023 – Study Circle Meeting :

IIMM Bangalore Branch organized a Study Circle Meeting / Free Webinar on "Supply chain Optimization"- A Digital Strategy and Transformation" on 28th January 2023 (Saturday) at 6.00 pm by Mr. Kamalendu Sith, General Manager, Gokaldas Exports Ltd. About 70 participants attended and we received very good feedback from the participants.

16th February 2023 – Webinar :

IIMM Bangalore Branch and World Trade Center, Bangalore organized webinar on the Topic: "LDB and ULIP-Data Driven Digital Transformation of India's Logistics Sectors" on 16th February 2023 (Thursday) (Curtain raiser program: Impact of National Logistics Policy and Digital Supply Chain Management on 24th February 2023 at World Trade Centre, Bangalore (4th Floor) 10 AM TO 5.00PM): by Shri Abhishek Chaudhary, Vice President -Corporate Affairs, HR &Company Secretary NICDC Limited.

About 150 participants from Logistics Head, Purchase Head, from our CPO-CXO panel from ET 500, Fortune 500 companies attended like Bosch, IBM, Infosys, Wipro, TATA, L&T, SAP, GSK, IFB, Manhattan Associates, ACER,DHL,ITC,Schenker, Volvo, Continental Automotive, Flipkart, Amazon, HAL,BEML, NAL, Railway Wheel Factory, BEL,BHEL, and Professors from reputed Institutions like IIIT,IIM,RV University,PES University, JSS University, and IIMM Members, students attended the webinar / Monthly lecture program.

Mr. G. Balasubramanian, Senior Faculty was the MC & well-co-ordinated the webinar. Mr. K.C Harsha, Governing Council members organised this webinar. It was very interesting with good interaction from the participants and Speaker. We received excellent feedback from the participants.

24th February 2023 – Seminar:

As part of Golden Jubilee celebration IIMM Bangalore Branch organized a one-day seminar on "Impact of National Logistics Policy and Digital Supply Chain Management on 24th February 2023 at World Trade Center, 4th Floor, Brigade Gateway Campus, Dr. Rajkumar Road, Bangalore.

Eminent Speakers from NICDC (National Industrial Corridor Development Corporation) & NLDS, Delhi, Warehousing and Logistics, Commerce, Infrastructure, Retail, FMCG, Services and Manufacturing, and Technologies both from Public and Private Sectors handled the sessions.

About 60 participants from various sectors attended the seminar. Mr. Paul George, NC Members was the MC and very nicely co-ordinated the Seminar. Good effort given by all EC team and Mr. K.C. Harsha, Mr. C.L. Kapoor and Mr. C. Subbakrishna, Mr. G. Balasubramanian and with very good support of Mr Nagaraj S.M. and his team from the IIMM Office very well organised the success of this seminar. Also, with support of sponsors like NLSDS, seven seas Logistics, & Technical Support by World Trade Center and Innove Team conducted this seminar and received excellent feedback from the participants.

EXECUTIVE HEALTH

HIGH CHOLESTEROL SYMPTOMS: WARNING SIGNS TO WATCH OUT FOR IN YOUR FINGERS AND TOES

High cholesterol is often referred to as a 'silent killer' because it rarely exhibits warning symptoms and gradually causes damage over time. However, your fingers and toes can sometimes detect the condition.

Your body requires cholesterol, a type of fat, to function properly. However, having too much cholesterol in your blood can be harmful to your health. Cholesterol builds up in our body when we include fatty foods in our diet or lack of exercise, smoke, alcohol and excess body weight. High cholesterol is often referred to as a "silent killer" because it rarely exhibits warning symptoms and gradually causes damage over time. However, your fingers and toes can sometimes detect the condition.

How are Cholesterol Levels Connected With Fingers And Toes?

One of the biggest warning signs of high cholesterol includes painful fingers and toes. The signs could be the result of an accumulation of cholesterol that clogs the blood vessels in the legs and hands.

