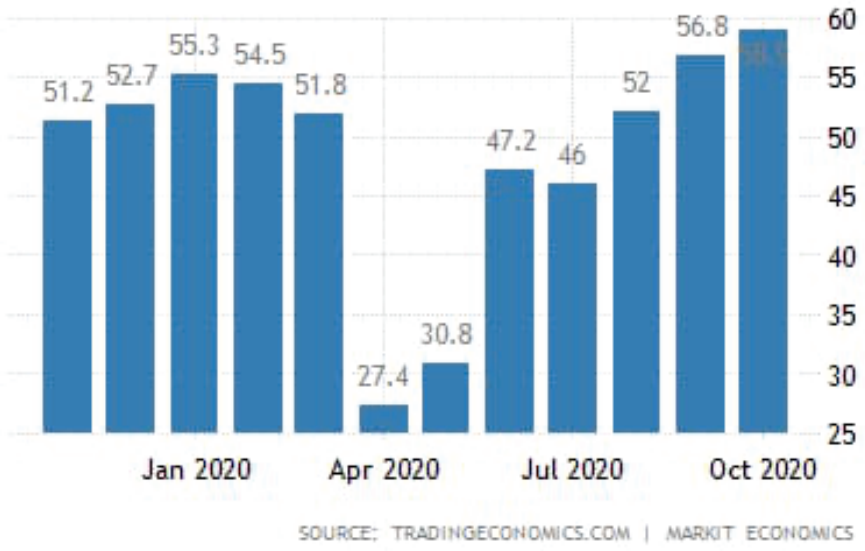
ISSN 2320-0758

PRICE ₹ 50/-

MATERIALS MANAGEMENT REVIEW

Volume 17 - Issue 1 | Date of Publication: 1-11-2020 | No. of Pages: 1-60 | November 2020

Supply Chain Management



TRADING“ECONOMICS“
India Manufacturing PMI“

Summary “ Forecast“

“The IHS Markit India Manufacturing PMI rose to 58.9 in October 2020 from 56.8 in September, easily beating market consensus of 55.4. The latest reading pointed to the strongest improvement in the health of the sector in over a decade, amid ongoing relaxation of COVID-19 restrictions. Output expanded by the most since late-2007 and new order growth hit its highest level since mid-2008, with export sales rising at a quicker pace. Meantime, payroll numbers were lowered due to government guidelines related to the pandemic, while backlogs of work rose the least in the current six-month period of accumulation. Pressure on supplier capacity subsided, as indicated by the slowest rise in delivery times for seven GB months. Inflationary pressures, meantime, remained subdued as seen by a modest increase in input costs and only marginal rise in selling prices. Finally, business confidence was at a 50-month high.

Source: Markit Economics

From the Desk of The National President

Dear Members,

Greeting from National President!!

Global Pandemic has completely changed our mindset. Everything seems to revolving around COVID-19, its impact, means to protect self, vaccine for coronavirus etc. When India was at the peak of daily Corona virus cases in September, it was expected that India will surpass US in registering the highest number of cases by mid October 20. However as we are nearing end October, the average daily case are well below 50,000 mark. Few COVID vaccines are on the last leg of human trail. In best possible estimate, the vaccine will hit the market by end Dec.20 or early January 21. Central Government has also starting rolling out plans for Vaccination.

As we are heading towards Diwali, positive sentiments are building up on the economic front. Automobile sector has greatly revived with all major automobile manufacturers registering profit. With two back to back good monsoon, rural income is set to increase due to bumper kharif crop thereby triggering rural demand. New farm policy of getting rid of APMCs and farmers given the rights to sell their produce directly in the open market will have an enabling effect in increasing farm income. With crude oil prices remaining within 40$ / barrel, India's import bill is well under control. This will result into reduction in trade deficit. As a country we are also having trade surplus with reduced imports and increased export.

Several IIMM branches are still in severe grip of Pandemic. Since the offices have to operate with curtailed manpower, the branch audits are not happening at the required pace. In spite of the prevailing situation, few branches have successfully completed their annual audit and have forwarded the details to NHQ. Audit process is under progress in few branches whereas no update is available from several branches. I take this opportunity to appeal to all those branches who have still not initiated the process should immediately start their respective branch audit and send the detail to NHQ.

My greeting to all IIMMites and their family members ''Á very happy Diwali & A Prosperous new year'. While you all socialize meeting your family, friends and dear ones on the festival season, please continue to follow all protocol of social distancing, wearing masks, frequent sanitization etc. Stay healthy and stay safe

With Warm Personal Regards

Malay Mazumdar
National President, IIMM
Email: Malay_mazumdar@yahoo.co.in

From the Desk of Chief Editor

Dear Members,

COVID-19 epidemic has affected lakhs of people worldwide financially, physically and mentally, with significant economic implications to linger for months to come. Organisation for Economic Co-operation and Development (OECD) has predicted that this crisis could reduce Global Economic growth by half. The COVID-19 has not only caused a major dip in manufacturing but also disrupted the supply chain for many companies across the globe.

Most supply chain leaders are still in the reactive phase as how to deal with this pandemic which has exposed the vulnerability of Supply Chain. As in the past few months, response of the nation have also been unpredictable due to various reasons including Covid fear and uncertainty of the period through which this epidemic will pass.

Supply chain has remained the most critical enabler in meeting both the ends (producer and consumer) during the entire period of lockdown and further onward, which shows, why it is pertinent to have resilient, robust and technological driven supply chain rather than the traditional linear supply chain.

Companies, now, can't afford to not to have a multi-dimensional, dynamic supply strategy which is capable of responding to disruption. It is important for Domestic entrepreneurs to look out local sourcing points and maintain a strong vendor base and strong inventory management system to meet the unexpected shocks in the supply chain.

Since, Lockdown and other restrictions are easing out in many parts of the world, it is now more important to relook at our supply chain with an Add-on Feature of 'New Normal' and cater the consumer needs with utmost precaution, care and safety of both consumers and employees.

Fortunately, new supply chain technologies are emerging that can dramatically improve visibility across the end-to end supply chain and support much more supply chain agility and resiliency. Technological Advancements like Artificial Intelligence, Internet of Things, Cloud Computing, Robotics, use of Drones while delivering the goods have become important tools to absorb the shock wave erupting out of any pandemic or any other situation.

In order to combat the I'll effects of COVID-19, the immediate focus should be on diagnosing the risks due to poorly managed supply chain. Once the problems are visible, the solutions can be achieved by adopting new technologies as well through flexibility, collaboration, and control mechanism. Further, companies should create a contingency plan to mitigate such shocks to manage its supply chain in most effecieent and effective way .

(DR. M.K. BHARDWAJ)

MATERIALS MANAGEMENT REVIEW

Volume 17 - Issue 1 (November 2020)

IFPSM

IIMM is a charter member of International Federation of Purchasing & Supply Management

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 &
iimm2delhi@gmail.com
Website : www.iimm.org

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

CONTENTS

NO. OF PAGES 1-60

Edited, Printed & Published by :
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 & iimm2delhi@gmail.com
Website : www.iimm.org

DEPLOYING A CUSTOMER-FOCUSED SUPPLY CHAIN STRATEGY WITH 4RS (RESPONSIVENESS, RESILIENCY, RELIABILITY AND REALIGNMENT) MODEL

DR. PANKAJ M. MADHANI, ASSOCIATE DEAN AND PROFESSOR
ICFAI BUSINESS SCHOOL (IBS), AHMEDABAD, pmadhani@iit.edu

Introduction

In today's world of complex and extremely competitive business milieu, firms are struggling to survive as product lifecycles (PLCs) have become shorter, clock-speed has become faster, and the consequences of disenchanting a customer have become more severe. In today's competitive business environments, firms are under intense pressure to systematically produce quality control and quality standards and generate positive bottom line results. That's why many firms are looking for ways to be more productive, creative and competitive as these factors affect their performance. To improve business performance in rapidly changing environments, supply chain performance can be a crucial prerequisite. The supply chain is one of the key lifelines of an organization hence, it has to transit from being simply a supporting activity to becoming an integral part of business strategy. Differentiation through customer service is the most effective way to improve business performance, and customer-focused supply chain strategy can help to achieve high-level customer service.

Traditional Supply Chains versus Customer-focused Supply Chains

The traditional supply chain in which the end point of networks are represented by final users, is no more relevant today, as such cost-focused supply chains driven by efficiency criteria are more susceptible to unforeseen swings in demand. In the traditional supply chain function, the major focus is on demand forecasting function while synchronizing distribution function. However, only a customer order drives real demand in the process and fills the supply chain. Hence, each supply chain member overestimates the customer demand to avoid stock-out situations. Usually, each supply chain entity "over-plan" stocks and keep safety margin to assure better customer service without supply disruption. This phenomenon is known as the "bullwhip effect" where a small variation in demand downstream generates increasingly larger demands as it progresses up-stream. Traditional, supply chain aims to reduce operating costs for firms by enhancing supply chain efficiency across its various processes. However, focusing only on cost-driven efficiency based strategy provides temporary competitiveness; it will not offer sustainable competitive advantages as products and services are not differentiated from competitors (Madhani, 2020a).

As an extension of the cost-focused (i.e. efficiency driven) supply chain, customer-focused supply chain provides better solution to cater changing customer needs. Table I, below shows major differences between traditional supply chains and customer-focused supply chains according to competitive priorities. Supply chain capabilities of responsiveness, resilience, reliability and realignment can be categorized as dynamic capabilities. Dynamic capability is the organization's capacity to create, extend, or modify competences (internal and external) to respond volatile and uncertain business environment. Such dynamic capabilities refers to the ability of an organization to meaningfully manage (i.e. integrate, build and reconfigure) its resource and hence can be differentiated from operational capabilities, which relates to existing processes of the organization. Thus dynamic capabilities of responsiveness, resilience, reliability and realignment provide competitive advantage for supply chain. It is mainly because these capabilities are built and revised according to market potential, structural changes in market as well as business conditions (Madhani, 2017).

Table I: Traditional Supply Chains versus Customer-focused Supply Chains

Sr. No.	Competitive Priorities	Traditional Supply Chains	Customer-focused Supply Chains
1	*Responsive*	Modest ability to respond to changes	Quick ability to respond to changes by taking proactive actions
2	*Resilient*	Usually restricted to an individual supply chain / or a bunch of supply chains and hence provides limited flexibility	Develop a specified cluster of several supply chains for enhancing flexibility
3	*Reliable*	Focus on cost-efficiency	Focus on reliable and cost efficient supply chains
4	*Realigned*	Often supply chain participants are asked to make selection between self-interest and interest of supply chain partners	Usually interests of supply chain partners converge to develop better synergy

(Source: Tabulated by author)

Strategic Supply Chain Management : The supply chain management (SCM) operates at three levels: strategic, tactical and operational and the highest level of SCM decisions is the strategic - also referred as strategic supply chain management (SSCM) which is relevant to the entire organization. The main theme of SSCM is not limited to the use of a supply chain as a process to deliver goods and materials to right place, as its scope is extended to elevate strategic position of an organization by strengthening its overall business performance. SSCM is about strategic thinking on supply chain management to enhance the firm's performance (Madhani, 2020b).

SSCM can enable organizations to create value in multiple ways and shows how the role of supply chain is being redefined, from an operational tool to a powerful competitive strategic weapon. SSCM improves business performance in current era of complex and volatile environment characterized by intense rivalry. Organizations can experience improved performance through SSCM by aligning various processes from customer and its upstream, and sharing relevant data for enhancing customer value proposition. SSCM integrates suppliers, manufacturing, warehouses, and stores so that merchandise is produced and distributed at the right quantities, to the right location, at the right time, in order to minimize system-wide costs while satisfying service level requirements. SSCM facilitates an integration of diverse resources and various processes to distribute goods and materials to final users by delivering value at every stage (Madhani, 2018a).

SSCM meets the issues of providing better value to customers by understanding customer interface from the perspectives of competitive priorities. SSCM is a customer-focused approach which extends the capabilities of supply chain networks by diverting the attention to the fulfillment of diverse needs of customers.

Customer-focused Supply Chain Strategy: An Integrative Framework

Customer-focused supply chain strategy has twin objectives: the objective of the customer satisfaction (to mobilize overall supply chain partners' effort to improve levels of service and enhance responsiveness) and objective of cost reduction (to link supply chain processes effectively to reduce variability and enhance revenue and generate a profit). As shown in Figure 1, an integrative framework combines two kinds of performance measures such as efficiency (focus on financial performance measures and underlying financial benefits) and effectiveness (focus on operational performance measures and underlying operational improvements) in evaluation. In general, increase in sales that result from higher customer satisfaction and cost reduction that result from the decreases in material, inventory and transportation expenses are examples of financial performance measures. Operational performance measures include improvement in cycle time, lead time, utilization rate and forecast accuracy, etc.

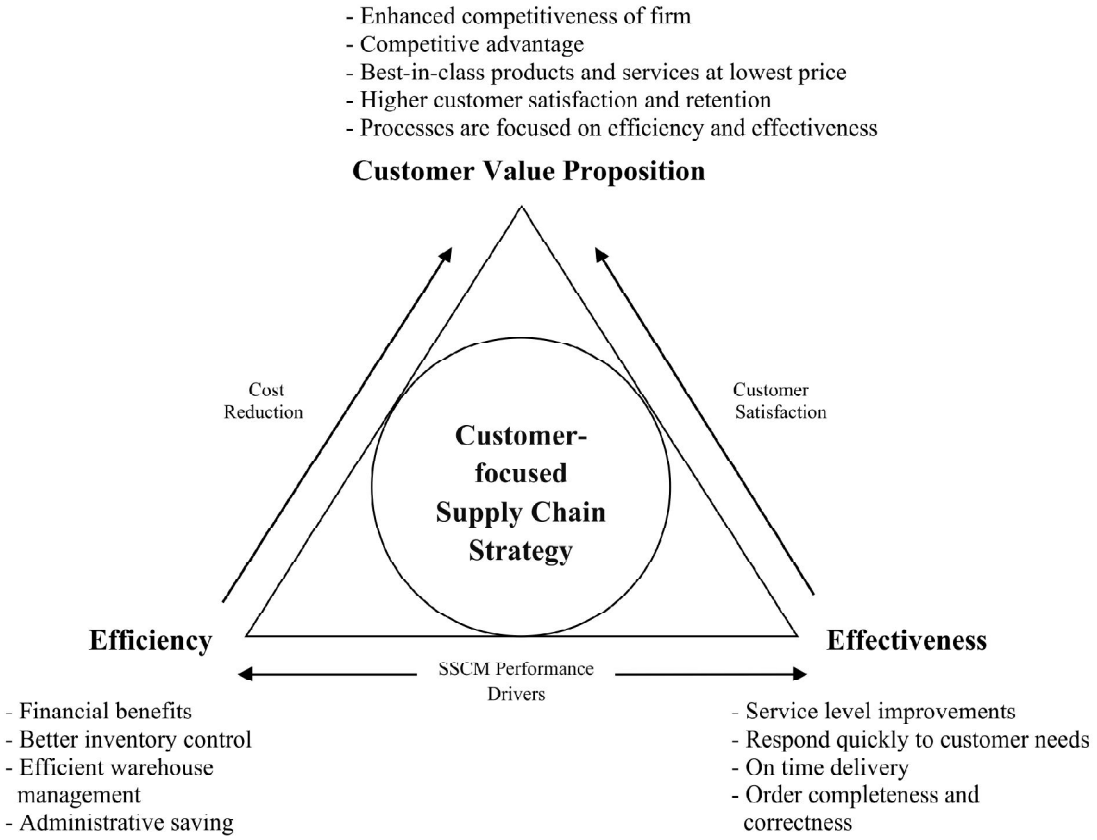


Figure 1: Customer-focused Supply Chain Strategy: An Integrative Framework

(Source: Framework developed by author)

An efficient and effective supply chain delivers quality products on time and in the right quantities, reduces order cycle time and provides mutual benefits for supply chain partners.

Customer-focused supply chain strategy is increasingly being recognized by organizations as a strategic choice for enhancing performance of organizations by decreasing inventories across various partners of supply chain and simultaneously delivers what the customer demands. Deployment of customer-focused supply chain strategy by a firm enhances the overall performance and hence subsequent competitiveness of the entire chain i.e. including firm as well as partners of supply chain. Customer-focused supply chain strategy strives to achieve the objectives of achieving higher efficiency and effectiveness with better integration. Hence such supply chains are capable of building competitive advantage by balancing higher efficiency requirements along with better demand management while managing supply chain risks (Madhani, 2019).

Table II: Customer-focused Supply Chain Strategy: Key Benefits

Sr. No.	Cost Reductions *(Cost Efficiency)*	Customer Satisfactions *(Customer Effectiveness)*
1	Reduced total inventory level (finished goods, raw material)	On time delivery
2	Low carrying cost of inventory	Order completeness
3	Reduced inventory obsolescence	Order correctness
4	Reduced third-party storage	Damage-free and defect-free delivery
5	Administrative saving: (order management, purchasing, production labor, and process cycle time, etc.)	High customer service level: (order fill rate, order cycle time, etc.)
6	Reduced cost of poor quality	Low stock out level
7	Higher efficiency of SCM	Higher effectiveness of SCM

(Source: Table Developed by Author)

Customer-focused Supply Chain Strategy: Developing 4Rs Model

A customer-focused supply chain strategy can improve the product planning process as well as distribution strategy and overall supply chain decision making related to it. It also boosts the organization's ability to introduce new products and enhancements of existing products in an effective and efficient manner. As customer data and information is shared in real-time with the supply chain partners, quality improvements and product innovation process accelerates while trimming down time to market. Such strategic approach for enhancing customers' overall satisfaction with firms' products or services, improves the profitability and efficiency of the entire enterprise in the long run, which includes all the supply chain partners (Madhani, 2018b).

The diverse goals of a customer-focused supply chain strategy are (1) to enhance responsiveness to demand fulfillment process by delivering the materials in correct sequence and shape i.e. at desired place and time by gathering and analyzing sales data. Supply chain responsiveness enables supply chain to initiate quick response on short-term, temporary or interim changes in supply/demand; (2) to enhance resiliency of supply chain to cater volatile demand changes by modifying supply chain design to accommodate market dynamics. Resilient supply chain quickly senses market changes to meet customers demand, withstands systemic discontinuities and adapts to a new risk environment; (3) to increase reliability by controlling probable causes of supply chain risks, design constraints and interruptions as a reliable supply chain performs its function as intended overcoming supply chain disruptions; and finally (4) to enhance realignment among supply chain partners by establishing incentives for them to improve performance of the entire chain as a realigned supply chain operates in an uninterrupted and seamless fashion. Figure 2, shows, a conceptual framework of a customer-focused supply chain strategy with all these competitive priorities of responsiveness, reliability, resiliency and realignment (Madhani, 2020a).

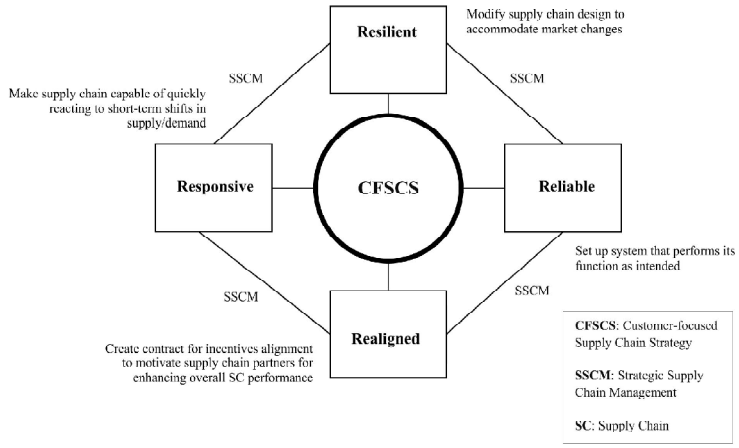


Figure 2: Customer-focused Supply Chain Strategy: 4Rs (Responsive, Resilient, Reliable and Realigned) Model

(Source: Model Developed by Author)

Responsiveness describes the ability to react quickly to sudden variations in demand or supply. With responsiveness, firms handle external disruptions smoothly by responding to short-term changes in demand or supply swiftly. Current scenarios in business world represent uncertain and highly turbulent environment caused by increased complexity, interdependency of organizations and volatile customer demand. To cope up with these challenging demands, firms should take more proactive steps which will delight customers and subsequently enhance their market competitiveness. In this context, a responsive supply chain is characterized by higher order of customer-focus, information-intensity, and flexibility to quickly meet changes in customer demand. Responding quickly is essential in current era of intensive competitiveness. Building a responsive supply chain is crucial in current business environment to create competitive advantage for the firms.

Resiliency : Resiliency describes the ability to adapt overtime as market structures and strategies evolve. It allows firms to alter design of supply chain according to changes in products, markets, strategies and technologies. The supply chain resilience is the ability of a system to return to its original state or move to a new, more desirable state after being disturbed (Christopher & Peck, 2004). Unless firms make their supply chain adaptable, it's very challenging for them to remain competitive in market place. Resiliency means how quickly the supply chain returns to the state before disruption levels. Organizations take actions across three priorities of respond, reset and renew to build supply chain resiliency. There is a structural shift in key business landscapes and hence supply chain needs to adapt it with higher resiliency. Such shift is caused by diverse market variables such as economic, social and political factors; shift in demographic trends and technology progress. Organizations can develop a resilient supply chain in three main ways: creating and increasing redundancies throughout the supply chain; building flexibility and changing the corporate culture (Sheffi, 2005). The supply chain resiliency requires three core enablers: people, process and technology. COVID-19 has demonstrated impact of supply chain vulnerabilities and hence, the importance of supply chain resiliency has never been more important.

Reliability : In supply chain performance management, reliability indicates 'correct' supply chain delivery performance in terms of product, place, time, packaging, quantity, and documentation, to the actual customer. Reliability represents the odds that any individual component or whole system carries out its assigned task as planned and hence it refers to the degree to which a supply chain yields consistent performance. Following are major operational issues that cause disruption in a typical supply chain:

1. Late delivery of materials from suppliers'.
2. Large waiting time for semi-finished products in process.
3. Insufficient stock levels in warehouse.
4. Failure in prediction of demands
5. Improper delivery to the customer.
6. Delayed transmission of orders to logistic companies.

Random supplies and disruptions have been important sources of uncertainty hampering the reliability of supply chains. The collapse of any entity or linkage in supply chain network would amplify overall supply chain costs and weaken the process of delivering value to customers. Instead of relying on traditional supply chain usually known as efficiency driven cost-focused supply chain, business firms today require reliable supply chain in addition to cost-focused supply chain. The main reason for this shift is the negative impact of supply uncertainty on supply chain networks.

Realignment : Realignment of supply chain refers to aligning the interests of supply chain partners continually by confirming that the goals of a supply chain partners are in harmony. Whilst making such realignment of the interests among various supply chain partners in the network, firms deliver optimal supply chain performance when they maintain their priorities and fulfill own goals. Realignment also helps supply chain partners resolve the issues between opportunity losses due to inadequate capacity for meeting unpredictably high demands and real losses due to surplus capacity for meeting forecasted demand that is not realized. It links demand management processes and supply chain operations for better prediction of demand so as to optimize inventory level, If this alignment between demand and supply fails, it results in either shortage of inventory (leads to lost sales) or surplus inventory (leads to profit loss caused by buffer stock). Real time analysis of product demand can accelerate development efforts for refinement of products and boosts as well as creates demand for new products. Realignment creates incentives for better performance. Incentive alignment is an important tool to facilitate collaboration between the common supply chain and each individual firm. Supply chain partners should provide more financial and non-financial incentives to promote supply chain realignment. The benefits of collaborative practices will only be fully realized when all parties in the supply chain cooperate closely with one another.

Conclusion : Customer-focuses supply chain strategy has a direct impact on top and bottom-line performance of a firm, as it enhances capabilities of the firm to adapt to the swiftly changing business environment, with even more focus on the customer. Firms that effectively develop customer-focuses supply chain strategy are differentiated from other firms in number of ways: increased revenue, elevated profit, and higher customer retention rate due to a better consumer experience. The dynamic capabilities of responsiveness; resiliency; reliability and realignment are important drivers of customer-focuses supply chain

strategy. Customer-focuses supply chain strategy helps organizations to anticipate demand of consumers precisely; cater such demand reliably and swiftly and enhance supply chain productivity. Hence, it ultimately leads to decrease in supply chain costs, faster market response and higher efficiency and effectiveness of supply chain. In addition to aligning organizational resources with customer value creation, it can directly improve forecasting, product planning and optimization. Greater insight into demand and delivery schedule will improve operational efficiencies and help organizations in creating the business value they seek. This research develops 4Rs (responsiveness; resiliency; reliability and realignment) model for successful deployment of a customer-focuses supply chain strategy.

REFERENCES

1. Christopher, M. & Peck, H. (2004). "Building the resilient supply chain". The International Journal of Logistics Management, 15(2), pp.1-13.
2. Madhani, P. M. (2020a). "Customer-focused supply chain strategy: developing 4Rs framework for enhancing competitive advantages". International Journal of Services and Operations Management , 36(4), pp. 505-530.
3. Madhani, P. M. (2020b). "Strategic supply chain management: a strategic approach for enhancing business performance". Materials Management Review, 16(9), pp. 27-29.
4. Madhani, P. M. (2019). "Building a customer-centric supply chain strategy: enhancing competitive advantages". The IUP Journal of Business Strategy, 16(2), pp. 28-42.
5. Madhani, P. M. (2018a). "Strategic supply chain management: developing conceptual framework and research propositions, Facets of Business Excellence in IT, Renato Pereira, Rajeev Sharma, Antonio Robalo, Sandeep Puri, Jayanthi Ranjan (eds.), pp. 389-399, Bloomsbury Prime.
6. Madhani, P. M. (2018b). "Building customer-focused supply chain strategy with 4R model". The Journal of Contemporary Management Research , 12(1), pp.14-32.
7. Madhani, P.M. (2017)."Customer-focused supply chain strategy: developing business value-added framework". The IUP Journal of Supply Chain Management, 14(4), pp. 7-22.
8. Sheffi, Y. (2005). "Building a resilient supply chain". Harvard Business Review, 1(8), pp.1-4.

●●●

Indian Institute of Materials Management

MISSION

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

OBJECTIVE

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

CODE OF ETHICS

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

CHALLENGES IN BUILDING WAREHOUSING COMPETITIVENESS

DR.C.SENGOTTUVELU, CPM (ISM-USA)
PROFESSOR, DEPT. OF PG MANAGEMENT STUDIES
ACHARYA BANGALORE B-SCHOOL, BENGALURU
sengottuvelu138@gmail.com

Abstract : Warehousing is growing and high demand Industry. This paper highlights the role and functions of a warehouse in supply chain management. The key drivers of competitiveness in general and specific to warehouse operations are discussed. Warehousing competitiveness includes lower costs, better protection and safety. Three main activities like inbound activities, process activities and outbound activities are highlighted. The author has used secondary data for analysis. The key enablers in building warehouse competitiveness like technology, size/ area of warehouse, infrastructure development, material handling system, standardization, mode of transportation, financing options, innovation and digitalization of warehouse. The challenges faced in this area are technology adoption, data availability and handling, removal of ledger system of entries., approval for land acquisition, conversion of land for warehouse operations, infrastructure development in terms road connectivity soft and hard infrastructure development, financing options and creating support systems. The author has concluded that automation, technology adoption, and supportive ecosystem are needed to build warehousing competitiveness.

Keywords: competitiveness, digitalization, enablers, standardization, technology adoption, warehousing operations

Introduction : The supply chain is the network of organizations that are involved, through upstream and downstream linkages, in the different processes and activities that produce value in the form of products and services in the hands of the ultimate consumer. Supply chain management can be defined as the management of upstream and downstream relationships with suppliers and customers to deliver superior customer value at less cost to the supply chain as a whole. Another definition for SCM is the process of planning, organizing, and controlling the flow of materials and services to end users/ customers. This integrated approach incorporates suppliers, supply management, integrated logistics and operations (Russell Morey, 1997). In supply chain management literature, some of the authors they argue that it should be really termed as 'demand chain management' to reflect the fact that the chain should be driven by the market, not by suppliers (Martin Christopher, 2013).

According to Aitken (1998), supply chain could more accurately be defined as: A network of connected and interdependent organizations mutually and co-operatively working together to control, manage and improve the flow of materials and information from suppliers to end users. Typically, each supply chain constitutes suppliers, manufacturing unit, warehouse, distribution centre's (DCs), retail outlets and customers / end users. Suppliers are placed in the upstream side and warehouses / DCs are placed in the downstream side of the supply chain. Every company will try to gain competitive advantage through products, processes, cost, quality, delivery, technology, flexibility, performance etc. A firm gains competitive e by performing these strategically important activities more cheaply or better than its competitors (Porter, 1985). Warehousing is placed in the downstream side enables the distribution function in the supply chain management.

Competitiveness : Competitiveness is the characteristic or ability of any organization to achieve its mission, more successfully than competing organizations goods. Markets tend to be balanced by the law of supply and demand. The need for global competitiveness is much important for any industry to sustain in this competitive world. It is the ability of a firm to offer, in relation to its competitors, products of higher value at equal or lower-cost and to build competitive positions that enable superior economic performance.

World Economic Forum (2018) has postulated the Global Competitiveness Index 4.0 framework seeks to capture, with new calculations that assess how future –proof different economies are. The key drivers are change management, adaptability and agility of all stakeholders, including the government. Table 1 shows the key drivers of competitiveness.

Table 1 Key drivers of competitiveness

Sl.No	Key drivers
1	Institutions
2	Infrastructure
3	ICT adoption
4	Macroeconomic stability
5	Health
6	Skills
7	Product market
8	Labor market
9	Financial system

10	Market size
11	Business dynamism
12	Innovation capability

(Source: World Economic Forum, 2018)

Global Competiveness Index is a composite score including 98 indicators. USA stands at top with 85.6 points out of 100. It was followed by Singapore, Germany, Switzerland and Japan. India stands at 58 ranks among 139 countries in 2018. This has further slipped to 68th rank in 2020.

Warehousing Operations : The warehouse is a point in the logistics system where a firm stores or holds raw materials, semi- finished goods, or finished goods for varying periods of time. The warehouse serves several value-adding roles in a logistics system: transportation consolidation, product mixing, service, contingency protection and smoothing (Coyle, Bardi & Langley Jr, 1996).

The United States spent 9% of the nation's gross domestic product (GDP). Warehousing cost amounted to 1% of GDP. In a macroeconomic sense, warehousing performs a very necessary function. It creates time utility for raw materials, industrial goods, and finished products. The proximity of market –oriented warehousing to customer allows a firm to serve the customer with shorter lead times. In other words, by using warehouses, companies can make goods available **when** and **where** customers demand them. This warehousing function continues to be increasingly important as companies and industries use customer service as a dynamic, value-adding competitive tool.

Warehousing decisions are strategic in nature, which involves ownership, private vs public, design and layout, centralized vs decentralized, number, location, size, items stocked and employee safety. The three basic components of a warehouse are space, equipment, and people. Space allows for the storage of goods when demand and supply are unequal. Space affects not only warehousing decisions but also the design of a logistics. Warehouse equipment includes materials handling devices, storage e racks, dock, conveyor, automated storage & retrieval system (AS&RS), sensor and safety equipments. People are the most critical component of a warehouse. Space and equipment mean nothing without competent people. Basic functions of a warehouse include movement, storage, and information transfer. Four distinct areas of warehouse functions are: receiving inbound goods, transferring goods, order processing and shipping goods (Bloomberg, LeMay & Hanna, 2002). Figure 1 shows the key functions of a warehouse.

Figure 1 Key functions of a warehouse.

The goal of warehouse operations is to satisfy customers' needs and requirements while utilizing space, equipment and labor effectively. The goods must be accessible and protected (Rich StinchComb, University of Oklahoma). Warehousing is a set of activities that are involved in receiving and storing of goods and preparing them for reshipment (Robert Hughes, 2019). Warehousing operations involve three major activities. Table 2 shows major activities in a warehouse. Warehousing competitiveness includes lower costs, better protection and safety (Elliot Maras, 2015).

Table 2 Major activity in a warehouse

Sl. No	Main Activity	Details
1	Inbound Activities	Receiving & Put Away
2	Process Activities	Order processing, Replenishment & Stock rotation
3	Outbound Activities	Packing & Shipping

Enablers in Building Warehousing Competitiveness : Warehousing competitiveness means cost control (lower costs) and quality level (high quality of service). The main enablers in building warehousing competitiveness are: standardization, technology adoption, infrastructure size, material handling systems deployed, innovation, digitalization of warehouse operations and financing options. Table 3 shows the key enablers in Building Warehousing Competitiveness.

Table 3 Key enablers in Building Warehousing Competitiveness.

Sl.No	Enablers	Details
1	Technology	Software, Hardware, People and Standard Operating Procedure (SOP)
2	Size / Area in Square feet	Grade A, Grade B, In city, Tier 1/Tier 2
3	Infrastructure Development	Acquisition of land, Conversion of land for warehouse operations and Incentive system.
4	Materials Handling Systems (MHS)	Automated, semi-automated, Drones operated, conveyor belt coupled with sensor technology, AS&RS etc
5	Standardization	Pallets, packaging, containerization etc
6	Mode of transportation	Inland waterways, ' Roll Out, Roll In, Multimodal etc
7	Financing options	Construction finance, lease / risk free, debt capital,

		borrowings from NDFC, Banks etc.
8	Digitalization Warehouse	EDI, QR Code, Bar Code, Tracking Consignments, Invoice & QR Code matching, change management, and skill development
9	Innovation	Creativity and handling disruptive technologies.

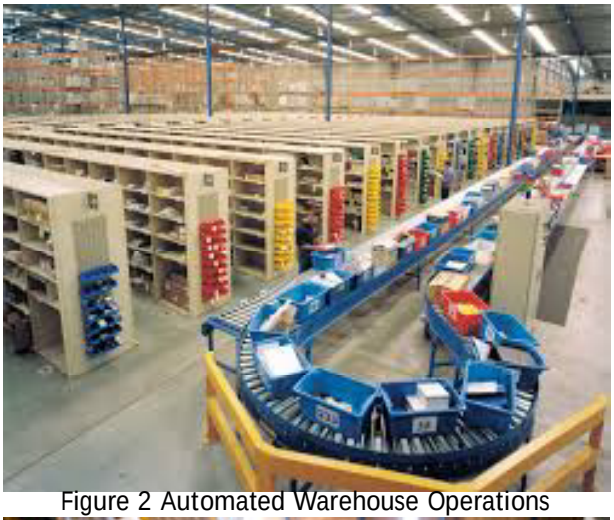


Figure 2 Automated Warehouse Operations

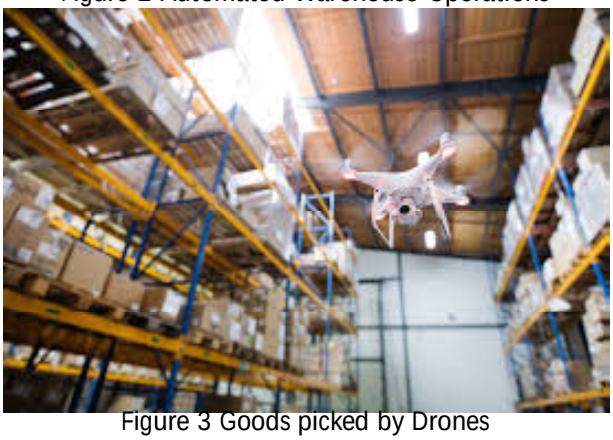


Figure 3 Goods picked by Drones

Challenges in Building Warehouse Competitiveness

Building Warehouse Competitiveness brings lots of challenges to the companies. The important challenges are:

i. Technology adoption, data availability and handling, removal of Ledger System of entries.

ii. Approval for land acquisition, conversion of land for warehouse operations.

iii. Infrastructure development in terms road connectivity soft and hard infrastructure development.

iv. Financing options

v. Creating support systems

Conclusion

In this paper the role of warehouse in a supply chain has been discussed. The need for global competitiveness is much important for any industry to sustain in this competitive world. It is the ability of a firm to offer, in relation to its competitors, products of higher value at equal or lower-cost and to build competitive positions that enable superior economic performance.

Warehousing is a high demand industry. This sector has performed a business of 75 billion USD in the current year. The key drivers of competitiveness as postulated by World Economic Forum (WEF) 2018 were also discussed. Competitiveness can be created by cost control (lowest cost) and improving quality level (high quality of service).

The key enablers and challenges are also discussed. By making an operation more efficient, automation can allow a warehouse to support faster growth, increase productivity, reduce labor, maximize space, improve sustainability and meet stricter government product tracking rules. Technology should be used to reduce the number of touches and steps within the warehouse process. Automation has provided an easier method of getting our products to our customers. Warehousing can also be competitive advantage to the business. The ecosystem should be conducive to the business and economic growth.

References

1. Aitken J (1998). Supply Chain Integration within the Context of a Supplier Association, Cranefield University, Ph.D. Thesis, England.

2. David J.Bloomberg, Stephen LeMay & Joe.B.Hanna (2002). Logistics. Indian Reprint Prentice-Hall of India Private Limited, New Delhi.

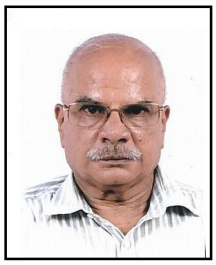
3. Elliot Maras (2015). The Warehouse As A Competitive Advantage accessed from www.foodlogistics.com on October 05, 2020.

4. John J.Coyle, Edward J.Bardi & C.John Langley Jr (1996). The Management of Business Logistics, 6th Edition, West Publishing Company, USA.

5. Martin Christopher (2013). Logistics and Supply Chain Management, 5th Edition, Pearson Education Asia, Delhi.

6. Porter, M.E (1985). Competitive Advantage, the Free Press, USA.

●●●



CREATING A SUPPLY CHAIN CONTROL TOWER IN THE HIGH TECH INDUSTRY

PALLIKKARA VISWANATHAN, N.C. MEMBER OF IIMM BANGALORE BRANCH vid_shy@yahoo.com

Control Tower acts as a centralized hub that uses real-time, data from the organization, existing, integrated data, management, and transaction system, to integrate process tools, access to end-to-end supply chain, to drive business in supply chain.

Supply chain are contained with various issues, that complement the lack of horizontal integration, inadequate inventory, visibility, due to integrated organization, structure, also have the inability to command, align supply chain, demand limited agility, with an ability to act as an alert in supply chain. Supply chain can also lack the capacity, to locate inventory, cross-docking facilities, on shipment of inventory directly as per the requirement of the customer or consumer with Control Tower concluding the application in supply chain.

Supply chain with inadequate analytic capabilities, will find it difficult to forecast accuracy, inability to aggregate a good meaningful data, with the difficult find a finite proper cost, also finding the implication for business decisions, with the assistance of Control Tower policy in supply chain.

Supply chain Control Tower is not a physical product, it is a Cloud based solution, that normally acts as a data collection, distribution centre, in supply chain, it does not neither control logistic operation, does it manage production in supply chain, operation, storage of any items, nor automatically take over the order process, it as technology to improve its capability, as Control Tower provides the visibility, the enhancement between various continents, to bring in improvement in business, on the various modes of transportation in supply chain.

Supply chain as a Data collection centre, organizes Data from Control Tower, distributes within the organization, in a consistent format, capturing analytic data in time, allowing logistic providers to improve the performances in supply chain, being flexible to consumer, customer demands, ultimately improve supply chain efficiency.

Supply chain Control Tower capability in any High-Tech industry is the control of service providers, to become more cautious, when the requirement of customer service, is thereby achieved by strengthening the customers loyalty in supply chain.

Supply chain to achieve a better technology from the Control Tower solution, achieve an end-to-end visibility, should also check the capability enabling to handle the different usage, flow in supply chain activities.

Supply chain having better Control Tower, command at the Centre (warehouse) with adequate trained manpower, experts, commanding the various designated computerized establishment, on displaying proper service, requests, news, mapping, titles, weather, along with other information's that are normally keyed into the machine in supply chain. Destination in supply chain from the Control Tower, command the good part of the manpower, monitor the services, requirements from customers, through phone, mobiles, short message service, artificial intelligence, machine learning, through various centre's (warehouses) across the continent, as per requirement, then able to dispatch the manpower for the needs of the customers, with real-time supply chain management. Supply chain visibility that play an important role, in supply chain, play an important role in distributing spare parts, components, which respond to customers request in supply chain.

Supply chain Control Tower bring together the capabilities, required to manage, complex situations from end-to-end, supply chain, which helps to bring the volatility, complexity, uncertainty, in supply chain, which enable integration, process across various centre's, where work is in progress, carrying a large amount of data, process to support strategic decisions, to supplement the making of supply chain.

Supply chain Control Tower controlling mainly targets, the improvement, costs, inventory, quality, customer service, asset utilization. Supply chain Control tower is also supported by the integrated, with good framework, of real-time, visibility, the root cause, analytics, enabling rapid response, with continuous improvement of the execution of process in supply chain.