1. Pain in the legs, worsening during a walk can also happen owing to high cholesterol levels forming plaques and interrupting blood flow in the legs .
2. Another sign is where one may notice yellow colour deposits (lumpy growth) on palms, elbows, and buttocks.
3. Person suffering from high cholesterol may see yellowish-coloured deposits on the skin, mainly near the eye, palm, and the back of the lower legs.
4. One will also see yellowish and orange-coloured growths or deposits on the upper eyelid when the cholesterol levels are elevated. Moreover, some can also experience cold legs or feet.
5. Other symptoms include physical changes in the legs and feet resulting in the white or yellow colour of the nails and skin. According to doctors, your toenails may grow more slowly or become thickened, or deformed in case of high cholesterol levels.

How to Prevent High Cholesterol?

High cholesterol increases the risk of heart disease and heart attacks. Although medications can manage cholesterol, certain lifestyle changes can also help you reduce bad cholesterol. Eating heart-healthy foods, quitting smoking or drinking, exercising regularly, and maintaining a healthy body weight are some of the changes that one should include in his or her lifestyle. Thus, it is need of an hour to keep your cholesterol levels in check. Also, take note of the symptoms and seek timely intervention.

5 Easy And Healthy Tips to Lower Your Cholesterol Levels

1. Eat heart-healthy foods

- Reduce saturated fats: Found primarily in red meat and full-fat dairy products
- Eliminate trans fats: Trans fats, sometimes listed on food labels as "partially hydrogenated vegetable oil," is often used in margarine and store-bought cookies
- Eat foods rich in omega-3 fatty acids: Foods with omega-3 fatty acids include A2 cow ghee, salmon, walnuts, and flaxseeds.
- Increase soluble fibre: Soluble fibers can reduce the absorption of cholesterol into your bloodstream.

2. Exercise Regularly

Exercise on most days of the week and increase your physical activity as it helps in improving your cholesterol.

3. Quit smoking

Smoking lowers HDL cholesterol as by quitting, smokers can lower their LDL cholesterol and increase their HDL cholesterol levels. It can also help protect their arteries.

4. Maintaining a healthy body weight

Being overweight or obese tends to raise bad cholesterol and lower good cholesterol. But a weight loss of as little as 5% to 10% can help improve cholesterol numbers.

5. Drink alcohol only in moderation

If you drink alcohol, do so in moderation. For healthy adults, that means up to one drink a day for women of all ages and men older than age 65, and up to two drinks a day for men aged 65 and younger. Too much alcohol can lead to serious health problems.

Source: India.com

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IIMM HEADQUARTERS AND BRANCHES

IIMM NHQ : Plot No. 102 & 104, Sector-15, Instl. Area, CBD Belapur, Navi Mumbai-400614. Tel.: 27561754 / 2756 5831, Fax : 022-27571022
E-mail NHQ : admin@iimm.org, members@iimm.co.in E-mail Edu. Wing : iimmedu@iimm.co.in, Website : www.iimm.org

AHMEDABAD BRANCH
Indian Institute of Materials Management
C/o SaRaa Group of Companies
406, Kalasagar Shopping Hub,
Opp. Saibaba Temple, Near Sun N
Step Club, Sattadhar Cross Road,
Ghatiodia, Ahmedabad-380061, Gujarat
Cell: 91-9909996711
iimmahmedabad@gmail.com

ALWAR BRANCH
Indian Institute of Materials Management
15, Shopping Centre, Shanti Kunj,
Alwar - 301001 (Rajasthan)
Ph.: 09731245655/ 07877745655
Email: iimmalw@gmail.com

AURANGABAD BRANCH
Indian Institute of Materials Management
Third Floor, T-01, Khivansara, August high
Street, Ulka Nagari, Aurangabad - 431005.
Mob: 09423455983/9765402066
E-mail : iimmau@rediffmail.com

BANGALORE BRANCH
Indian Institute of Materials Management
304, A-Wing, III Floor, Mittal Tower # 6
M G Road, Bangalore - 560001
Ph.: 080-25327251/52
E-mail : iimmbg@airtelmail.in