Supply chain technology are also a support to Control Tower, includes Enterprise Resource Planning, Planning Optimizing, Transportation, Warehouse management, with the available data, regarding the operation, with end-to-end facilities, in supply chain. Technology with supply chain, Cloud based technology, connected with end-to-end, in reducing cost, time-to-value, with making a rating in supply chain. Supply chain analytics, are enabling the organization, to make use of the enormous amount data collected, being connected to supply chain.

Supply chain perceptive is rather robust in digital transformation to support Control Tower, involving end-to-end visibility in supply chain. Supply chain inventory is the visibility needed to keep specific type of product as a stock keeping unit, being produced by manufactures, stored in warehouse centre's or for transit in supply chain.

Supply chain freight, distribution managed is a management from the point of origin, (warehouse) centre's distributed to the distributor either physically, or through transportation, from the location for consumption by customer, consumers in supply chain,

while Control Tower are not situated in one location, nor are they confined to a single location, nor are they a part of the supply chain network, in supply chain, they are to focus on the combine gathering, storing, real-time, from the organization point of view, with third party logistics provider, as the Control Tower offers a Single point of contract for all data, increasing the supply chain, by using artificial intelligence to real time analytics in supply chain.

Supply chain freight, transportation, centre's (warehouse) distribution, with Control Tower, process, are informed of the diversion, tracking, tracing, alerts, delivery schedule, for freight distribution, in supply chain.

Supply chain Control Towers can instantly segregate the data inventory, products warehouse centre's guide for better improvements, mitigate exceptions, with efficiency, traditional freight distribution management, with best infrastructure in supply chain.

Supply chain Control Towers can improve the capabilities in supply chain, management system considering the network as the best solution, in supply chain, with challenges in Control Tower, in every organizations, solution, network, complex supply problems, solutions, with the help of third part logistics network, in which Control Tower brings in multiple benefits in supply chain.

Control Tower in supply chain access to Big Data, real-time analysis, leverage the power, for data on an end-to-end, in supply chain, to provide the organization, for better visibility, supply chain risk, cost reduction, which are normally the exceptions in supply chain, normally encouraging collaboration, in supply chain, to resolve supply chain, distribution, in a real-time, in prediction of data, for more of an accurate forecasting, decisions mainly, tracking, consumption, speed, location, delivery time, transportation in supply chain.

Supply chain can optimize, making organization more agile, as it can respond rapidly to market change, customer expectation, as Big Data gathered, analytics by Control Tower, that result in cost reduction in transportation, improved cost in supply chain, performance, with more efficient, cost effective process, with greater chances, for the satisfaction of the customers, with the repeat in business, in supply chain.

Supply chain can benefit by the Control Tower in the complex changes in Human assets to manually controlled, compute information bring improvements, with exceptions in supply chain, relying on Human assets, to complete the task of Control Tower, which can be sometimes considered costly, time consuming, in-efficient with limited terms, conditions, to collect data, with Human interpretation, having greater capability in supply chain.

Supply chain driven by artificial intelligence system Control Tower can instantly integrate data, also connect expand the product analytics, with real-time, data processing as this capability provide better facilities, deacons making better process in supply chain, bring down cost reductions, efficient operations in supply chain.

Supply chain Big Data can provide Control Tower stock-in-trade covering all aspects of transportation, process, on-time delivery, inventory levels, maintenance, in supply chain, with exceptions disruption assisting machine learning process, Control Tower information advices, in supply throughout the supply chain, with priority enhanced with visibility, advanced analytics in supply chain.

In supply chain Control Tower is a shared performer, with the capability of monitoring the performance, with the capability of monitoring, directing activities from end-to-end in supply chain, with the immense collaboration with organizations, aligned, to be agile, demand driven with Control Tower as a Hub or a Centre, using the centralized time from the organization, existing, integrated data management, transactional system, to integrate the process across the end-to-end in supply chain. Control Tower is also a target for improvement in various costs, inventory, quality quantity, customer, to continuous improvement, execution process in supply chain.

Supply chain Control Tower implementation is the source in organization to move toward demand driven end-to-end, value network, and visibility to the events, with minimum disruption on a day-to-day operations in supply chain. Control Tower integrates process information technology, driving the functions, to a excellent well balanced in supply chain. Control Tower enables cross-functional, excellence, development in analytic functions, management functions for key performance indicator in supply chain. Control Tower in the synchronized network achieves the demand driven value network, on a continuous improvement assessment of the value at the actively based level across the organization in supply chain.

In supply chain Control Tower is considered as a strategic tool, provides the technology, talent, processing short time, long time, decisions, capturing supply chain data, Control Tower with different system, integrated, information, collected from various points, as they are made available at Centralized location, monitored, analyzed, used as a decision, for supply chain operations, as Control Towers offers prediction, as well as prescription to support for decisions, making through timely use of analytics.

Control Towers in Retail operation are able to understand the strategic challenges, benefits, of creating, visibility in supply chain. Supply chain complex retail system of determining the delivery dates, inventory movement management, routing of orders, customer's requirement, so as to enable the customer obtain the products as per the requirement, also meet the deadline as per customers requirement, in supply chain. Control Tower has the capability to substantiate, the simulation of multiple orders, for the retail organization, to deliver the products on time, as centre is able to compute the orders, examine each order, individually, identify, process, if any delay caused due to reasons in supply chain. Supply chain delivery if not completed, then the reasons can be ascertained, whether due to shortage of manpower, subsequently the order is relinquished with additional manpower to deliver the products, also able to assign orders not met, the number of orders left to be completed can also be ascertained in supply chain.

●●●

MAKING THINGS BETTER THROUGH LEAN- HOW THE WORLD IS MAKING- THE BATON HANDING OVER EFFECTIVELY BETWEEN SUPPLIERS AND CUSTOMERS.

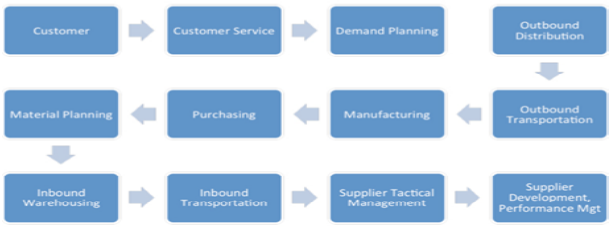
MD.ZIAUDDIN
CHAIRMAN & COURSE DIRECTOR IIMM HYDERABAD BRANCH
ziauddin1948md@gmail.com

Workable TIPS for " The Baton" handingover between Suppliers and Customers/End Users

INTRODUCTION: In all SCM and Logistics trends, let it be Internal, Global, the success of its operations predominantly stands in between- the Suppliers and Customers and vice versa. For more functional understanding, here, the subject is dealt in a very separate way ie passing on Baton successfully. In a relay race, the winning team is not always the one that runs fast from leg to leg, but it is the one that runs fastest, start to finish without dropping the baton. Likewise in business, the winning supply chain is not the one with the most efficient operational silos, but it is the one that is most efficient end to end, especially at the handoffs.

In other words, you can have four incredible team mates, running a relay race, but if they don't get the handoffs right, they don't win. In once own supply chain, the handoffs also are where you're most likely to drop the "baton." Handoffs occur where supplier processes connect with yours, where your processes connect with customers, where logistics process connect with transporters, where wholesalers connect with retailers, etc., etc., etc., Processes at handoffs often lack visibility, mutual understanding/ co-operation and discipline. The Scope of End to End Supply Chain: This involves almost twelve movements as illustrated below-

The Scope of End to End Supply Chain



For instance, a retailer focused on lowering transportation costs may order in large quantities. So the handoff between the retailer and supplier is at the transportation function, which will be teeming with waste because the supplier is building in batches to meet truckload quantities although such quantities have nothing to do with actual customer demand.

Another example is a manufacturer who will not share production forecasts or lacks a disciplined production schedule. Suppliers must guess what to build, which creates a lot of waste when they guess wrong. Rethinking Supply Chains with inter-related / intra related functions- Need for guiding principles/systems/ technologies.

Guiding Principles for Rethinking Supply Chains : Today, advance planning and forward thinking business organizations are now concentrating on the total cost of fulfillment, end-to-end, because they are recognizing that wastes don't exist so much inside the functions of the supply chain but rather at the interfaces where each node connects with the next node. Understanding this concept, Leaders are, at first, looking at their supply chains from the consumption of their product by customers all the way upstream through distribution, through manufacturing, and through inbound logistics to their supply base.

To achieve, the determined targets, functional improved efficiency, companies are doing the end-to-end analysis of their supply chains, they begin to question off-shoring strategies, but the goal is not to offshore or near shore or repatriate. The goal is to have the most efficient end-to-end supply chain by adopting good ways and means with visibility. How to do all these? All SCM domains got up and started to search for Lean principles. Because supply chains are so long and dynamic, Lean experts have identified the following important lean principles to guide to analyze and improve handoffs with suppliers and customers:

1. Waste elimination: Eliminate the following seven types of waste in the fulfillment stream so that only value remains:
   - System complexity: elaborate scheduling systems and work around disconnects between the formal schedule and actual needs

- Lead time: taking too much time from one step to the next.
- Transport: excessive conveyance among facilities and companies
- Space: excessive space for storage is waste
- Inventory: at any point in the fulfillment stream
- Wasted human effort: rework, confusion, and excess movements
- Packaging: the wrong types of goods in the wrong quantities

2. Customer consumption visibility: Make customer consumption visible to all members of the fulfillment stream so that it becomes practically easy for every participant to plan work ahead based on the pull of customer demand.
3. Reducing logistics lead time: Reduce inbound and outbound logistics lead time to get orders to the customer faster.
4. Level flow determination: To create level flow, enabling goods and information move in a predictable, consistent, and uninterrupted manner based on actual demand.
5. Use of pull systems: When level flow is not possible, use pull systems in which each downstream activity signals its need to the next upstream activity.
6. Meeting customer consumption to his full need: Increase velocity and reduce variation so you can more easily adjust delivery to meet actual customer consumption.
7. Process discipline: Collaborate and use process discipline so that all participants in the value chain identify problems for root cause analysis.
8. Total cost fulfillment: Focus on total cost of fulfillment. All care and attention is needed not to make decisions that benefit one part of the supply chain at the expense of another.

The lean supply chain relentlessly focuses on lead-time reduction by eliminating all non-value creating activities (waste). This is accomplished through rigorous process discipline, inventory reduction, and first-time quality.

AND, Following depicts the main things together with Strategic and Tactical Rights

So, if, company has done lean improvements within four walls and is wondering why it cannot get more improvements, the answer is that the greatest opportunities are now in the supply chain – where the baton gets dropped.-and it should not happen for smooth flow of Supply Chains and handoff to go well.

Ref: Internet research blobs/papers/networking discussions .

●●●

COMMODITY INDEX

Commodities	Days's Index	Prev. Index	Week Ago	Month Ago
Index	3072.0	3069.2	3048.8	3050.6
Bullion	7634.9	7636.0	7456.2	7328.2
Cement	2397.3	2397.3	2397.3	2397.3
Chemicals	1587.0	1587.0	1587.0	1469.4
Edible Oil	2234.3	2235.6	2200.3	2235.2
Foodgrains	2294.2	2288.1	2283.5	2268.5
Fuel	2891.6	2891.6	2891.6	2911.4
Indl Metals	1919.1	1919.1	1919.1	1919.1
Other Agricom	2248.9	2248.9	2250.9	2356.9
Plastics	1581.6	1581.6	1581.6	1581.6

Source: ETIG Database dated 23rd October, 2020

DR. HARSH VARDHAN RELEASES NATIONAL CLINICAL MANAGEMENT PROTOCOL BASED ON AYURVEDA AND YOGA FOR MANAGEMENT OF COVID-19

"Unanimous passage of 'The National Commission for Indian System of Medicine Bill' and the accordance of Institute of National Importance to Ayurveda Institute Cluster at Jamnagar indicate Consensus in reviving Traditional System of Medicine"

SUMMARY

- India is one of the pioneers in the alternative system of medicine and has an unparalleled heritage represented by its ancient and age-old traditional treatment methods, such as Ayurveda, Yoga, Unani, Siddha and Homoeopathy [1]
- The Ministry of AYUSH was formed in November 2014, to overlook the optimal development and proliferation of the AYUSH systems of health care [2]
- Over USD 200 Bn to be spent on medical infrastructure by 2024. The country has developed vast AYUSH infrastructure comprising of 13.8 lakh registered practitioners, 3986 Hospitals and 27,199 Dispensaries [3]

Dr. Harsh Vardhan, Union Minister for Health & Family Welfare today released National Clinical Management Protocol based on Ayurveda and Yoga for management of COVID-19 in the virtual presence of Sh. Shripad Yesso Naik, Minister of State for AYUSH (Independent Charge). Dr. Rajiv Kumar, Vice Chairman, NITI Aayog and Dr. V. K. Paul, Member (Health), NITI Aayog also joined virtually.

An Interdisciplinary Committee for integration of Ayurveda and Yoga Interventions in the 'National Clinical Management Protocol: COVID-19', chaired by Dr V M Katoch, former Director General ICMR and composed of a group of experts with domain knowledge had formulated the report and submitted recommendations based on acceptable experimental and clinical data. These findings, indicating potential benefits and safety of the medicines, were presented before the National Task Force on COVID 19 and Joint Monitoring Group and subsequently developed into the protocol on the recommendations of NITI Aayog.

Based on their recommendations, the Ministry of AYUSH constituted a National Task Force which, in consensus from expert committees from All India Institute of Ayurveda (AIIA), Delhi, Institute of Post Graduate Training and Research in Ayurved (IPGTRA), Jamnagar, and National Institute of Ayurveda (NIA), Jaipur, Central Council for Research in Ayurvedic Sciences (CCRAS), Central Council for Research in Yoga and Naturopathy (CCRYN) and other national research organizations, prepared the National Clinical Management Protocol based on Ayurveda & Yoga for management of COVID-19.

Hailing the achievement on the part of Ministry of AYUSH that the advisories for boosting the immunity of the people have become highly popular, Dr. Harsh Vardhan noted, "Prime Minister Sh. Narendra Modi ji has emphasized following AYUSH advisories for management of COVID-19 crisis. This protocol dealing with preventive and prophylactic measures is a significant step in not only in management of COVID but also in making traditional knowledge relevant to solving problems of the modern time". He expressed satisfaction with the inclusion of easily available and common Ayurvedic herbs and formulations like Guduchi, Ashwagandha, AYUSH-64 in treating mild and asymptomatic COVID cases.

Dr. Harsh Vardhan spoke of the role of Ayurveda in the colonial struggle when Sh. Harvilas Sharda had compiled a section on Hindu medicine to argue for India's contribution to the World, "Ayurveda can be traced to the Vedic age as a subtext of Atharva Veda. The science travelled to Persia and from there to Europe and had a significant impact in the foundations of Modern medicine". "Unfortunately, Ayurveda did not receive much attention after independence until Prime Minister Sh. Narendra Modi ji took up this cause with the importance it deserves", he added.

He detailed the efforts of the government in promotion of AYUSH with 'The National Commission for Indian System of Medicine Bill, 2020' and the bill to confer the status of Institute of National Importance on the Cluster of Ayurveda Institutes at

Jamnagar. "Their unanimous passage indicates the consensus in reviving traditional systems of medicine," he said.

Health Secretary Sh. Rajesh Bhushan, Secretary (AYUSH) Vaidya Rajesh Katoch and other senior officials of AYUSH Ministry were also present at the event.

REASONS TO INVEST

- The Indian systems of medicine and homoeopathy particularly Ayurveda and Yoga are widely recognised for their holistic approach to health and capability for meeting emerging health challenges. These systems are playing an important role in achieving the national health outcome goals of reducing Maternal Mortality Rate (MMR), Infant Mortality Rate (IMR), malnutrition and anaemia
- The demand for Ayurveda, Yoga, Naturopathy, Unani, Siddha and Homoeopathy (AYUSH) and herbal products is surging in India and abroad
- India is the second largest exporter of AYUSH and herbal products. Investors and corporate houses are increasingly investing in AYUSH sector
- Ayurveda has a unique therapy called Panchkarma which is beneficial for preventive/ promotive health care and for treatment of many chronic lifestyle disorders
- Yoga is widely recognised and practiced in Asian as well as western countries. Several yoga centres/studios have been established across the globe during the last 4-5 decades
- Yoga is a drugless system and can be applied as an independent modality or as add-on therapy with other systems

GROWTH DRIVERS

- The Ministry of Tourism has taken steps to promote medical tourism in India. A few examples are [9]:
  - In 2015, the National Medical and Wellness Tourism Promotion Board was established to provide a dedicated framework for the promotion of medical and wellness tourism (including AYUSH). The ministry has also collaborated with British Broadcast Corporation (BBC) to create a short film on medical tourism for promotional purposes.
  - During FY 18 (till December 2017), GoI provided financial assistance of USD 8,848 to NABH-approved wellness centers, under its Market Development Assistance (MDA) Scheme.
- Department of Commerce and Services Export Promotion Council have launched a healthcare portal, www.indiahealthcaretourism.com, as a single source platform providing comprehensive information to medical travellers on the top healthcare institutions in the country in various languages [10]
- The e-tourist visa regime has been expanded to include medical visits as well. Medical and medical attendant visa has been introduced to ease the travel process of medical tourists. The maximum duration of stay in India under the e-Medical visa is a longer duration of six months [11]
- The Government of India has set the Ministry of AYUSH (Ayurveda, Yoga and Naturopathy, Unani, Siddha and Homoeopathy) with the aim of providing a boost to these ancient healthcare systems with a targeted thrust [12]
  - The Ministry of AYUSH provides ample opportunities for investment, education and research, health services and training in the AYUSH sector
  - The Ministry has a 'Central Sector Scheme for Promotion of International Co-operation' which aims to promote global awareness of AYUSH systems of medicine, facilitate international promotion, development and recognition of Ayurveda, Yoga, Naturopathy, Unani, Siddha and Homoeopathy. The scheme also aims to support international exchange of experts and information for the cause of AYUSH systems, to give a boost to AYUSH products in the international market, to establish AYUSH academic chairs in foreign countries
- The Government of India signed a Memorandum of Understanding (MoU) with Sao Tome and Principe for Cooperation in the field of Traditional Systems of Medicine and Homoeopathy. The MoU will enhance bilateral cooperation between the two countries in the field of Traditional Systems of Medicine [13]
- The Government of India has signed MoUs with the governments of countries such as Malaysia, Trinidad and Tobago, Hungry, Bangladesh, Nepal, Mauritius, Mongolia, Iran for cooperation in traditional medicine [14]

- In various locations in India, the Indian systems of medicine and homoeopathy continue to be widely used due to their accessibility and sometimes because they offer the only kind of medicine within the physical and financial reach of the patient [15]
- The Prime Minister has launched National Digital Health Mission, it is a digital health ecosystem wherein every Indian citizen will have unique health IDs, digitised health records with identifiers for doctors and health facilities. The Mission is expected to bring efficiency and transparency in healthcare services in the country.[20]

FDI POLICY

- 100% FDI is permitted in the AYUSH sector

POLICY

SECTOR POLICY

AYUSHMAN BHARAT (PRADHAN MANTRI JAN AROGYA YOJANA (PM-JAY))

Ayushman Bharat, a flagship scheme of Goverment of India was launched as recommended by the National Health Policy 2017, to achieve the vision of Universal Health Coverage (UHC). This initiative has been designed on the lines as to meet SDG and its underlining commitment, which is "leave no one behind".

Ayushman Bharat is an attempt to move from sectoral and segmented approach of health service delivery to a comprehensive need-based health care service. Ayushman Bharat aims to undertake path breaking interventions to holistically address health (covering prevention, promotion and ambulatory care), at primary, secondary and tertiary level. For more details, Refer to Ayushman Bharat.

NATIONAL AYUSH MISSION

The National Ayush Mission (NAM) aims to promote Ayurveda, Siddha and Unani and Homoeopathy drugs in the country. It also aims to make provisions for the sustainable availability of Ayush, Siddha, Unani and Homoeopathy raw materials [17]

The objectives of NAM are as follows [18]:

1. Provide cost effective AYUSH services with universal access by upgrading AYUSH hospitals and dispensaries, co-location of AYUSH facilities at primary health centres (PHCs), community health centres (CHCs) and district hospitals (DHs).
2. To strengthen institutional capacity at the state level by upgrading AYUSH educational institutions, State government Ayurveda, Siddha and Unani and Homoeopathy pharmacies, drug testing laboratories and Ayurveda, Siddha and Unani and Homoeopathy enforcement mechanism.
3. Support cultivation of medical plants by adopting Good Agricultural Practices (GAP) to provide sustained supply of quality raw materials and support certification mechanism for quality standards, good agricultural/collection/storage practices.

For more information, please refer to National Ayush Mission.

FINANCIAL SUPPORT

Key Highlights of Budget 2020-21:

- The total budget allocation towards the Ministry of AYUSH stands at USD 9.1 bn

INVESTMENT OPPORTUNITIES

Ayurveda drug manufacturing (nutraceuticals, food supplements, cosmetics and rejuvenates).

- Setting up of specialised treatment centres.
- Medical tourism for curative and rejuvenation treatments.
- Objectives of National AYUSH Mission:
    - Provide cost effective AYUSH services with universal access by upgrading AYUSH hospitals and dispensaries, co-location of AYUSH facilities at primary health centres (PHCs), community health centres (CHCs) and district hospitals (DHs).
    - Strengthen institutional capacity at the state level by upgrading AYUSH educational institutions, State government Ayurveda, Siddha and Unani and Homoeopathy pharmacies, drug testing laboratories and Ayurveda, Siddha and Unani and Homoeopathy enforcement mechanism.
    - Support cultivation of medical plants by adopting Good Agricultural Practices (GAP) to provide sustained supply of quality raw materials and support certification mechanism for quality standards, good agricultural/collection/storage practices

Source: makeinindia.com

●●●

SUPPLY CHAIN IN INDIA: THEN AND NOW

The supply chain industry has become the backbone of modern-day businesses. Traditional and linear value chain models and archaic practices in the industry are fast changing. They are making way for revolutionary and cutting-edge new solutions and models that are infusing great efficiency and cost-effectiveness and driving tremendous value for businesses. Several factors are contributing to these revolutionary changes in the supply chain industry.

We interviewed one of the SCL mentors, Mr. P. Sreevathsa – Founder and CEO of Servify with over 20 years of experience in CX, technology and management – to take a closer look at the impact of each of these factors on the supply chain scenario in India in the past 10 years. Here are the key takeaways from the interview.

Impact of regulatory changes in India on the supply chain scenario

One of the major regulatory changes affecting the supply chain space in India has been the introduction of GST which standardises the tax regime across the country. These variations in tax rate (especially VAT and octroi) across states which led to widespread corruption and inefficiencies in the system, were eliminated as a result of such standardisation.

"The tax reforms have given the supply chain industry a big boost and have significantly impacted the supply chain on an end-to-end basis. They have brought about greater transparency and therefore, simplicity in the supply chain process-to-end basis. They have brought about greater transparency and therefore, simplicity in the supply chain process."

They have enabled businesses to come closer to customers and ensure seamless experiences. For instance, all warehousing distribution for Mumbai would happen in Bhiwandi, Maharashtra in the pre-GST era as it is outside the city limits and so, saved octroi. With the tax reforms, businesses can maintain warehouses even within their own offices and better track them.

Changes in the service provider's offerings and their impact on the supply chain scenario

The level of corruption and under-the-table dealings in this space in the pre-GST era meant no transparency in the process and made the costs unpredictable. For instance, octroi collection in Maharashtra every quarter was about Rs. 24,000 crores. However, this was estimated to be only around 25% of the actual-ideal collection. The remaining Rs. 75,000 crores were grey transactions happening across the value chain. This sort of corruption led to many so-called service providers to come into the system as consultants who would bribe on behalf of the large corporates.

"Standardisation in the tax regime removed these multiple layers of corruption and eliminated these middlemen in the garb of tax consultants, octroi consultants, recovery consultants, etc."

The result has been large scale optimisation and higher predictability for businesses. Core service providers such as warehousing parties, supply chain branding partners, distribution company, etc. have been able to flourish.

The changing corporate supply chain and its holistic impact on the current supply chain scenario

Corporate players understand that they need to focus on the core of their business. As a result, the need for supply chain services and solutions by large corporates have reduced significantly except in cases where physical products are involved. For example, a large software company like Infosys does not need supply chain services but a pharma company like Sun Pharma still has a greater need for supply chain services even though it is not their core business activity; their core business is R&D and development of drugs while supply chain is something they need to run their business.

The influx of large corporate players, 3PL & 4PL players and several startups in the supply chain space that operate across the spectrum right from planning and design to warehousing, distribution, etc. and the significant standardisations over the last 10 years have enabled such companies (like Sun Pharma) to focus on their core business rather than getting into the supply chain and leverage the efficiency of these services.

"The fast-evolving business models which have shifted from fixed pay for services to pay-as-you-go models which have enabled corporate players to leverage the economies of scale for cost-efficiency."

Corporates do not have to maintain fixed warehousing spaces (irrespective of usage) or be forced to transport only full truckloads to move materials or pay unviable and unreasonable prices to transport smaller quantities.

Digital transformation and it effects on India's supply chain scenario

The other major transformation that has impacted the supply chain space in the past 10 years has been technology and digital transformation. Earlier, there used to be super stockists who bought large volumes of inventory from the corporate players and stored it in bulk in their warehouses. They would do the supply chain planning and warehousing. They then sell to sub-distributors who sold to sub-distributors and who, in turn, would sell to the city-level distributors or retailers. The retailer, in turn, would typically have a warehouse and maintain inventory to sell immediately to their customers when there is a demand. So, there were 3-4 layers of supply chain and each level paying the costs of supply chain services which ultimately is drawn from their margins.

Today, with the digital transformation and technological advancements, the retailer can actually access the virtual inventory available with the stockist, place the order on demand and remove the middlemen (who may be large corporates themselves). The retailers also do not have to maintain their own warehouses (with exceptions such as FMCG) and cut down on large amounts of supply chain costs. For instance,

"Asian Paints which earlier had 6 stockists, 180-200 distributors and 3000 + sub-distributors in the country has now gone down to 10-12 distributors in the country by leveraging technology."

The realisation that customers are willing to wait for a couple of days to get the paint order and that the order can be directly sourced from the distributor or super stockist led the company to take this step. This has ultimately led to infrastructural changes.

The emergence of tech-led startups like Uber and e-commerce giants like Amazon have made it indispensable for traditional companies to look inward and make changes so as to remain competitive. This is because Amazon relies on technology-led efficiencies and has reduced the multiple layers of distribution and therefore, able to give competitive prices and huge discounts.

The challenges that persist in India's supply chain industry and the way forward

One of the major challenges in the supply chain space in India has been the narrow investor focus and siloed interests on logistics and trucking. There is not enough investment in cutting-edge and next-gen solutions in warehousing, supply chain planning, software solutions, etc. The way forward for the supply chain industry to flourish is for investors to explore the multiple opportunities available for investment and support grassroots innovations to thrive.

"It is important for businesses to remain focused on their core business. However, if there are weak links in the supply chain, they will affect the core. So, they must solve for the weakest links in the supply chain, either through in-house solutions or by outsourcing it for economies of scale."

The bureaucratic bottlenecks in getting permits and documents still remain. Standardisation also needs to come about in the licensing and documentation requirements in the supply chain space, similar to the standardisation in taxation.

Having seen these changes take place in India, Lumis Partners feels that this is the right time to start evaluating the Supply Chain startup ecosystem.

Thus, we have launched our 2 month long Fellowship program catering to early and growth stage supply chain startups called supply chain labs (https://supplychainlabs.in/). This is our small contribution to the ecosystem, surely a lot more will be required for major disruption.

Source: supplychainlabs.in

●●●

SINGLE WINDOW SYSTEM PORTAL 'CHAMPIONS' TO ASSIST MSMES OF THE COUNTRY MINISTRY IMPLEMENTS AI & ML TOOLS TO GET INSIGHTS INTO MSME RELATED ISSUES AND GRIEVANCES FOR THEIR QUICK AND EFFECTIVE RESOLUTION

AI & ML analytics can be seen at the "AI Corner" at following link on Ministry's champions portal.

https://champions.gov.in/msme_grievances/news_opinion/analytics.htm

The Ministry of MSME in a major initiative has onboarded latest IT tools of Artificial Intelligence(AI) and Machine Learning (ML) for providing assistance and solutions to the issues of Micro, Small, and Medium Enterprises (MSMEs). Ministry has implemented AI & ML on its robust Single Window System 'Champions' which was launched by the Prime Minister on 1st June, 2020. This multi-modal system has a portal at virtual level and technology equipped physical control rooms at around 69 locations of the country. It has emerged as one of the front runner platforms for the MSMEs in a very short span of time.

Ministry of MSME has taken Covid-19 as a challenge and is converting it into an opportunity with futuristic interventions. In this difficult period, Ministry is not only whole-heartedly supporting the MSMEs and trying to convert this crisis into an opportunity, but is in fact making them break their barriers, make a paradigm shift and become champions.

MSME Ministry further said that it is working aggressively to take the Nation and the MSMEs in the direction of Industry 4.0. They are not only adopting the technologies categorized as part of Industry 4.0 but are also encouraging the MSMEs to adopt the same. They are also helping the MSMEs to manufacture its essential and enabling products like sensors, motors, computer displays and other animation technologies.

In this very sequence, as promised earlier, Ministry has implemented Artificial Intelligence (AI) and Machine Learning (ML) on their Champions portal. Technology Company Intel is their partner in this journey. Intel have guided the Ministry for last five months in implementing some of the tools of AI & ML which are ready for use from TODAY. Ministry has also said that Intel and its technology partner have implemented the entire domain of AI & ML at their Champions portal totally free of cost.

MSME Minister, Mr. Nitin Gadakari elaborated the work done by the Ministry in this direction during the AI Summit organized by Intel today. He specially thanked Intel and its partner for doing this service to India Pro-Bono. He also said that the entire concept and scope analysis and design has been done inhouse in the Ministry with the help of NIC and under guidance of local team of Intel. He complimented these teams wholeheartedly.

About AI:

- AI is the idea of making machines capable of thinking, acting, and learning like humans.
- It has an ability to enable machines to Learn, Adapt & Do which "Rule-based (MIS) Automations" cannot. In this phase, as implemented TODAY:

1. AI has started giving the MSME Ministry social media insights relating to MSMEs for its policy action through Facebook, Twitter, Instagram, Blogs, Forums and online News which were not available to us on holistic basis;
2. Ministry says that till now, for grievance redressal, we were dependent on the complaints and data which comes to and through our CHAMPIONS portal. Now, we are able to know the pulse of the entire MSME Sector even without the stakeholders going to our portal;
3. Ministry officials say that now it will be possible to know the emotions of the people involved with or dependent on the MSME sector in real time;
4. Moreover, AI tools present Data-driven insights that are easy to understand. They can slice and dice data in many ways which are not available in traditional tools of Information Management Systems (MIS);
5. This allows even our ordinary staff, not just specialists, to easily discover actionable points.
6. The data Analytics can be easily shared as real-time live-data links with the teams at Central (Hub level) and spokes of CHAMPIONS Control Rooms spread all over India, an officer said;
7. Ministry feels that now onwards, the AI is going to do the tedious work of preparing data for analysis; thus, freeing up their human resources to engage in more productive work.

Ministry said that with this spirit and possibility, currently they have started:

- Enabling and Optimizing their Champions portal with AI & Analytics technology to derive insights;
- This is helping them in understanding the issues in real-time which includes information intelligence and sentiment analysis based on widely available Social media and Online data.

This input & intervention will enhance our information resources on the one hand and free our human resources on the other, an office said.

Ministry of MSME also said that now the next phase is relatively easier for which the trial is on. The second phase would be directed towards real-time grievance redressal and management. This includes:

- Increasing the performance of control rooms & officers through AI enabled Chat Bots for faster response to the query of portal users;

Give Real-time, detailed analytics across entire workflow of its single window system and grievance redressal through Champions portal for effective resolution and greater stakeholder satisfaction.

Source : PIB

TO BOOST SHIPBUILDING IN INDIA, MINISTRY OF SHIPPING AMENDS RIGHT OF FIRST REFUSAL (ROFR) LICENSING CONDITIONS

A bold step towards 'Aatma Nirbhar Shipping' for 'Aatma Nirbhar Bharat': Shri Mansukh Mandaviya

In pursuance of 'Make in India' policy of the Government of India, Ministry of Shipping has reviewed the ROFR (Right of First Refusal) licensing conditions for chartering of vessels/Ships through tender process for all types of requirements.

To promote the demand of the ships built in India, priority in chartering of vessels is given to vessels built in India, flagged in India and owned by Indians under the amendments in the guidelines of ROFR(Right of First Refusal).

Now it has been decided that for any kind of charter of a vessel undertaken through a tender process, the Right of First Refusal (RoFR) would be exerted in the following manner:

i. Indian built, Indian flagged and Indian owned

ii. Foreign built, Indian flagged and Indian owned

iii. Indian built, foreign flagged and foreign owned Provided that:

A. All vessels flying the flag of India (i.e. registered in India) up to the date of issue of new circular by the Director General of Shipping shall be deemed to be Indian built vessels and will fall in category (i) above and

B. The foreign flagged vessels permitted by DG (Shipping) under Section 406 of the Merchant Shipping Act, 1958 for chartering by an Indian citizen/company/society, who is building a ship in an Indian shipyard for registration under the Indian flag, as a temporary substitute for the Indian ship under construction, meeting the following two conditions shall be deemed to fall under Category (i) above.

a. 25% of the contract money has been paid to the Indian shipyard

b. 50% of the hull fabrication has been completed, as certified by Recognised Organisation.

The duration of licence to such chartered vessel shall be limited to the period of building of the ship, as mentioned in the shipbuilding contract.

It is to be noted that Ministry of Shipping has made provision for long-term subsidy for shipbuilding activities under shipbuilding financial assistance policy (2016-2026). The Ministry has already disbursed an amount of Rs 61.05 crores till date under this policy. It is an endeavour of the Government to further incentivise shipbuilding by providing additional market access and business support to ships built in India.

The revised guidelines will give a boost to the domestic shipbuilding and shipping industries. It will encourage the domestic shipping industry to support the domestic shipping industry.

Minister of State for Shipping (I/C) Shri Mansukh Mandaviya said, "Ministry of Shipping is working with a focused approach to promote shipbuilding in India as per AatmaNirbhar Bharat vision of our Hon'ble Prime Minister Shri Narendra Modi. The revision of RoFR licensing conditions is a giant step towards AatmaNirbhar Shipping. It will promote 'Make in India' initiatives through self-reliance and will give a strategic boost to domestic Ship building industries, contributing towards long-term economic growth of India".

Source : PIB

●●●

IMPORT SUBSTITUTION NATIONALISM IN THE INTERESTS OF THE NATION – NOT PROTECTIONISM

SN PANIGRAHI, GST & FOREIGN TRADE CONSULTANT & TRAINER
snpanigrahi1963@gmail.com

Import Substitution (IS) generally refers to a Trade & Economic Policy that that advocates Replacing or Eliminating or Minimizing the Importation of the commodity and Encourage for the Production in the Domestic Market. It is based on the Premise that a Country should attempt to Reduce its Foreign Dependency through the Local Production of Industrial Products.

Import substitution is the idea that **Blocks Imports** of manufactured goods to **help an economy by increasing the demand for domestically produced goods**. The logic is simple: **Why import** foreign-made cars or clothing or chemicals **when one could produce those goods at home** and employ workers in doing so?

In the 1940s and 1960s a new paradigm of industrialization and development had taken developing countries by storm - **Import Substituting Industrialization (ISI)** in Latin America—particularly in Brazil, Argentina, and Mexico—and in some parts of Asia and Africa. But that was soon overtaken in the 1970s and beyond by the open trade export-led growth strategy that led to the tremendous economic success of East Asian economies, followed by that of China.

Import substitution is popular in economies with a Large Domestic Market like India. For large economies, promoting local industries provided several advantages: Economic Growth, Improved GDP, Employment Generation & Elevate Poverty, **Develop Robust Domestic Manufacturing Base & Industrialization**, Import Reduction & Improve the Trade Balance, and Saving in Foreign Currency that Reduced the Pressure on Foreign Reserves; becoming more **Self-sufficient** and Less Vulnerable to Adverse Terms of Trade and **Decrease Dependency on other Nations.**

Through this policy, the government is trying to Protect the Domestic Industries from Foreign Competition through Two Forms:

Tariffs: Tax on imported goods to discourage their Importation.

Non-Tariff Barriers: Specify the quantity of goods to be imported.

The dis-advantages of Import Substitution are too much Protection to Domestic Industry Limits Growth, **Create Inefficiency, Low Levels of Innovation, Low Quality, Inferior to International Standards, Obsolete Products, Doesn't have the Sufficient Technology, Not Exposed to International Competition, Competitive Disadvantage. The Consumers have Less Choice and to pay more Cost.**

Import Substitution A Balancing Act : While adopting Import Substitution, we should take into consideration some of the factors like Capabilities of Domestic Manufacturing Industry, Economic Compulsions & Constraints (like Forex Reserves), WTO Regulations, FTAs & Other International Norms and also End Consumers Right to Choose. Following re some of the guiding principles:

- **Should not Restrict or Exercise Blanket Control on All Imports**
- **Should not Open Up Domestic Market Irrationally to the Foreign Suppliers**
- **Reasonable Protection Should be Provided to Domestic Industry as they Can't be Equated with Global Giants.**
- **Rational Controls over Non-Essential Imports**
- **Competition must be Among Equals**
- **Focus on Value Addition**
- **Collaboration – Mutual Beneficial Arrangements**

Let's now Discuss need for Import Substitution from

- Domestic Consumption & Domestic Production
- Non-Essential Imports
- Nationalism & Self Sufficiency / Reliance

Domestic Consumption & Domestic Production : India is the world's second most populous country with a population of 1.3 billion. With an annual population growth rate 1.1 per cent, India is estimated to become the most populous country by 2024.

With its size and growing middle class, India provides an enormous business potential. According to a recent report published by World Economic Forum, India is poised to become the third largest consumer market next to US and China by 2030. The report also states that the consumer spending in India is expected to grow to USD 6 trillion by 2030.

Consumption has always been the driving force and pillar of India's growth story. For instance, presently, consumption has a share of 57 per cent in the total gross domestic product. It shows that consumption demand has a greater impact on the overall growth of

the country. India has Large Growing Middle Income Population – Inceasing Share of Young Working Population.

India has become one of the most attractive destinations for investment in the manufacturing sector. Manufacturing has emerged as one of the high growth sectors in India. The Government of India has taken several initiatives to promote a healthy environment for the growth of manufacturing sector in the country. India is an attractive hub for foreign investments in the manufacturing sector. Several mobile phone, luxury and automobile brands, among others, have set up or are looking to establish their manufacturing bases in the country.

India can Achieve I's full Manufacturing Potential as it looks to Benefit from Demographic Dividend and Large Working Force over the Next Two to Three Decades. **The manufacturing sector of India has the potential to reach US$ 1 trillion by 2025.**

Non-Essential Import : India imports around 11,500 types of goods every year with commodities like Crude Oil, Gold, Electronic Goods, Fertilizers, Capital Goods, Machine Tools, Edible Oil, Plastic Goods, Metal, Toys and Pharmaceutical Products etc.

Non-essentials are things that are not absolutely necessary. In a recession, consumers could be expected to cut down on **non-essentials** like **Toys, Plastic Goods, Sports Items, Furniture, Gold, Household Steel Items, Electronic Goods, Electrical Items, Wrist Watches, Wall Clocks, Ampoules, Glass Rods and Tubes, Hair Cream, Hair Shampoos, Face Powder, Eye and Lip Make up Preparations, Printing Ink, Paints and Varnishes, some Tobacco Items and Food Items, such as Fruits and Almonds, among others**.

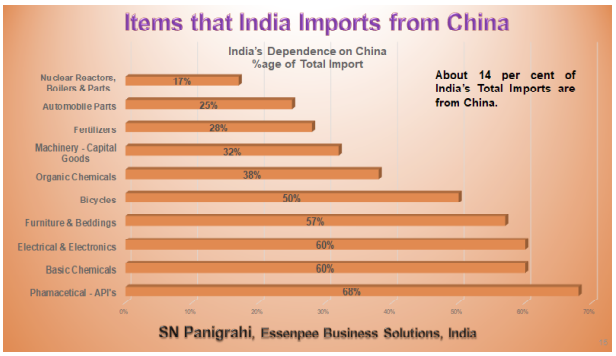
Import from China : China accounts for about 14 per cent of India's Total Imports (20 per cent of India's total non-oil, non-gold imports).