BHARUCH BRANCH
Indian Institute of Materials Management
303, Vinay Complex, Near Dudhdhara
Dairy, Old NH Highway # 8, Bhaurch
Ph.: 02642-283223
E-mail : iimmbhaurch@gmail.com

BHILAI BRANCH
Indian Institute of Materials Management
Room No. 326, 3rd Floor, Ispat Bhawan,
Bhilai Steel Plant, Bhilai - 490001
Ph.: 0788-2892948/2222170

BHOPAL BRANCH
Indian Institute of Materials Management
4/9-B, Saket Nagar, Bhopal - 462024

BILASPUR BRANCH
Indian Institute of Materials Management
C/o. Gen. Manager (MM)
South Eastern Coalfields Ltd.,
Seepat Road, Bilaspur - 495006 (CG)
Ph.: 07752-241087/75014
E-mail : iimmbilaspur2015@gmail.com

BOKARO BRANCH
Indian Institute of Materials Management
Purchase Dept., Ispat Bhawan, Bokaro
Steel City - 827001
Mob: 08986873175/8986874786
E-mail : iimmbokarobranch@gmail.com

BURNPUR BRANCH
Indian Institute of Materials Management
New Materials Bldg. Ground Floor, Near
CRS Store, SAIL-IISCO Steel Plant
Burnpur - 713325 (West Bengal)
Mob: 9434776532/9434777365

CHANDIGARH BRANCH
Indian Institute of Materials Management
SCO 19-B, Swatik Vihar, Mansa Devi
Complex, Sector - 5, Panchkula - 134114
Ph. : 0172-2556646/4654205
E-mail : iimmchandigarh2@gmail.com

CHENNAI BRANCH
Indian Institute of Materials Management
4th Floor, Chateau D'Ampa, 110
(New # 37), Nelson Manickam Road
Aminjikarai, Chennai - 600029
Ph.: 044-23742195/23742750
E-mail : chn.iimm@gmail.com
iimmchennai@gmail.com

COCHIN BRANCH
Indian Institute of Materials Management
GCDA Shopping Complex, Kadavanthra
PO, Kochi - 682020 (Kerala)
Ph.: 0484-2203487/9400261874
E-mail : iimmkochi@bsnl.in

DEHRADUN BRANCH
Indian Institute of Materials Management
C/o. 30, Kalindi Enclave, Balliwala Chowk,
Lane No. 2, Dehradun - 248001 (U.K)
Ph.: 0135-2795486/9410397734

DHANBAD BRANCH
Indian Institute of Materials Management
O/o. GM (MM), B C C L, Koyla Bhawan
Koyla Nagar, Dhanbad - 826005
(Jharkhand) Cell # 09470595238
E-mail : iimmdhanbad@gmail.com

DURGAPUR BRANCH
Indian Institute of Materials Management
Office of ED (MM) 3rd Floor
Ispat Bhawan, SAIL, Durgapur Steel Plant
Durgapur - 713203
Tel: 0343-2574303

GANDHIDHAM BRANCH
Indian Institute of Materials Management
1,2,3, Plot # 356, Ward-12B, Tagore Road
Gandhidham -370201 (Kutch) Gujarat
Tel: 02836-231711/231745
E-mail : iimm_gim@rediffmail.com

GOA BRANCH
Indian Institute of Materials Management
124/8, UMASHRIPAD, behind NSD
Near Vishal Megamart, Anand Estate
Dabolim Vasco-da-Gama, Goa - 403801
Mob: 09923425037

GREATER NOIDA BRANCH
Indian Institute of Materials Management
B-193, Swam Nagri, Opp: J P Golf Course
Greater Noida - 201308
E-mail : iimmgreno@gmail.com

HARIDWAR BRANCH
Indian Institute of Materials Management
C/o. 97-B, Vigyan Kunj, Indian Institute of
Technology, Roorkee, Haridwar - 247667
E-mail : iimmharidwar@gmail.com

HOSUR BRANCH
Indian Institute of Materials Management
Opp: Hosur Bus Stand, By Pass Road
Above Axis Bank, Palaniyappa Building
Hosur - 635109 (TN)

HUBLI BRANCH
Indian Institute of Materials Management
Karnataka Chamber of Commerce of
Industry Building, 1st Floor, Jayachamaraj
Nagar, Nr. Nehru Ground, Hubli - 580020

HYDERABAD BRANCH
Indian Institute of Materials Management
Building no. 6-3-347/9/4/C, First Floor, Union
Bank Building, B/H Model House, Dwarkapuri
Colony, Punjagutta Hyderabad-500082.
Email: iimm.hyd1719@gmail.com,
Mob.: 9949872010

INDORE BRANCH
Indian Institute of Materials Management
03, Rajmahal Colony, Ext Manik Bag Road,
Indore - 452007 (M.P), Mob: 9826625417,
Email: dr.stmgmt@gmail.com

JAIPUR BRANCH
Indian Institute of Materials Management
C/o. Mr. Purushottam Khandelwal
48, Mohan Nagar, Gopalpura Bypass,
Jaipur - 302018 Cell: 09799299157
E-mail : iimmjaipur1@gmail.com

JAMSHEDPUR BRANCH
Indian Institute of Materials Management
Room # 6, Russi Modi Centgre for
Excellence Jubilee Road,
Jamshedpur - 831001
Ph.: 0657-2224670/2223530
E-mail : iimm_jsr@yahoo.co.in

JAMNAGAR BRANCH
Indian Institute of Materials Management
C/o. Mr. Jayesh Joshi
Riddhi Engineering Works
111, Madhav Complex,
Opp: DKV Collage, Jamnagar - 361008
0288-2750171 / 9824263869
riddhieng@yahoo.com

KANPUR BRANCH
Indian Institute of Materials Management
C/o. Kailash Nath, 58, New Defence
Colony, Opp. Krishna Nager Telephone
Exchange, G.T.Road, Kanpur-208007 UP
Mob.: 7897000150, 9935032495
kailashnath119@gmail.com
agnihotri.hal@gmail.com

K G F BRANCH
Indian Institute of Materials Management
C/O Santosh Kumar, Manager Materials,
EM Division, BEML Limited, KGF-563115,
Mob: 09743977684,
Email: emvh@beml.co.in

KOLKATA BRANCH
Indian Institute of Materials Management
8/B, Short Street, Kolkata - 700017
Ph.: 033-22876971/22834963
E-mail : iimmcal17@gmail.com

LUCKNOW BRANCH
Mr. P.K.Bajpai
Indian Institute of Materials Management
86/106, Kurmi Tola, Maqboolganj,
Lal Kuan, Lucknow - 226018
Ph.: 9415752999, Res. 6307080159

LUDHIANA BRANCH
Indian Institute of Materials Management
C/o. Guru Nanak Industrial Corporation
Adj. Hero Cycle Ltd.,
G T Road, Ludhiana - 141010 (Punjab)
Ph.: 0161-5212268
E-mail : iimmldhbr@gmail.com

MUMBAI BRANCH
Indian Institute of Materials Management
2-A, Arihant Bldg, Above Bhandari Co-op
Bank Ltd., Goregaon (E) Mumbai - 400063
Ph.:022-26863376/26864528/26855645-46
E-mail : iimmbom@gmail.com

MUNDRA BRANCH
Indian Institute of Materials Management
C/o Paresh Satasiya
DURLABH SINGH KHALSA
No. B/04/03, Sanudra Township, Old Port
Road, Distt. Kutch, Mundra - 370421
(KUTCHH). paresh.satasiya@adani.com

MYSORE BRANCH
Indian Institute of Materials Management
Anubhav Udyog, K-64, Hootagalli Ind.
Area, Mysore - 570018 (Karnataka)
Ph.: 0821-4282124
E-mail : mysoreiimm@gmail.com

MANAGALORE BRANCH
Indian Institute of Materials Management
C/o. Exclusive Shipping & Exports, IV
floor, Ashirwad Building, GHS Road,
Mangalore - 5750001, Tel: 0824-2440913,
Mob: 9845080613, Email:
phillipcc13@hotmail.com