The major commodities currently imported from China are: Electronic Equipment; Mobile Handsets, Smartphones; Telecom & Power Equipment's, Capital Machines, Engines and Pumps; Organic Chemicals; Fertilizers; Iron and Steel; Plastics; Metal Products; Gems and Precious Metals; Ships and Boats; and Medical and Technical Equipments; Batteries, Leather Products, toys, Chemicals and Critical Pharma Ingredients and Automobile Parts etc.

Non-essential **Imports from China** amount to **[1] 4 Trillion a year**, according to a commerce ministry estimate.

India's trade deficit with China fell to USD 48.66 billion in 2019-20 on account of decline in imports from the neighboring country, according to government data.

Exports to China in the last financial year stood at USD 16.6 billion, while imports aggregated at USD 65.26 billion, the data showed the trade deficit between the countries was at USD 53.56 billion in 2018-19 and USD 63 billion in 2017-18.



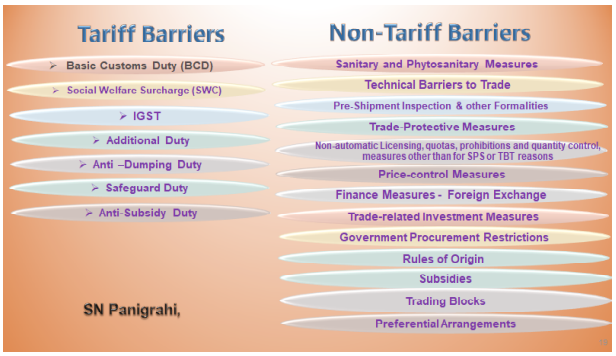
Import Substitution through Various Tariff & Non-Tariff Measures : The government is looking to introduce an import substitution policy to '**Replace Foreign Imports**' and **boost domestic manufacturing in the wake of the current economic scenario due to Covid-19.**

WTO Compatible Trading Barriers

Tariff Barriers : Tariff is a Tax Levied on Goods Traded Internationally, that is on Imports. As a result, the Price Level of Imported Products Rises and the Demand for them decrease, thus imports are Controlled.

Non-Tariff Barriers : Non-Tariff Barriers (NTBs) include all the Rules, Regulations and Bureaucratic Delays that help in keeping Foreign Goods out of the Domestic Markets or Discourage.

Following are some of Tariff & Non-Tariff Barriers



Import Restrictions - Tariff Barriers : India has increased duties on more than 3,600 tariff lines covering products from sectors such as textiles and electronics since 2014.

India already raised taxes on imports of goods such as electronic items, toys and furniture in February, 2020.

Products from around 20 sectors that have a manufacturing advantage and can attract investments are being considered for import restrictions.

These include furniture, leather, footwear, agro-chemicals, air-conditioners, CCTVs, sports goods, toys, ready-to-eat food, steel, aluminium, electric vehicles, auto components, TV set-top boxes, ethanol, copper, textiles and bio fuels.

The government is also planning to impose a 20-25% import duty on active pharma ingredients (API) that can be produced locally to cut reliance on China.

Government Looking at Non-tariff Barriers to Curb Chinese Imports

Strategy of Increasing Customs Duty to Restrict Imports Not Proved Effective. Non-Tariff Measures Need to be Implemented.

Non-tariff Barriers : Framing Technical Regulations and Quality Norms

The government is taking steps such as **Framing Technical Regulations and Quality Norms** for several products to cut dependence on China for imports with the aim of **deterring non-essential lower quality imports which render Indian products uncompetitive.**

As many as 371 products have been identified for technical regulations. Out of these, technical regulations have been formulated for 150 products worth about USD 47 billion of imports.

Over 50 quality control orders (QCOs) and other technical regulations have been notified in the past one year including on electronic goods, toys, air conditioners, bicycle parts, chemicals, safety glass, pressure cooker, items of steel, electrical items such as cables.

Compulsory Registration Scheme (CRS) : Ministry of Electronics & Information Technology (MeitY) has notified "Electronics and Information Technology Goods (Requirement for Compulsory Registration) Order, 2012" on 3 Oct 2012.

As per the Order, **no person shall manufacture or store for sale, import, sell or distribute goods which do not conform to the Indian standard specified in the order**. Manufacturers of these products are required to apply for registration from Bureau of Indian Standards (BIS) after getting their product tested from BIS recognized labs.

Bureau of Indian Standards then registers the manufacturers under its registration scheme who are permitted to declare that their articles conform to the Indian Standard (s). The registered manufacturers are then allowed to put the Standard Mark notified by the Bureau.

The Scheme is modified from Time to Time to include more & more Items.

India Announces Import Curbs On 101 Defense Items in Aug'2020

In a push to promote the domestic defense industry, Defense Minister Rajnath Singh on Aug'2020 announced **restrictions on import of 101 weapons and military platforms** including light combat helicopters, transport aircraft, conventional submarines and cruise missiles by 2024.

Making the announcement on Twitter, the defence minister estimated that the domestic defense industry would receive **contracts worth almost Rs 4 lakh crore within the next five to seven years** as a result of the decision to prune the import list. Singh said the defence ministry is now ready for a "big push" to boost indigenous defense manufacturing in tune with Prime Minister Narendra Modi's call for **'Atmanirbhar Bharat**'.

The list incorporates major armaments such as **artillery guns, assault rifles, corvettes, sonar systems, transport aircraft, ammunition, radars, conventional diesel-electric submarines, communication satellites and shipborne cruise missiles.**

The items on the list, worth a total of $53.4 billion, are to be manufactured in India, with local companies as prime contractors. Of these, about $17.3 billion will be either Army or Air Force programs, and defense contracts worth $18.6 billion will be meant for naval programs. The MoD said these orders will be placed with domestic companies within the next five to seven years.

The domestic industry will now stand a better chance to compete among itself and cater to local demand. Singh's announcement came **a week after a draft defense procurement policy of the defense ministry projected a turnover of Rs 1.75 lakh crore in defense manufacturing by 2025.**

MoD signs Rs 2,580 cr deal for Pinaka Rocket Launchers

In a big boost to the 'Make in India' initiative, the defence ministry has signed contracts worth Rs 2,580 crores with Indian companies to supply six army regiments with Pinaka missiles.

The acquisition wing of the ministry of defence signed contracts with **Bharat Earth Movers Ltd, Tata Power Company Ltd, and Larsen & Toubro** on August 31, a statement from the ministry said.

The six Pinaka Regiments comprise of 114 Launchers with automated gun aiming and positioning system and 45 command posts to be procured from M/s TPCL and M/s L&T, and 330 vehicles to be procured from M/s BEML.

Defense Canteens to Ban Import of Finished Goods

In a major decision in Oct'2020, Government banned all '**Direct Imported**' items being sold at the government-controlled **Canteen Stores Department (CSD),** which operates canteens for Defense Forces.

India's defense canteens sell liquor, electronics and other goods at **discounted prices** to soldiers, ex-servicemen and their families. With **annual sales of over $2 billion across 4,000 military shops, they make up one of the largest retail chains in India.**

Out of the 5,500 items sold by the CSD, around 420 are imported according to the Manohar Parrikar Institute for Defense Studies and Analyses (IDSA). Imports make up around 6-7% of total sales value in the defense shops.

Among all the countries, China accounts for a bulk of the imported items such as Toilet Brushes, Diapers, Vacuum Cleaners, Electric Kettles, Sandwich Toasters, Laptops and Ladies' Handbags, Consumer Durables, Smart Phones, Footwear & **Foreign Liquor**.

India has in recent months taken steps to curb Chinese businesses and investments following a border clash in June that killed 20 Indian soldiers.

Government steps up efforts to cut Solar Panel Imports from China, proposes 20-25% customs duty

The levying of the duty is aimed at reducing imports from China, which continues to be the largest supplier of solar equipment to India even after imposition of the safeguard duty in July 2018.

The government in July 2018 had imposed a 25% Safeguard Duty on import of solar cells from China, Malaysia and developed countries.

To curb imports of solar panels, the Ministry of New and Renewable Energy (MNRE) has proposed to levy 20-25% basic customs duty, Union power minister RK Singh said. For solar cells, the domestic manufacturing capacity of which is lower, the duty will be 15%, he added. The duty on panels will progressively be increased to 40%.

The duties are levied right after the safeguard duty regime on these products ended on July 31.

Government Directed Telecom Firms like BSNL, MTNL to Avoid Using Chinese Equipment

The government directed telecom firms like BSNL, MTNL, and their subsidiaries to avoid using Chinese equipment as border tension between the two countries escalates. The Telecom Ministry has now ordered BSNL, MTNL, and other private companies to **ban all Chinese deals and equipment**.

Ban on power equipment imports from China, Pak

India will not allow import of power equipment from China and Pakistan, power minister R K Singh announced, citing recent transgression in border areas and cyber security threats. Imports from other nations will need permissions.

"Today we manufacture everything that is required for power generation, transmission and distribution. In 2018-19, we **imported Rs 71,000 crore power equipment of which Rs 21,000 crore are Chinese.** We cannot tolerate this, that you have a country which transgresses into our country and yet we create jobs in that country, when we have the ability to manufacture it (equipment) ourselves. We have decided not to buy from prior-reference countries. Any equipment imported will need permission. And we will not give permissions for equipment from China and Pakistan.

New 'Rules of Origin' to Check Misuse of FTA Provisions

Notification No. 81/2020-Customs (N.T.) dated 21st August, 2020.

Circular No. 38/2020-Customs; Dated 21st August, 2020

The government has come out with norms for the enforcement of '**Rules of Origin**' provisions for allowing **Preferential Rate of Customs Duties** on Products Imported under **Free Trade Agreements** aiming at striking a delicate balance in its efforts to check misuse of FTAs by unscrupulous importers and ensuring that their use by legitimate businesses is not discouraged.

The Department of Revenue has notified the 'Customs (Administration of Rules of Origin under Trade Agreements) Rules, 2020' which "**come into force on September 21, 2020**".

Measures by DGFT to Shift Import of Items Allowed Freely to Restricted / Prohibited : Examples

ACs with Refrigerants : On 15th Oct'2020, Director-General of Foreign Trade (DGFT), moved Split System and Others **ACs with refrigerants** have been from "**Free**" **to "Prohibited**" category. The domestic market of air conditioners is believed to be around $5-6 billion.

Colour Television : On July 31, 2020, **"Import policy of colour television is amended from free to restricted,"**

Imports of TV stood at about $1 billion during 2018-19. China ($535 million in 2018-19) is the largest exporter of TV sets in India. It was followed by countries like Vietnam ($327 million), Malaysia ($109 million), Hong Kong ($10.52 million, Korea, Indonesia, Thailand, and Germany.

Pneumatic Tyres : On 12 June'2020, India put import of new pneumatic tyres under restricted list, to limit their imports especially from China. In FY20, **India imported new pneumatic tyres worth $370 mn** with China ($93 mn) and Thailand ($95 mn) contributing the larger chunk of it.

Refined Palm Oils : The government on 8th Jan'2020 put restrictions on import of refined palm oils. The country imports around 15 million tonnes of edible oil a year, forking out Rs 70,000 crore. "Out of this, around

20% is refined oils and the rest is crude. Now more crude oil will be imported,"

According to the Solvent Extractors' Association (SEA), a trade body, the existing refining capacity in the country is around 30 million tonnes, but only 45% this is being utilized.

Agarbatti : Import policy of Agarbatti and other Odoriferous preparations which operate by burning ...is revised from Free to Restricted. Now importers of these goods require licence from the government for import purpose. Its imports increased to USD 12.35 million in 2018-19 from USD 7.51 million in 2017-18.

Imported Toys : India imported toys worth nearly Rs 4,000 crore in 2019-20 , almost 85% Imported from China. The commerce ministry had in February issued the quality control order (QCO) mandating that no toy, including those manufactured in India, would be sold without having BIS certification from September. Till now there are no licence-holders for manufacturing toys.

Silk Imports : Rs 800 crore silk imports from China can be stopped if local production ramped up.

In order to protect domestic sericulture farmers and silk reelers, anti-dumping duty of $1.85 per kg has been imposed on Mulberry raw silk of 3A Grade and below, originating in or exported from China to restrict in order to promote local production and create more jobs.

Viscose Staple Fibre (VSF) : Anti-dumping duty Imposed on viscose staple fibre (VSF) — a key raw material used in apparels, home textiles, dress materials, knitwears and non-woven applications - Anti-dumping duty $0.103 to $0.512 per kg on imports from Indonesia, China and Thailand**.**

India Lists 38 Drug Raw Materials for which it wants to End Dependence on China

"The government's apex body, the Central Drug Standards Control Organisation (CDSCO) has prepared a list of 38 essential APIs where India needs to be self-dependent.

'The government wants these API's be produced locally in a bid to end the country's dependence on Chinese imports.

Indian drugmakers import around 70 per cent of their total bulk drugs from China. In 2018-19 fiscal, the government had informed the Lok Sabha that the country's firms imported bulk drugs and intermediates worth $2.4 billion from China.

India is moving towards reducing dependency on the import of Active Pharmaceutical Ingredients (APIs) and drug intermediates from China. "There has been a 4 per cent reduction in import of APIs and other raw materials from China in the last one year," R Uday Bhaskar, Director-General, Pharmaceutical Export Promotion Council (Pharmaexcil)

The government is also planning to impose a 20-25% import duty on active pharma ingredients (API) that can be produced locally to cut reliance on China.

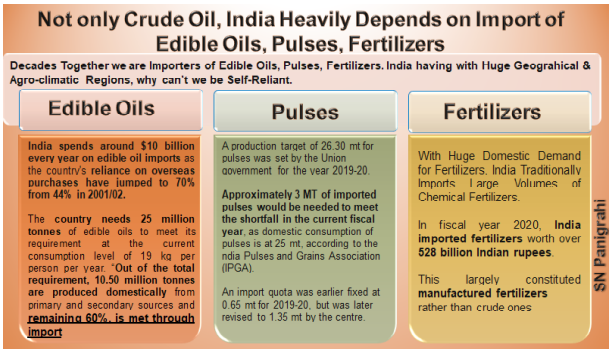
India Should Become Self-Reliant on Edible Oils, Pulses & Fertilizers : Not only Crude Oil, India Heavily Depends on Import of Edible Oils, Pulses, Fertilizers.

Decades Together we are Importers of Edible Oils, Pulses, Fertilizers. India having with Huge Geograhical & Agro-climatic Regions, why can't we be Self-Reliant.

Decades Together we are Importers of Edible Oils, Fertilizers

India having with Huge Geograhical & Agro-climatic Region, why can't be Self-Reliant in Edible Oils (India spends around $10 billion every year on edible oil imports as the country's reliance on overseas purchases have jumped to 70% from 44% in 2001/02).

With Huge Domestic Demand for Fertilizers, India Still Imports Large Volumes of Chemical Fertilizers (In fiscal year 2020, **India imported fertilizers** worth over **528 billion Indian rupees**. This largely constituted **manufactured fertilizers** rather than crude ones).



India needs 25 million tonnes of edible oils to meet its requirement at the current consumption level of 19 kg per person per year. "Out of the total requirement, 10.50 million tonnes are produced domestically from primary and secondary sources and remaining 60%, is met through import.

The oilseed production of the country has been growing impressively. Despite this, there exists a gap between the demand and supply of oilseeds, which has necessitated sizable quantities of imports, the minister added.

Soybean, rapeseed & mustard, groundnut, sunflower, safflower & niger are the primary sources while oil palm, coconut, rice bran, cotton seeds & tree-borne oilseeds are the secondary sources of production of edible oil in India.

Import Substitution - Opportunity to Become Self-Reliant on Many Manufacturing Products

Listed Down below some of the Items which can be Manufactured in India

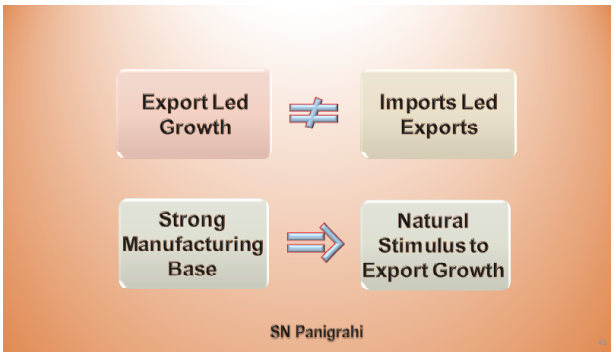
- Mobile Phones and Telecom Equipment to Cameras, solar panels, air-conditioners and penicillin — accounted for nearly three-fourths of the imports from China
- Value Added Footwear
- Medical Consumables Like Surgery Gloves, Masks, Shoes, Body Cover etc.
- Medical Diagnostic Equipment's & their Consumables
- Electronic Goods like Mobiles, Color TVs, Cameras etc
- Toys, Furnitures, Sugar Mill Machinery, Light Engineering Goods like Bicycles, Sewing Machines, Electronic Goods for Audio-Visual Aids, Chemicals Like Soda Ash, Caustic Soda, Bleaching Powder etc
- Increase in the domestic productions of Fertilizers, Iron and Steel, Railway Wagons, Diesel Engines, Newsprint, Paper and Paper Board and Crude Mineral Oil have lessen the Pressures on our Import Bill Considerably.

Export-Led Growth : Export led growth is where a significant part of the expansion of real GDP, jobs and per capita incomes flows from the successful exporting of goods and services from one country to another.

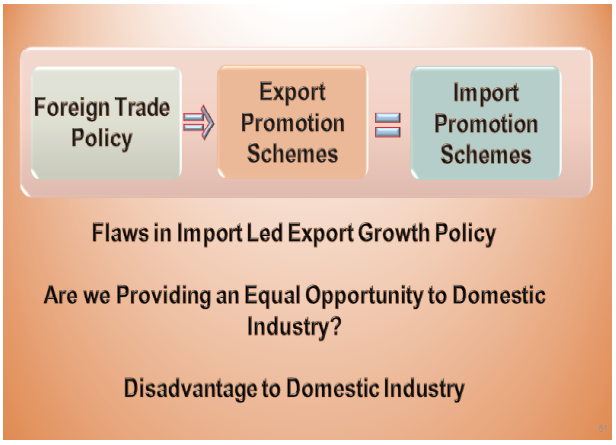
In recent years a number of countries have experienced rapid growth across a number of export industries which has helped to fuel their long-run expansion. These nations include China, Ireland, South Korea, Singapore, Hong Kong, Vietnam, Ethiopia and other emerging countries.

Import Substitution Measures Instil Strong Growth of Domestic Manufacturing.

Strong Manufacturing Base Naturally Boost Export Growth Because of Expansion of Scale & Scope



Step-Motherly Treatment to **Deemed Exports - Deprived off Stand at par with Export Promotion Imports**



"**Deemed Exports**" refers to those transactions in which the goods supplied do not leave the country and the payment for such supplies is received either in Indian rupees or in free foreign exchange. Deemed Exports not only Saves Scarce Forex Outflow, but Largely Promote Grow of Domestic Industry.

Deemed exports are those supplies of goods that are notified as 'deemed exports' where:

(a) The goods supplied do not leave India;

(b) Payment for such supplies is received in Indian Rupees/ Convertible Foreign Exchange;

and

(c) Such goods are manufactured in India.

Undoubtedly, treating Deemed Exports at par with physical exports and extending all the benefits of the latter to them is too big a step to take right away.

However, **Deemed Exports are not being Incentivised by giving the full benefits of exports in terms of Rebate or Refunds and also suffers from too many complications and tedious paperwork.**

Many Intellectual Economist Critics with their Western Mindset & Sold out Brains, still Advocate Irrational Import Led Growth. As a Result of which India with Lopsided Export Promotion Schemes Encourage & Promote Imports. Therefore, Foreign Trade Policy Needs a Fresh Outlook & Approach to Encourage Domestic Content.

In the Name of Import Led Export Promotion, we have Greatly Ignored Domestic Industry and made to Collapse. **Instead of the Huge Amounts of Money Spent on the So-Called Export (Import) Promotion Schemes, if it is Spent on Focused Development of Indigenous Industry, then it could have Proven to Expand Many Folds GDP & Employment Generation – Become Competitive, self-Reliant and as a Result of which could have Provided Strong Manufacturing Base for Exports.**

Nationalism Vs Protectionism : Nationalism is not **boycott** Imports from any Particular Country. It is a **Call for Self-Reliance**. It is not Protectionism. **It is to Strengthen Domestic Capability in Self Defiance to Foreign Adversities**. **Self-Sufficiency is Right of Every Nation.** Governments Intervene in the Economy to Elevate the Nation from the hardships of Free Market Economy. **Govt. Initiatives for Economic Revival - Atmanirbhar Bharat Abhiyaan - A Call to the Nation for Self-reliance, called by Hon'ble Prime Minister, Shree** Narendra Modi **is in the Interests of the Nation.**

It is also Responsibility of Every Citizen of India to Stop / Avoid / Minimize Use of Non-Essential Imported Goods to Make Indian Economy Strong & Create Jobs.