NAGPUR BRANCH
Indian Institute of Materials Management
404, Suryakiran Complex-1, Bajaj Nagar,
Nr. VNIT Gate, Nagpur - 440010
Ph.: 0712-2229446
E-mail : iimmnagpur@gmail.com

NALCO NAGAR BRANCH
Indian Institute of Materials Management
C/O Mr. S N Baghar, H.No. A-04, Shree
Ganesh Villa, Bikash Nagar, PO-Turanga,
Distt: Angul - 759123 (Orissa)
Cell: 09437081126
Email: snbaghar@nalcoindia.co.in

NASIK BRANCH
Indian Institute of Materials Management
1, Parag Bldg, Patel Lane # 4
College Road, Nasik - 422005
Ph.: 0253-2314206
E-mail : iim_nsk@bsnl.in

NEW DELHI BRANCH
Indian Institute of Materials Management
U-135, Vikash Marg, Shakrapur
Near Laxmi Nagar Metro Stn,Delhi - 110092
Ph: 011-41354969 email: admin@iimmdelhi.org
Mob: 098 18 66 42 67 www.iimmdelhi.org

PUNE BRANCH
Indian Institute of Materials Management
Pratibha Towers, Plot # 22, Old Pune
Mumbai Road, CTS # 15/2, Above TVS
Showroom, Wakdewadi, Pune - 411003
Ph.: 7276010854
E-mail : iimmpune1@gmail.com

RAE BARELI BRANCH
Indian Institute of Materials Management
497, Near CMO Office, Jail Road,
Rae Bareli -229001
iimmrbl@yahoo.com, iimmrbl@gmail.com

RANCHI BRANCH
Indian Institute of Materials Management
Gen Manager (MM) Office, Central
Coalfields Ltd.,Darbhanga House,
Ranchi - 834001, Tel.: 08987784115
E-mail : abinashkthakur@gmail.com

ROURKELA BRANCH
Indian Institute of Materials Management
TH-01(West) Sector - 4, Near Mahila Thana
Dist: Sundergarh, Rourkela-769002
(Odisha) Cell: 08260711943/08895501056
Email: iimm.rourkela@gmail.com

SURAT BRANCH
Indian Institute of Materials Management
C/o. Genral Manager, Krishak Bharati Co
Ltd, PO: Kribhaco Nagar, Nr. Kawas
Village, Suresh-394515, Tel: 0261-2802032
E-mail : pravendrasingh@kribhco.net

TRIVANDRUM BRANCH
Indian Institute of Materials Management
TC-22/1820, 2nd Floor,Future House
Temple Road, Sasthamangalam
Thiruvanathapuram - 695010
Ph. : 7994512438
E-mail : iimmtvpm@gmail.com

UDAIPUR BRANCH
Indian Institute of Materials Management
2nd Floor, Above Manohar Furniture
Ashwini Marg, Udaipur - 313001
Ph.: 0294-2411969/2421530
E-mail : iimmudpr@sancharnet.in
iimmudpr@gmail.com

VADODARA BRANCH
Indian Institute of Materials Management
2nd Floor, Vishal Chambers, 34, Vishwas
Colony, B/h Alkapuri Shopping Centre,
Alkapuri, Vadodara - 390007
Ph.:0265-2359060/2353410/M: 7043959060
E-mail : iimmbrd@yahoo.co.in,
iimmvadodara@gmail.com

VAPI BRANCH
Indian Institute of Materials Management
Chip & Bytes Fortune mall, Above Jade
Blue Via Road, GIDC Vapi - 396195
Ph.: 9724214353
E-mail : iimmvapi@gmail.com

VISAKHAPATNAM BRANCH
Indian Institute of Materials Management
C/o. CMA Bhawan, Akkayyapalem JN.
Akkayyapalem Highway, Visakhapatnam -
530016, Ph.: 9885310934/7093802468
E-mail : iimmvizag@gmail.com

V V NAGAR BRANCH
Indian Institute of Materials Management
Champs Engineering, 1-52, GIDC Estate
Vitthal Udyognagar - 388121
Tel: 02692-230440/ 09825028050
Email: harshad.champs@gmail.com

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