Why Import from China

Visit any Market Place in India or go to any Shopping Mall or visit any online retail site, you will find attractive and cheap Chinese products everywhere whether it's electronic gadgets, crackers, decoration items, electrical goods, kitchen items or other daily consumables, you will find a cheaper Chinese version for almost everything.

Due to cheap prices, wide availability and attractive outer look and huge profit dissemination to the dealers, Chinese Products becoming best choice for business as well as for Indian consumers.

Trick of Trade of China is Innovation – Understanding Customer Need & Requirements & Delivering them @ Cheaper Prices.

In Tough Times We Need to Take Tough Decisions. Thinking Differently & Innovating. Doing Different Things will be the Norm in New Normal, Crisis Forces us to Re-Examine & Innovate. Convert the Crisis to Opportunity. Only through Innovation we can re-gain lost Domestic Market to Overseas Suppliers.

Since India has Huge Market Demand, we shouldn't Surrender to Outsiders and Depend on Foreign Supplies for even Small Domestic Needs.

As our Prime Shree Narendra Modi said "Local to Global is key to make self-reliant India. Global brands were sometimes also very Local. But when people started using them, started promoting them, they became Global from Local. Therefore, from today every Indian has to become vocal for their local"

Think it Over

- **Why Dragon Kites in the Indian Skies – Can't we Manufacture**
- **Why Indian Diwali Celebrations – Needs Chinese Crackers & Lightings**
- **Why we Pray Chinese Made Indian Gods / Goddesses**
- **Why Imported from China Diyas (deepam, pramida – an oil lamp usually made from clay, with a cotton wick dipped in ghee or vegetable oils), Candles and Agarbattis (Incense sticks) Lit to Pray before Gods / Goddesses**
- **Why there is Entry of Chinese Rakhi in the Relation between Indian Brothers & Sisters**
- **Why Chinese Toys for Indian Kids**
- **Why Made in China Tricolor – Flying in India as National Flag 'Tiranga' – it's Shameful.**
- **Now we reached a stage where without Chinese Import Support Indian Pharma Industry can't survive – Is it we Wanted?**
- **Anything that's Foreign is Crazy to Indians – It's Chinese Mania – Can't we Survive without Chinese Products?**

Whatever possible, if Every one of Us, Support then Only as a Nation we shall Survive with Pride & Self-Reliance.

This Diwali take this Pledge to Buy only Indian Products to Contribute Your Part as a True National for Reviving the Ailing Indian Industry.

Disclaimer : The views and opinions; thoughts and assumptions; analysis and conclusions expressed in this article are those of the authors and do not necessarily reflect any legal standing.

Author : SN Panigrahi, GST & Foreign Trade Consultant, Practitioner, International Corporate Trainer & Author.

Available for Corporate Trainings & Consultancy

Can be reached @ snpanigrahi1963@gmail.com

●●●

INDUSTRY 4.0- THE DIGITAL TRANSFORMATION OF THE MANUFACTURING AND MARKETING TECHNIQUES

SHYAM SUNDAR PANIGRAHI
ASST. SYSTEM ENGINEER, TCS

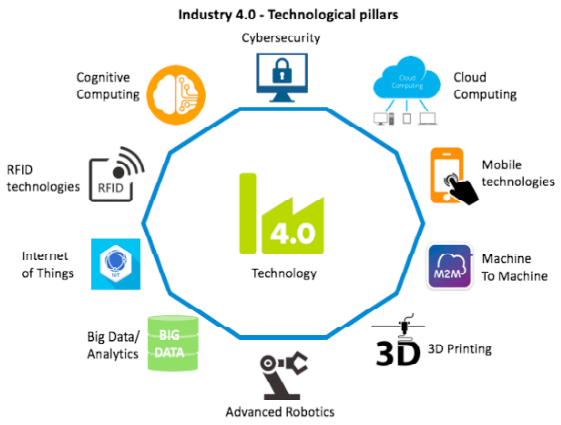
ABSTRACT:

The fourth Industrial Revolution which is commonly referred as Industry 4.0 or even Business 4.0 is the ongoing transformation of manufacturing practices by making use of technologies that make it possible to gather and analyse data, speed up the process or production in a manufacturing unit (by automating the equipment/tools that can reduce human intervention thereby significantly reducing the chance of human error) and providing a means produce high quality goods at a significantly reduced price.

This is all done to increase the industrial value chain by making the entire process more efficient and effective. In simple Industry 4.0 is the mass scale adoption of new technologies and industrial practices across various domains. IoT, Block Chain, Artificial Intelligence (AI), Augmented Reality, Big Data are some of the niche technologies that are adopted by contemporary industries and businesses to foster growth. In this article the focus will be on providing insights to some of the industry disrupting technologies.

KEYWORDS: Block-Chain, Neural Network, Natural language Processing (NLP), Artificial Intelligence, Augmented Reality, Virtual Reality, Big Data, Hadoop, Hadoop Distributed File System, Map Reduce

INTRODUCTION:



The secret to growth in this contemporary world of disruptive technologies is the willing to learn and relearn, and the fourth industrial revolution proved this. Technologies in trend today might become obsolete in the next decade. In the last decade there has been a tremendous acceleration in development of state of art sophisticated technologies like IoT, Block-Chain and so on. All these brings us in the midst of technological transformation (referred to as Industry 4.0) that is rapidly adopted by companies across the globe. Even though some dismiss Industry 4.0 as merely a marketing buzzword, tremendous shifts are happening in manufacturing and in the field of research that deserves our attention.

Figure 1: Industry 4.0 technologies

SOME NICHE TECHNOLOGIES DISRUPTING THE BUSINESS ARENA: In this section the focus will be on some listing out some of the technologies that have taken the entire world by storm.

Artificial Intelligence : Artificial Intelligence (AI) is simply the simulation of the human brain which is achieved by implementing various Neural-Network algorithms. With the help of AI smart machines are created that are capable enough of performing tasks that were once done by humans.

"**AI is a computer system able to perform tasks that ordinarily require human intelligence... Many of these artificial intelligence systems are powered by machine learning, some of them are powered by deep learning** and some of them are powered by very boring things like rules." -These were the quotes of Jeremy Achin, the CEO of Data Robot. Today the chatbots used in many of websites are powered by the NLP (Natural Language Processing) and Neural Engines which comes under AI, autonomous vehicles like the ones made by Google and Tesla are also the product of AI and surprisingly enough the digital assistants in our mobile phones like Siri or Google Assistant are also powered by AI. Now AI is in the palm of our hands and even around us when we take into consideration the smart home devices integrated with Alexa or Google Home.

Today AI is extensively used in the IT operations and this is called AIOps. AIOps is used in IT automations and for identifying errors in IT log files. AI is also utilized in R&D activities and today various AI enabled systems are deployed by militaries around the globe. In sales domain, Artificial Intelligence helps to improve sales forecasting, predict customer demands (often termed as demand forecast) and optimize the supply chain processes. This shows that AI technology has now

become an integral part of our lives and unlike old days, now it has become very affordable for both the consumers and businesses to adopt it.

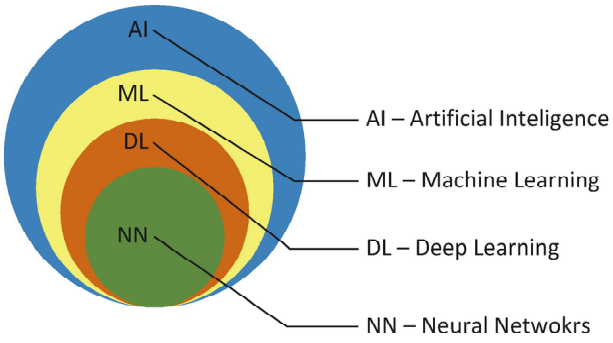


Figure 2: Graphical Visualization of AI,ML,DL and NL

Augmented Reality and Virtual Reality : Augmented Reality (AR) is a technology that overlays digital information onto the actual physical world. So to put it in simple ways it is a combination of real and digital world. This integration is achieved with the help of various external sensors, camera, sometimes GPS and 3-D scan algorithms. AR provides a means for developers and designers to enhance their view of their physical world around them. There is an obvious distinction between Virtual Reality and Augmented Reality which is often overlooked or is mistaken by the user. In Virtual Reality (VR) as its name might suggest, is a technology where user's perception of reality is completely based on the virtual or digital information that in most cases has no relation with the external world. In simple VR technology could create a fictional world and hence these days VR techs are used in gaming consoles like PlayStation VR gear. Some of the commonly used methods used to deploy Virtual Reality are: 3-D VR caves, VR holographic projectors and VR Helmets.

VR Helmets are wearable headsets that include gyroscope, accelerometer and other sophisticated sensors. This is an old idea with a new breath of life wherein the end user wears a VR helmet to get immersed in the virtual world.

3-D VR Caves are a special room sized cubes whose walls are made of non-thermal refractive materials, with more than one VR projector inserted on the rooms wall, to create a fully immersive Virtual Reality(VR) experience. This method creates an experience that is more enchanting than the one created by a single holographic projector hence this method is fast replacing the old school VR holographic projectors.

In contrast to Virtual Reality (VR), in Augmented Reality, an additional computer-generated information is given to the user that enhances the end-users experience of the real world. So, AR is not creating any fictional world as was the case with VR instead it is just overlapping some extra digital substance to the real world to enhance it.

Figure 3: VR helmet

Today Augmented reality is extensively used in businesses across the world. It offers a way to the customer to try the product before buying by creating a shopping environment for the potential customers. Even retail outlets like Walmart are using AR to train its service staff on how to work and attend its customers, something that was unheard of a few years back. Designers and architects use AR apps on their smartphones and tablets to visualize the design and scale it instead of creating costly prototypes, which greatly eases their work.

What is quite surprising is that today even an inexperienced person can troubleshoot problems in smartphones, laptops and automobiles by following step by step overlays in AR apps provided by the OEMs and manufacturers. As an example, in 2015 Hyundai became the first automobile company to launch AR guide to its customers that enables them to fix problems on their own. Such kind of AR overlays can replace the user manuals and paperwork, thereby providing the customers a better experience. The success of AR driven apps like Pokémon Go launched in 2016, just showed the world how excited the end users and consumers could get over this technology which has a tremendous potential.

Figure 4: Augmented Reality(AR) in action

Big Data : Big Data refers to huge volume of data (data that is both structured and unstructured) that cannot be stored or processed by conventional means, this is because the computing resources(be it the memory or

raw processing power)of the traditional systems will not be sufficient to perform tasks on data of this scale. In order for the data to be classified as Big Data, the data needs to be of the order of Terabytes(TB) or Petabytes. One Terabyte is numerically equal to 1024 Gigabyte(GB) and one Petabyte is equivalent to 1024 Terabyte. These numbers are absolutely jaw dropping and according to a recent survey 1.7MB of data is generated every second by every person and by the end of 2020, 44 Zettabytes will make up the entire digital space.

Figure 5: Social Media- fuelling the Big Data revolution

Now the obvious question arises what generates this huge amount of data. The answer to this is quite simple, all the social media applications (like Facebook, Twitter, LinkedIn etc.), streaming services like Netflix, Amazon Prime, IoT devices and data from other digital platforms/devices add up to create this huge amount of data in the digital space that eventually leads to creation of Big Data. The advent of faster internet, along with the rise in sheer number of users using smartphones has made storing and processing data generated by various applications, an even challenging task to accomplish. But even though this is a challenging task, companies need to process this data in a short span of time because that data/service provided is a source of revenue for these companies. This is when Big Data technologies/frameworks like Hadoop comes into picture.

Hadoop is an open source framework that allows distributed processing of huge volumes of data. Hadoop was developed by the Apache Software Foundation and was written in Java. It is designed to store and process huge volume of data efficiently. The Hadoop framework has three main components namely the HDFS(Hadoop Distributed File System), YARN and Map Reduce. HDFS stores data from the Hadoop clusters and Map Reduce computes the data present in HDFS. The YARN is used for cluster resource management. The Hadoop cluster has a master and slave node. Node is basically a technical term to describe a system or a machine. Hadoop is not the only framework for Big Data , there are other frameworks like Spark, Storm etc but Hadoop is the most widely used framework.

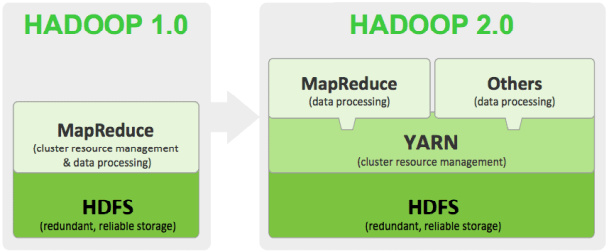


Figure 6: Hadoop Layers

The advantages of Bid Data Analytics and frameworks in business context are as follows:

1. Data regarding demand for a particular product or service can be accumulated from various market points like the official company store/website, online e-shopping sites(like Amazon,Flipkart), retailers and distributors. Once the demand and user perception regarding a product/service is known, the entire supply chain could be optimised to speed up the delivery of that particular product/ service.

2. Big Data analytics helps in real time forecasting which is very critical for the company or the enterprise to stay ahead of the competition. This helps in faster competitive pricing(like the one that happens commonly during the holiday season) which in tern helps to boost sales and sometimes helps maintaining customer loyalty.

3. Big Data analytics helps in reducing the risks by optimising dynamic decision making for an unforeseen and an unexpected future threat.

4. Big Data helps in processing business transactions in an efficient and transparent way which is of great benefit for the company.

Big Data is becoming more relevant today than ever before as the market is getting more and more competitive every passing day. Hence startups and big companies alike have leveraging the advantage of Big Data techniques to compete, evolve and capture the market space.

Conclusion :

Industry 4.0 is the result of technological growth, innovations and R&D in various fields of the industry over a few decades and today IoT, Big Data, Cloud Computing, AI and other niche technologies are pushing it forward. Today the platform is set for industries to leverage the advantages offered by bleeding edge technologies which come under Industry 4.0 to stay alive and relevant in this competitive marketspace. Implementation of Industry 4.0 by corporate houses is a win-win situation for both them and the end consumers.

●●●

GST THE LONG – AWAITED: INTEREST ON NET GST LIABILITY NOTIFIED BY THE CBIC

CMA VINOD SHETE
vinod_shete@rediffmail.com

If a taxpayer fails to make payment of GST within the due date then he is liable to pay interest on GST liabilities @ 18% per annum for the period during which default continues. Interest on the total tax liability without adjusting the input tax credit available in their ledger for utilisation. The provision of interest on late payment of GST liability is enumerated in section 50(1) of CGST Act, 2017. The provision is reproduced as below.

As per Section 50(1) of the Act: "Every person who is liable to pay tax in accordance with the provisions of this Act or the rules made there under, but fails to pay the tax or any part thereof to the Government within the period prescribed, shall, for the period for which the tax or any part thereof remains unpaid, pay, on his own, interest at such rate, not exceeding eighteen per cent, as may be notified by the Government, on the recommendation of the Council."

The above provision of the Act was not clear to tax authorities whether the Interest shall be levied on Gross Liability or net liability. Based on this, there was conflict between taxpayer and tax authorities; as tax authorities started demanding interest on Gross GST Liability.

Post various contrary decisions by different authorities and considering the genuine demands and various requests from taxpayers, the GST Council in its 39th GST Council meeting recommended that the interest for delay in payment of GST should be computed on net cash tax liability (i.e., after adjusting ITC).

Considering the pain points of the taxpayers on Interest on Gross Liability or Net Liability, the Finance (No. 2) Act, (23 of 2019) vide clause 100 proposed to amend section 50 by inserting following proviso to section 50(1) of CGST Act, 2017.

"Provided that the interest on tax payable in respect of supplies made during a tax period and declared in the return for the said period furnished after the due date in accordance with the provisions of section 39, except where such return is furnished after commencement of any proceedings under section 73 or section 74 in respect of the said period, shall be levied on that portion of the tax that is paid by debiting the electronic cash ledger."

However, such proviso shall come into effect from 01.09.2020 as declared by Notification No. 63/2020–Central Tax dated 25-08-2020. The above proviso was in the best interest of the taxpayers as it made it clear that the interest shall be calculated only on Net GST Liability i.e. only that portion which was paid through cash ledger.

However, the GST Council had declared that the law would be amended retrospectively to make the changes applicable w.e.f. 01.07.2017. The Notification and the Press Release issued by the CBIC are contradictory to the decision of the GST Council regarding the retrospective applicability of the interest payable for delayed GST payments.

Further , Notification No. 63/2020–Central Tax dated 25-08-2020 about applicability of proviso to Section 50 with effect from 1st September, 2020, Central Board of Indirect Taxes ("CBIC") issued a press release dated 26th August, 2020 . Following are Key points :

i) Relief will be given to Taxpayer as decided by the GST Council.

ii) Due to some technical limitations amended provisions of Section 50 are applicable prospectively.

iii) No recoveries shall be made for the past period as well by the Central and State tax administration in accordance with the decision taken in the 39th Meeting of GST Council.

Conclusion:

Before this notification, the taxpayers had to calculate interest on the total tax liability without adjusting the input tax credit available in their ledger for utilisation. This way, it led to more cash outflow for the taxpayers; impacted negatively on working capital of the business.

The main question which arises is that CBIC press release or even a circular would have no legal force in law in as much as only Notification airing such an amendment or clarification that the interest will be prospectively applied can be said to be valid in law. The possibility of cropping up on interest issue during audit cannot be ruled out in its entirety. Also, the circular must clarify those taxpayers who are not sure of being refunded for the excess interest paid on a gross basis.

There was an expectation that the Government may come with another amendment in CGST Act, 2017 as notification is incapable of making retrospective effect in line with the GST council recommendation. On the basis of **''Principle of Estoppel'';** many taxpayers will approach to the Courts on this unjustified demand of interest for over 3 years from the date of GST implementation.

(Article Published in WIRC Bulletin of Institute of Cost Accountants of India in October 2020)

●●●

6 POINTS E-COMMERCE FIRMS SHOULD CONSIDER WHILE SELECTING THEIR LOGISTICS PARTNER

Choosing the right logistics partner is amongst the most important decisions an e-commerce platform will ever make.

NAMAN VIJAY
CO-FOUNDER OF CLICKPOST

Running an e-commerce platform is no easy task. Competition is intense and often cut-throat, and the smallest of complications can rapidly propel a business down a slippery slope. Although this is true the world over, it's especially apparent in the online Indian marketplace that's crowded with global behemoths such as Amazon and local unicorns like Flipkart.

In the face of this competition, an e-commerce firm that hopes to survive and thrive must constantly remain in top form. Every aspect of its business must run like clockwork. And while many companies do attain this level of precision, where most stumble is the final stretch, the delivery of an ordered item to the customer.

That's where a logistics partner comes in. Under their purview is everything that happens from the moment an order is placed to the moment it is delivered safely into the hands of the consumer. In technical terms, the post-purchase experience. While this may initially seem a simple enough task, give it a little thought and you'll rapidly realise the scale of the job. A logistics partner is directly responsible for transportation, warehousing, security, and last-mile logistics, to name just a few of their responsibilities.

As such, choosing the right logistics partner is amongst the most important decisions an e-commerce platform will ever make. To help smoothen the process, here are a few things to look for when making the choice:

1. Serviceability : A large and growing e-commerce business is likely to have customers from all across India. In order to ensure their deliveries are fulfilled in an efficient and timely manner, it's vital that the logistics partner you choose have a network that's just as widespread. It's especially important to ensure that their core delivery areas overlap with your primary target markets.

For example, if the majority of your orders come from metros, it makes sense to choose a partner that has a strong distribution presence in major cities. Similarly, a platform whose customer base is rural-centric should opt for a logistics service that has a widespread network across the country, with a proven record of efficient operations in smaller cities and towns.

2. Performance Rate and Efficiency : While there's no arguing with the need for a logistics provider, it's important to remember that a poor performing partner can do your business more harm than not having a partner at all. That's why the performance rate of a logistics business, i.e. the rate at which they're able to deliver their assigned orders, is one of the most important metrics to take into consideration when making a choice.

The efficiency and speed of logistics service is another key factor, especially in a time when speed delivery has become the norm when shopping online. To satisfy this need for instant gratification, go for a partner with the capability to offer same-day, one-day, and 48-hour delivery options, your customers will thank you for it.

3. Customer Service : A customer is unlikely to differentiate between an e-commerce platform and their logistics partner when tracking their order or speaking to a delivery person. To them, the two are one and the same. A logistics partner is, for all intents and purposes, an extension of your business. As such, it's vital to ensure that they make the best impression possible.

Choose a partner with a reputation for excellence, and that's known for its quick responsiveness, fluid communication, and effective solutions to any issues that might arise, at both the business and consumer end. Good customer service is a force multiplier and can help your platform make a name for itself in an overcrowded field with a great post-purchase experience.

4. Technology : Every year brings new advancements in technology and innovation, and this holds true in the field of logistics as well. The integration of the latest technological advancements helps optimise the functioning of the business, enables the company to reduce operating costs, and boosts the efficiency of the delivery process.

While choosing a logistics partner that recognises the importance of staying up-to-date with the latest digital breakthroughs is important, platforms should also examine their ability to integrate their systems with third-party services such as logistics intelligence solutions providers. Through these tie-ups, e-commerce platforms can further streamline their operational flow, proactively communicate with customers through order status notifications, and offer an even smoother experience to the end customer.

5. Pricing : Logistics companies offer a vital service, and it's only fair that they charge accordingly. While it may be tempting to opt for the lowest price in an attempt to cut costs, that may not always be the best option. A lower price can often be an indicator of overstretched staff, cut corners, and poor service offerings – none of which justify the savings that come with this option. As in so many other cases, you ultimately get what you pay for. Another key consideration is to ensure that the logistics company provides a full accounting of the services it offers and the costs each incurs. By insisting on transparency, you can safeguard yourself from any hidden charges and avoid a price when you receive your bill. The costing list should always include transportation, receiving, warehousing, pick-and-pack, shipping, account set-up, and monthly minimums. If all of these factors are accounted for upfront, you can be sure that you're in good hands.

6. Reputation : The field of logistics is vast and complex, and only a select few logistics partners are qualified to handle every aspect of the sector. Some might have a regional specialisation, while others offer a countrywide presence. Certain businesses might have dedicated themselves to the fashion and apparel industry, while others might be better equipped to deliver produce. Whatever the case may be, it is imperative that a platform do their due diligence and select a logistics partner that has the experience and infrastructure that best complements their business.

Source: www.indianretailer.com

●●●

HOW MICRO-LOGISTIC SECTOR CAN BECOME A CRITICAL ENABLER IN INDIA'S ECONOMIC REVIVAL POST COVID-19

SHREYAS SHIBULAL
FOUNDER & DIRECTOR AT LIGHTNING LOGISTICS

As India stares at a continued phase of jobless growth, the micro-logistics space will be one sector that will be able to provide job opportunities to millions of people in the organized and unorganized sectors as the online buying activity picks up pace.

The 20 trillion stimulus package announced last month in the wake of the COVID-19 pandemic has clearly demonstrated India's resolve to minimize the economic damage and provide emergency financial support to key sectors and industries.

As the uncertainty around an immediate cure for the virus continues, economic activity in the near term may remain largely subdued with a likely increase in unemployment, weak investments, and slump in consumer demand for certain goods and services.

However, the seamless delivery of essential goods and services will remain critical as millions of people have moved to e-commerce platforms for buying daily essentials such as groceries, food, and medicines. Goods and services bought online undergo a range of processes before they finally reach the end-users - starting with first mile logistics, which involves pick-up of goods from the sellers and transporting them to the e-retailers' fulfilment centre or directly to the warehouse and processing or sorting them before delivering them to the end-user.

The micro-logistics sector, which ensures the last-mile delivery of these goods and services has in the recent past emerged as an essential service during the lockdown and may continue to remain so after the lockdown is lifted. As this sector holds the key to last-mile delivery of essential commodities for close to more than half of India's 1.3 billion people, the economic potential, and the critical delivery function of this space needs to be acknowledged and provided with policy and regulatory support to help India script its growth story.

MICRO-LOGISTICS SECTOR AS AN ENABLER FOR ECONOMIC ACTIVITY

A recent Mckinsey survey on consumer sentiment across the globe revealed that consumers in China and India will continue to shop online even after the pandemic is contained. The strict enforcement of lockdown in India has made a host of goods and services such as medicines, alcohol, and most recently, cash for senior citizens and differently-abled persons eligible for home delivery.

These goods and services, however, did not qualify for home delivery earlier. In the past few months, we have also seen a perceptible change in consumer buying behaviour which was previously driven by discounts but now, this has changed to safety concerns. As a result, we will see a continued rise in demand for last-mile delivery of essential goods and services which outlines the crucial role of the micro-logistics sector as a potentially large contributor to India's gross domestic product.

The micro-logistics sector possesses immense potential to drive economic growth and help us address the growing issue of unemployment in the country. As a majority of India's 1.3 billion population remains indoors, the online buying of essential and, to some extent, non-essential products and services will see a rapid rise.

Now, the task of delivering them to the last mile customer will definitely guarantee an affirmative growth opportunity for the micro-logistics sector and increase the workforce requirement. Besides, with focused intervention of the central and state governments in the form of stimulus packages will gradually incentivise discretionary online buying, providing the much-needed impetus to the economy. Additionally, as India begins to unlock, consumers are likely to unleash pent-up spending, accelerating the demand further for durable and non-durable goods.

EMPLOYMENT OPPORTUNITIES TO SUPPORT ECONOMIC REVIVAL

The logistics sector, as a whole, employs close to 40 million people and contributes $200 billion to India's economy. With a growing number of positive cases in India, the demand for last-mile delivery of essential goods and services will continue to rise and will remain

critical for some time.

Managing the growing delivery requirements with the existing workforce will be difficult for micro-logistics firms. Besides, semi-urban areas and smaller towns too have seen a steady rise in online shopping in recent times, particularly after the COVID-19 breakout. This will accelerate the demand for delivery executives in the near term. One of the major downsides of the pandemic is social distancing and, hence, spending will need to be more digital-driven than non-digital which will require delivery services. For example, in the next 6-7 months or more, people may likely avoid eating out due to lack of trust and to maintain social distancing.

As a result, online food ordering will gain and delivery requirements will rise exponentially. As India stares at a continued phase of jobless growth, the micro-logistics space will be one sector that will be able to provide job opportunities to millions of people in the organized and unorganized sectors as the online buying activity picks up pace.

SLOW BUT STEADY RISE IN DISCRETIONARY ONLINE BUYING

The Mckinsey survey further observed that consumers in India are optimistic about their discretionary spending once the COVID-19 crisis is brought under control. But during lockdown, on account of the existing restrictions on non-essential buying, rising unemployment and shortfall in disposable income, discretionary spending witnessed a major drop.

As per a recent note by Morgan Stanley, discretionary consumption will change in 2020 due to COVID-19 as food, health, clothing, and shelter will take precedence over high-end consumption in terms of lifestyle and adornments. However, with 'unlock 1.0' and government's continued relief measures, demand for non-essential goods will rise.

Customers from metros and smaller towns have already started placing orders for non-essential goods and services. Data from India's e-commerce industry suggests that 75 percent of orders received in the third phase of the lockdown were for goods such as stationery, personal grooming products, apparel, footwear, and electronics.

Besides, India being a consumption-based economy, increase in consumption will be key to reviving the economy. The stimulus package too will play a crucial role in putting more cash in the hands of consumers for non-essential consumption.

While other sectors and industries may take more time to recover from the impact of COVID-19, the micro-logistics sector would be one of the very few sectors that will continue to operate at an increased pace and bounce back immediately after, offering employment opportunities to a large number of people.

The discretionary spending that it may spur in due course of time will significantly contribute to the post-COVID-19 revival of the economy and unlock India's economic growth potential in the post-pandemic world.

The Author is Founder & Director at Lightning Logistics.

NEWS18

The [1] 20 trillion stimulus package announced last month in the wake of the COVID-19 pandemic has clearly demonstrated India's resolve to minimize the economic damage and provide emergency financial support to key sectors and industries.

As the uncertainty around an immediate cure for the virus continues, economic activity in the near term may remain largely subdued with a likely increase in unemployment, weak investments, and slump in consumer demand for certain goods and services.

However, the seamless delivery of essential goods and services will remain critical as millions of people have moved to e-commerce platforms for buying daily essentials such as groceries, food, and medicines. Goods and services bought online undergo a range of processes before they finally reach the end-users - starting with first mile logistics, which involves pick-up of goods from the sellers and transporting them to the e-retailers' fulfilment centre or directly to the warehouse and processing or sorting them before delivering them to the end-user.

The micro-logistics sector, which ensures the last-mile delivery of these goods and services has in the recent past emerged as an essential service during the lockdown and may continue to remain so after the lockdown is lifted. As this sector holds the key to last-mile delivery of essential commodities for close to more than half of India's 1.3 billion people, the economic potential, and the critical delivery function of this space needs to be acknowledged and provided with policy and regulatory support to help India script its growth story.

MICRO-LOGISTICS SECTOR AS AN ENABLER FOR ECONOMIC ACTIVITY

A recent Mckinsey survey on consumer sentiment across the globe revealed that consumers in China and India will continue to shop online even after the pandemic is contained. The strict enforcement of

lockdown in India has made a host of goods and services such as medicines, alcohol, and most recently, cash for senior citizens and differently-abled persons eligible for home delivery.

These goods and services, however, did not qualify for home delivery earlier. In the past few months, we have also seen a perceptible change in consumer buying behaviour which was previously driven by discounts but now, this has changed to safety concerns. As a result, we will see a continued rise in demand for last-mile delivery of essential goods and services which outlines the crucial role of the micro-logistics sector as a potentially large contributor to India's gross domestic product.

The micro-logistics sector possesses immense potential to drive economic growth and help us address the growing issue of unemployment in the country. As a majority of India's 1.3 billion population remains indoors, the online buying of essential and, to some extent, non-essential products and services will see a rapid rise.

Now, the task of delivering them to the last mile customer will definitely guarantee an affirmative growth opportunity for the micro-logistics sector and increase the workforce requirement. Besides, with focused intervention of the central and state governments in the form of stimulus packages will gradually incentivise discretionary online buying, providing the much-needed impetus to the economy. Additionally, as India begins to unlock, consumers are likely to unleash pent-up spending, accelerating the demand further for durable and non-durable goods.

EMPLOYMENT OPPORTUNITIES TO SUPPORT ECONOMIC REVIVAL

The logistics sector, as a whole, employs close to 40 million people and contributes $200 billion to India's economy. With a growing number of positive cases in India, the demand for last-mile delivery of essential goods and services will continue to rise and will remain critical for some time.

Managing the growing delivery requirements with the existing workforce will be difficult for micro-logistics firms. Besides, semi-urban areas and smaller towns too have seen a steady rise in online shopping in recent times, particularly after the COVID-19 breakout. This will accelerate the demand for delivery executives in the near term. One of the major downsides of the pandemic is social distancing and, hence, spending will need to be more digital-driven than non-digital which will require delivery services. For example, in the next 6-7 months or more, people may likely avoid eating out due to lack of trust and to maintain social distancing.

As a result, online food ordering will gain and delivery requirements will rise exponentially. As India stares at a continued phase of jobless growth, the micro-logistics space will be one sector that will be able to provide job opportunities to millions of people in the organized and unorganized sectors as the online buying activity picks up pace.

SLOW BUT STEADY RISE IN DISCRETIONARY ONLINE BUYING

The Mckinsey survey further observed that consumers in India are optimistic about their discretionary spending once the COVID-19 crisis is brought under control. But during lockdown, on account of the existing restrictions on non-essential buying, rising unemployment and shortfall in disposable income, discretionary spending witnessed a major drop.

As per a recent note by Morgan Stanley, discretionary consumption will change in 2020 due to COVID-19 as food, health, clothing, and shelter will take precedence over high-end consumption in terms of lifestyle and adornments. However, with 'unlock 1.0' and government's continued relief measures, demand for non-essential goods will rise.

Customers from metros and smaller towns have already started placing orders for non-essential goods and services. Data from India's e-commerce industry suggests that 75 percent of orders received in the third phase of the lockdown were for goods such as stationery, personal grooming products, apparel, footwear, and electronics.

Besides, India being a consumption-based economy, increase in consumption will be key to reviving the economy. The stimulus package too will play a crucial role in putting more cash in the hands of consumers for non-essential consumption.

While other sectors and industries may take more time to recover from the impact of COVID-19, the micro-logistics sector would be one of the very few sectors that will continue to operate at an increased pace and bounce back immediately after, offering employment opportunities to a large number of people.

The discretionary spending that it may spur in due course of time will significantly contribute to the post-COVID-19 revival of the economy and unlock India's economic growth potential in the post-pandemic world.

Source: NEWS18

●●●

WHY INDIA IS BETTING ON BIG STORAGE SHEDS

GOUTAM DAS

Warehousing is slated to boom post covid-19 as e-commerce grows and manufacturing shifts out of China

In mid-April, Albinder Dhindsa, the co-founder of grocery e-tailer Grofers, found himself in a tricky situation. The company's top team—including the supply chain head—was stuck in a Gurugram township that got earmarked as a containment zone. And demand for grocery was skyrocketing. "Initially, we could let one out of eight customers check out," Dhindsa told Mint, adding that "traffic now is 25-30 times of what it was in February."

The Grofers management team worked remotely, scrambling to add both workforce and warehousing capacity over the following weeks. The company ran 26 warehouses before the lockdown. It quickly added three more as demand spiked in April. Another five will open over the next two weeks. "These are smaller facilities. The warehouses were already built, which we are repurposing for our use," Dhindsa said.

Warehousing, or sheds where goods are stored, have become crucial in the post-covid world. Inside, storage racks can go up to five levels. If you can't store enough, you cannot meet the demand and neither can you deliver fast. Most crucially, additional warehouses will now allow firms such as Grofers to create a buffer of goods.

Many warehousing complexes are expected to come up across India, more so in the post-covid world. Many e-commerce categories are expected to boom, as people make a behavioural shift from buying offline to shopping online.

Also, over the next couple of years, industrial warehousing is expected to see a sunrise as (as some expect) manufacturing shifts out of China. India wants to be prepared—developers, particularly. They are building warehouses at a frantic pace, often with private equity (PE) booty.

As things stand, across eight Indian cities—NCR, Mumbai, Bengaluru, Pune, Kolkata, Chennai, Hyderabad and Ahmedabad—quality warehousing stock totalled 211 million sq. ft in 2019. The stock is expected to rise to 253 million sq. ft this year and further to nearly 300 million sq. ft in 2021, JLL, a real estate services firm, projected.

"There is little vacancy. Of the 211 million sq. ft, about 21 million sq. ft is vacant today," said Chandranath Dey, head of industrial operations, business development and industrial consulting at JLL India. Who stands to gain from this warehousing rush? And how real, and long-lasting are the assumptions behind this investment spree to build large sheds across India?

Bulking up

Much of the new warehouses going live this year are sophisticated top-quality stuff. Such quality comes at a cost and increasingly, warehousing is becoming a big boy's club. In April 2019, the Hiranandani Group set up a new company, GreenBase, which has entered into a joint venture with PE major Blackstone Group to build logistics and warehousing assets. The company has invested ₹ 500 crore.

"We have 250 acres in Pune, 115 acres in Oragadam (in Chennai), and 73 acres in Nashik. This is the time to do it (build warehouses)," Niranjan Hiranandani, co-founder and MD of Hiranandani Group, said. "The first 30-acre complex in Oragadam would be ready by the end of the year."

Other developers trying to corner the market have strong PE or institutional backing too. IndoSpace is India's largest developer of industrial and warehousing parks, with 35 parks and 15 million sq. ft ready. In 2020, the firm plans to build an additional 5 million sq. ft. IndoSpace, backed by PE firm Everstone Group, has invested over $3 billion thus far.

Then there's Bengaluru-based developer Embassy Group, which has invested $100 million and has committed to another $250 million. The firm has leased out three million sq. ft and is constructing about seven million more.

About 80% of the demand for warehousing is generated by e-commerce firms, third-party logistics firms who move the goods for many fast moving consumer goods (FMCG) brands, besides engineering firms. "Covid-19 will strengthen warehousing. People will move away from offline retail modes of shopping to the online modes because of social distancing," said Dey.

Behavioural shifts

Naresh Dangwal's motorcycle has a curfew pass taped on the handlebar. Everyday, he rides from Dwarka in Delhi to Samalka, where he works. He is assistant manager of operations in a warehouse maintained by Ecom Express Pvt. Ltd, a third-party logistics company that manages shipments for e-commerce firms. This warehouse is more of a processing centre where bags

full of goods are loaded in trucks before being sent to different cities.

In complicated e-commerce supply chains, warehouses are important nodal points. Think of them as the point where batons are exchanged during a relay race.

Between a Xiaomi phone manufactured near Chennai and its delivery to a home in Aizawl in Mizoram by Amazon, there are at least six big and small warehouses. One of Xiaomi's contract manufacturers maintains three warehouses. The assembled phone is shipped by a seller to Amazon's warehouse in Kolkata. It is further connected to a smaller warehouse in Guwahati and finally, to another one in the destination town, Aizawl.

Without an efficient network of warehouses and processing centres, like the one Dangwal works in, deliveries would take way too long than we have come to expect.

The 34-year old's job is timely connections. In the near past, this centre shipped 70,000 parcels across India every day. The volume has shrunk to a tenth now. "Only essentials—medicines, masks, gloves, and sanitizers—are moving," he said. "Previously, this hub dispatched everything from electronic goods to home appliances." These non-essentials are now stocked up in larger warehouses.

Because only essentials are being dispatched, Dangwal can do with fewer people. He has just five people in a shift now, about 10% of the warehouse's pre-covid employment. "It helps us with social distancing as well," he said.

The fact is that even when the lockdown ends, the non-essential market may not be as buoyant. A category shift is likely, hinted Anshul Singhal, managing director of Welspun One Logistics Park. The company is building a 110-acre warehousing park in Bhiwandi near Mumbai, the largest hub of warehousing in India.

"From more expensive items, people would now buy more basics online. The quantum required to service the basic requirements are higher. Eventually, you would need more warehousing space, more delivery workers, more handling workers, more automation. That would drive the demand for warehousing," he said.

Meanwhile, the warehousing market could expand to tier-two cities as well. Work from home (WFH) may result in a resource shift to smaller towns. "People have realized that WFH works. If employees are based out of tier two, it would increase local consumption of daily requirements. Warehousing and supply chain companies will therefore look at smaller cities more favourably," Singhal explained.

Government nudges

While e-commerce companies have pushed the boundaries, thus far, most of India's logistics remain unorganized and inefficient. The Indian government appears keen to change this.

A draft National Logistics Policy stated that logistics cost in India is estimated at 13-14% of gross domestic product (GDP), very high compared with more efficient global systems. In the US and Europe, logistics accounted for 9-10% of the GDP and in Japan, about 11%. Modern warehousing will now play an important role as India tries to cut through the inefficiencies.

Indian warehousing, historically, were low-grade concrete godowns that dotted the highways around many transit hubs. GST, which came into force in 2017, was the first big bang moment for the sector. From a network of smaller warehouses across multiple states, set up to be tax efficient, companies now picked fewer but larger warehouses in more strategic locations since India became a single tax country. The larger warehouses are made of steel, are often pre-fabricated and more automated. Besides robotics, software systems drive the business. Technology giant IBM, which manages the back-end technology for FMCG companies such as Amul, said that Indian warehouses are likely to invest more in technologies that aid business continuity, going ahead. Data recovery services and cyber security solutions are two of them.

"We have had very mature policy level initiatives," said Singhal. "Besides GST, warehousing was given an infrastructure status and not a real estate status—it gives the sector better lending rates and better lending terms with higher limits." In addition, the warehousing sector allows 100% FDI. And in some states, developers can build warehousing parks with fewer approvals compared to other segments of real estate.

The China imperative

Just as the lockdown hit, Aditya Virwani, the chief operating officer of Embassy Group, moved into his father's farm house along with his brother Karan Virwani (the India chief of co-working company WeWork) and his step sister. It's family time. Even so, both the brothers are busy handling rent waiver requests from corporate clients who occupy the developer's sprawling offices.

"In warehousing, it is more about the fastest fish eating the slow fish rather than the big fish eating the small fish," said Aditya Virwani during a Zoom call. "Everyone is racing for scale right now. Because once you have scale, you can control rents," he added.

There is e-commerce, of course. But the rents of the future could come from manufacturing shifting from China. The virus outbreak is forcing companies to re-think their supply chains and India stands a chance to benefit. Global manufacturers would require world-class warehousing to store components and finished products.

"Capitalizing on the China opportunity will be massive," Virwani said. "It is something the government should

help with. The investment committees of private equity funds are pushing them to do more warehousing deals in India because they are foreseeing the same thing," he added.

Indeed, some state governments appear to be at work. The industries and mines department of the government of Gujarat said it is eyeing to increase its FDI from Japan as there is "a perceptible trust deficit between Japan and China post covid-19 outbreak". The Japanese government has announced a $2.2 billion economic stimulus package to help Japanese manufacturing units move out of China.

"We have already written to political and business authorities of Japan, inviting them to shift their commercial units and operations from China to Gujarat," Manoj Kumar Das, principal secretary of the industries and mines department, noted in a statement.

Manufacturing shifts, nevertheless, take a long time. Right now, industrial warehousing could gain because manufacturers aren't sure on the direction trade policies could take. "Inventory management will become more important now. Manufacturers will increase their inventories because they don't know what's going to happen in trade policy with China, going forward," Rajesh Jaggi, vice-chairman of real estate in Everstone Group, said.

There are negative riders to the industrial warehousing growth story. Many industrialists such as Niranjan Hiranandani warned that India could lose out on the exit-China story if politicians and the bureaucracy botch up. Over the last many years, China's exports in textiles have shrunk, for instance. That business has moved to Bangladesh, Vietnam, Sri Lanka and even Pakistan.

In conclusion

Besides, the warehousing apple-cart could tumble because of high land prices, about 30% of the project cost. Warehousing is a horizontal development and not a vertical one like other commercial spaces. The right shape of land is important, so is the right zone with access to road and rail networks.

"If you have to buy expensive land, it is a non-starter. Indian Railways has a lot of land, as does the government. For a sustainable logistics supply chain model, the government needs to open up these spaces," said an executive from a ports company who didn't want to be quoted. The government, for instance, can become a shareholder in a project where its equity participation is the land, he felt

Source : Livemint.com

●●●

'PRIORITISE CLEARANCE OF CARGO IN LONG STANDING CONTAINERS TO EASE EXPORTERS PAIN'

P MANOJ MUMBAI

SUNIL VASWANI, EXECUTIVE DIRECTOR, CONTAINER SHIPPING LINES ASSOCIATION (INDIA)

Sunil Vaswani, Executive Director, Container Shipping Lines Association (India), explains about distortion in demand and supply situation

The empty container shortage and therise in ocean freight for shipping cargo containers in the wake of a sudden surge in exports has led to a hue and cry from exporters with the trade bodies calling for an agency to regulate the liners.

Why are exporters angry?

This year the pandemic has created unprecedented circumstances for the trade globally. The shipping lines on their part have kept servicing the trade with vessel calls despite exports having been practically non-existent during the lockdown. Besides, the lines also independently offered extended free time on import containers and did all that they could to keep the supply chains functioning.

The pandemic has distorted the demand and supply situation globally. From India's perspective, the trade which was dominated by imports has now seen a sudden surge in exports and a drastic reduction in imports, something that no one really anticipated. The reduction in India's imports from China has had a major impact on the availability of containers for exports. This has created a major imbalance in the equipment (containers) situation.

During July-Sept 2020, India's exports in terms of volumes grew by 24 per cent while its imports reduced by 28 per cent compared to the same period in 2019.

As a result, the shipping lines which until July 2020 used to ship out empty containers from India, had to start repositioning empty containers into the country and move them inland to demand locations at a huge cost for the shipping lines.

This distortion in demand and supply, with its resultant impact on costs and rates, has not happened just in the case of India but in the case of the rest of the world too.

Besides, this is not just unique to container shipping but applies to airfreight as well.

Congestion at transshipment ports like Colombo, for instance, only adds to the lead time. The rail-road system in the United States is now congested causing delays of up to two days per container, adversely impacting the availability of empty boxes in other countries, including India.

Under the circumstances, does the CSLA have any suggestions to help improve the situation?

Currently, there are about 50,000 long standing containers waiting to be cleared across the country, some of them for years together. These need to be cleared by the Customs on priority so that they can be made available to the shipping lines for exports. This drive needs to be a consistent one and not just a one-off knee-jerk reaction.

How can the initial struggles with the roll-out of the Carotar Rules and face assessment of cargo be addressed?

The implementation of the "Carotar Rules", which allow Customs to check the antecedents of the importers have caused delays of 7-10 days in the assessment of the Bills of Entry, resulting in slow clearance and return of empty containers to the lines. Added to this is the delay caused by the faceless clearance introduced by Customs which takes up to 6/7 days to clear a Bill of Entry. This aggravates the shortage of containers for exports.

Associations like FIEO have suggested that the shipping lines reduce the free time on import containers so that empty containers could be made available for exports faster.

The 14-day quarantine imposed on vessels arriving from Chinese ports has resulted in ships having to wait for up to 3-4 days before berthing at Indian ports. This not only delays the discharge and the destuffing of import loads but also delays the availability of containers for export shipments.

This delays the whole cycle of several sailings put together and eventually results in a reduction in the number of sailings over a period of time, thereby causing a significant reduction in the number of export shipments.

The quarantine period for vessels arriving from Chinese ports needs to be reduced to 7 days as in the case of vessels arriving from other countries.

What about inland haulage issues?

It would also help if the Railways moved empty containers from ports to inland container depots free of cost to help reduce the empty repositioning cost for the exporters in the hinterland.

Besides, the benefit of the 5 per cent reduction in the freight for loaded containers announced by the Railways should be passed on to the shipping lines or end users.

There are suggestions that India should start manufacturing containers..

Manufacturing marine containers within the country would assist in the security of supply chains for exports. The government could consider making containers at state-run shipyards which already have the expertise in this. The government, though, would have to make this business viable through the lifting of fiscal hurdles.

What can the exporters do from their side to ease the situation?

It would help if the trade bodies/export promotion councils collected data from their respective members and furnished realistic advance projections of exports, origin/destination-wise, along with the type of equipment required, for at least an 8-12 week period, to the shipping lines, to enable themarrange for empty containers.

The current situation is not expected to last permanently but is unlikely to change overnight either.

Source: https://www.thehindubusinessline.com

●●●

CIRCULAR ECONOMY FOR PRODUCTIVITY AND SUSTAINABILITY

By and large, today's manufacturing takes raw materials from the environment and turns them into new products, which are then disposed into the environment after use. It is a linear process with a beginning and an end. In this system, limited raw materials eventually run out. Waste accumulates, either incurring expenses related to disposal or else polluting—indeed. In a circular economy, however, products are designed for durability, reuse and recyclability, and materials for new products come from old products. As much as possible, everything is reused, remanufactured, recycled back into a raw material, used as a source of energy, or as a last resort, disposed of.

India has the opportunity to save money, make money and do good by adopting the principles of the circular economy. It has the opportunity to leapfrog other economies and establish a leadership position. Traditionally, the Indian economy has been one where reusing, re-purposing and recycling have been second nature. In a world that is increasingly running out of natural resources, this thinking is an asset that must be leveraged by businesses, policymakers and citizens in an organized manner and expanded to include other elements to make the economy truly circular.

Several building blocks of circularity are deeply ingrained in Indian habits, as exemplified by the high rates of utilization and repair of vehicles and the distributed recovery and recycling of materials post-use. Often handled informally, these activities provide the only source of livelihoods to some of the poorest populations. By turning these existing trends into core development strategies, India could generate significant economic savings, massively cut down on carbon emissions.

Restorative and regenerative by design, a circular economy aims to keep products, components, and materials at their highest utility and value at all times. A circular economy is a continuous cycle that preserves and enhances natural capital, optimizes resource yields, and minimizes system risks by managing finite stocks and renewable flows. The concept of circular economy, a metaphor that neatly resonates with Mahatma Gandhi's ardent lifelong quest for efficiency in production, sufficiency in consumption and what he could well have called "conservancy" of resources and 'deficiency' in wastes, captures well the desirable characteristics of the future we will all have to live in – and how to get there.

The world's growing and the increasingly affluent population has caused an overuse of resources, higher price levels and increasing market volatility. An ambitious long-term vision of a circular economy, built on the current strengths of the Indian market and engaging business, policy, and education in its realization, could, on the contrary, provide the basis for a regenerative development path towards long-term prosperity.

A circular economy reduces resource dependency and resource use, including energy thereby reining in production costs, narrowing market exposure and limiting costs stemming from resource extraction and generation. It additionally leads to the introduction of economically viable methods of reducing pollution, and separating harmful from reusable waste material.

THE PRINCIPLES OF CIRCULAR ECONOMY

Principle 1: Preserve and enhance natural capital by controlling finite stocks and balancing renewable resource flows.

A circular economy enhances natural capital by encouraging flows of nutrients within the system and creating the conditions for regeneration of soil and other living systems. Whenever possible, utility is provided virtually or as a service rather than as a physical product. When resources are needed, the circular system favors technologies and processes that use renewable or better performing resources. The circular economy seeks to address several challenges to natural capital:-

1. Threatened stock and variable quality of fresh water.
2. Soil degradation.
3. Loss of biodiversity
4. Depletion of fish stocks and degradation of marine ecosystems.

Principle 2: Optimize resource yields by circulating products, components, and materials at their highest utility at all times, in both technical and biological cycles.

This entails designing for refurbishing, remanufacturing, and recycling to keep products, components, and materials circulating and contributing to the economy.

As in a linear system, increasing yields is useful and requires ongoing system improvements. But unlike a linear system, a circular system would not compromise effectiveness – which requires a fine balance between efficiency and long-term resilience. The circular economy seeks to address several resource challenges.

1. **Materials consumption:** If India maintains the economic development pace of the past few decades, it stands to more than triple its demand

for resources by 2030. This process could be effectively contained by adopting the circular economy principles.

2. **Nutrient loss:** The deterioration of soil due to loss of nutrients is a significant trend in India and this could be reduced for effective gains.

Principle 3: Foster system effectiveness by revealing and designing out negative externalities.

The negative externalities of economic activity include land degradation; air, water, and noise pollution; release of toxic substances; and GHG emissions. A circular economy would reveal the cost of these externalities – in other words, outline their risks and potential economic impact.

TOWARDS CIRCULAR ECONOMY BY 3R PRINCIPLE

Circular consumption is an indispensible part of a circular economic system for sustaining the economic growth and mitigating environmental degradation and resource depletion. The challenge to put circular consumption into practice can be addressed by 3R Principle that is based on Reduce, Recycle and Reuse. The principle reflects on the scope for converting wastes into valuable products and making the Mission Zero Waste a reality. This Mission emphasizes 100% scientific waste management in 400 targeted cities of the country.

Solid Waste Management

In respect of Indian Solid Waste Management scenario it is indicative that MSW Generation is estimated to be 1.43 lakh Tonnes per day. Of this MSW Processed/ Treated is about 35,602 Tonnes per day (24.8%). Further, No. of wards with 100% D2D (Door to Door) collection being achieved has been in 61,846 (73% of wards) and that the No. of wards with 100% Source Segregation are 30,749 (36% of wards).

Table 2.1: The typical composition of Municipal Solid Waste in India

Type	Total (Metric Tonnes)	%
Biodegradable	62,510	47%
Paper	10,640	8%
Rubber	11,970	9%
Metal	1,330	1%
Glass	1,330	1%
Rags	6,650	5%
Others	5,320	4%
Inert	33,250	25%

The Government of India Policy Interventions to encourage conversion of Waste to Wealth and various Ministries and Departments are engaged in the implementation process. In this regard 35% funding is being provided as Viability Gap Funding/Grant by Government of India for all Solid Waste management projects like

a. Waste to Compost,
b. Waste to Energy,
c. Plastics in Road Construction,
d. Construction and Demolition Waste Management

In addition are the development and notification of six Waste Management Rules, 2016 and capacity building initiatives in cities for various stakeholders. These Rules are concerning Solid Waste Management, Plastic Waste Management, Construction and Demolition Waste, Hazardous Wastes, Bio-Medical Wastes, Electronic Wastes Management.

Further, is the initiative in India on Swachh Survekshan (i.e. Cleanliness Survey) for cities, and development of the star rating system to achieve garbage free cities.

Many countries have started practicing circular economy and lessons can be learnt on futuristic approaches like clustering ULBs of South Australia, for effective integrated solid waste management, where larger ULBs could lead the action is worth following.

In Ambikapur, India administrative reforms like habitation clusters, contract management, partnerships, open technology sourcing, renewable obligations and awareness campaigns, etc. can result in novel and customized solutions to the waste problems towards a closed loop waste cycle.

Perspectives on industry initiatives on 3R also are reflected upon and highlighted in Figure 1.0 below.

Figure 1.0: A pictorial feature of industry initiatives on 3R

In essence, it is to be highlighted that the behavioral change in society are pivotal to be achieved by various interventions including infrastructural, financial and technological initiatives which could help progress towards a zero waste society within the framework of circular economy.

Reducing Water Pollution

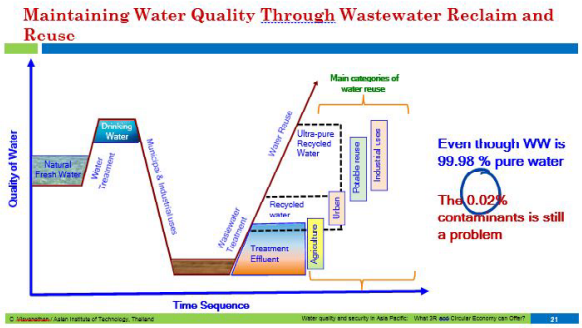
The significance of water security is linked to various sustainable development goals. Water is critical for socio-economic development, healthy ecosystems and for human survival itself. The pressure on the global water resources (both surface and ground water) is increasing due to growing gap between water supply and demand, anthropogenic water pollution and climate

change impacts. Urban centers in the Asia Pacific regions are highly vulnerable to water security issues and urban resilience is a concern internationally. The concern regarding water sharing disputes (Domestic and international) was also an issue to be tackled. On the domestic water consumption side, focus should be on development of innovative water saving appliances. Rainwater harvesting will be the corner stone of the urban circular water economy development.

Advancing 3Rs and circular economy encourage the use of treated water and sustainable use of water resources to achieve a number of benefits such as the safe drinking water and effective sanitation system, among others. As regards wastewater reuse applications the key is innovations in wastewater treatment and recycling technologies. A perspective on this is outlined in figure 2.0.

Figure 2.0: Waste water treatment and reclamation perspective

Figure 2.0: Waste water treatment and reclamation perspective



To achieve the circular water economy option, there is a need to revisit the conventional centralized water and wastewater treatment to decentralized system which promotes better water reuse applications.

There are other innovative solutions like Phyco-remediation that refers to the use of algae for treating wastewater. Algae are green, microscopic plants that survived extremely harsh, prehistoric environmental conditions and helped produce oxygen on earth and bring down the earth's temperatures. Nature also uses algae to treat rivers and lakes. Since millennia, our civilizations have spawned near rivers, but pollution had never been a problem because of the remediation work carried out by algae. However, because of the surge in population growth, construction of dams and barrages and especially because of the addition of industrial effluents, the pollution loads in rivers have shot up significantly. The experimental outcomes were encouraging when micro-algae based water treatment technology was used with a 10 Km stretch of river Mausam at Malegaon and 0.4 Acres Lakshmi Tal at Jhansi on sample basis.

Preventing Land Pollution

The problem of land degradation is due to open dumping, open burning, spillages of oil and other contaminants etc., and other causes such as deforestation, over grazing, agricultural activities, industrialization, over exploitation for fuel wood etc.

The land pollution has a number of adverse effects on the physical, chemical and biological properties of the land that reduces its productivity. Further, the land becomes breeding ground for disease causing insects and vectors. Open burning and illegal dumping also allow the percolation of harmful substances in the food chain.

It has also been seen from the record that more than 35% of the fifty biggest landfill sites are located in the Asia and the Pacific.

There is huge potential for implementing 3R and circular economic development strategies to prevent physical and chemical degradation of land as well as effective utilization of organic waste and biomass for sustainable farming and energy. Remediation of already polluted land, rehabilitation of deserted lands, landfill mining, utilization of organic waste and biomass for sustainable farming, continuous mass campaign to prevent open burning, waste recovery through composting and enforcing appropriate legislation encouraging earning from the waste recovered materials, are some of the solutions. It is required to have a national target for respective States, national and state level strategies and policy development, robust supply chain and technological support to prevent the land degradation for realizing circular economy.

Prevention of Air Pollution

Air pollution is an intensifying environmental challenge in Asia and the Pacific, where uncontrolled, unmonitored and unregulated biomass burning and open burning from open dump sites is still inevitable. Air pollutants like particulate matter, black carbon, methane, etc. are released to the atmosphere, essentially interrelated to short-lived climate pollutants (SLCP) or greenhouse gas emissions with significant impacts on human health, agriculture, forests, and habitats. Air pollution affects environmental health, social, and economic aspects. Exposure to air pollution in outdoor and indoor costs USD 5.11 trillion per year and has consequential health impact in terms of non-communicable diseases i.e. stroke, heart disease, respiratory disease and lung cancer.

In terms of trans-state air pollution from biomass burning creating haze required green agriculture system for utilization of biomass residue. Sustainable management of air emissions and air quality management strategies are key to achieve circular economy.

Protection of Coastal and Marine Ecosystem

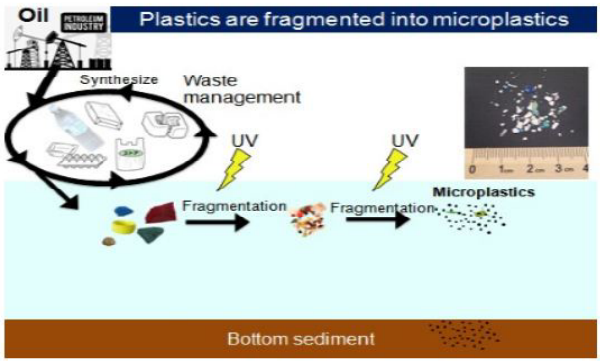
Impact on coastal and marine ecosystem due to poor waste disposal practices, in particular the plastics waste, is a major concern. Scientific studies say more than 5 trillions of plastics are floating in ocean, whereas much more are deposited and accumulated in bottom sediments. They bring toxic chemicals to organisms such as fish and shellfish, causing concern about food

security. Disposal of micro-plastics to the ocean has major impacts on the marine ecosystem as these materials are ingested by marine organisms causing severe food security issues.

There is a need to consider wide spectrum of 3R options as part of circular economy to reduce the generation of plastic wastes. Among them, reduction of production of unnecessary single-use plastics could be helpful, considering long-term environmental impacts.

Indian stake holders can learn from Global initiatives such as Clean Seas Campaign and North West Plastic Action Plan (NOWPAP) for solving the issue. In this context strengthening the policies related to marine pollution, capacity building of local and national bodies, development of marine research and development activities and raising awareness can be critical.

Figure 3.0: Plastics in Oceans and Water Bodies – Impacts and Pathway to food chain



Greening of Small Manufacturing Enterprises (SME)

Greening of SMEs is important to achieve decoupling economic progress vis a vis resource consumption leading to circular economy. It is indicated that SMEs are the major contributors worldwide to industrial activity as part of supply chains and that significant pollution is also generated by SMEs. A perspective on Resource Efficient Cleaner Production (RECP) initiative and the challenges faced in effecting behavioral change in SMEs and obtaining responsiveness towards modernization reflected upon, with recognition that technology costs can be a deterrent, and that governmental initiatives and support can enable and assist SMEs towards green industrial development.

In order to green SMEs, a concept of GLEAN (Green Lean) which is a combination of Material Flow Cost Accounting (MFCA) and Lean Management, developed by NPC could be put into practice. The application of MFCA in production has been demonstrated in SMEs and the implication of adopting MFCA with LEAN is that it clearly leads to higher process efficiency and reduction/elimination of waste. The fundamental strategy behind implementing MFCA with LEAN is the evaluation of the operations and activities in terms of efficiencies. Since MFCA is a management accounting method, it does not automatically resolve this loss. In fact, it is necessary to clarify the cause of the loss occurring in each process and change the design, materials/parts, manufacturing method, processing, equipment, etc., and to eliminate the cause, for which PDCA (Plan, Do, Check and Act) approach of LEAN Principles when clubbed with MFCA fits well in the framework and delivers sustainable outcomes to help SMEs to achieve resource efficiency.

CAPTURING THE BENEFITS OF CIRCULAR ECONOMY

The Circular Economy is a new way of creating value, and ultimately prosperity. It works by extending product lifespan through improved design and servicing, and relocating waste from the end of the supply chain to the beginning-in effect, using resources more efficiently by using them over and over and only once.

Indian businesses are well placed to lead the way in the transition. Businesses stand to realise substantial profit from the circular economy opportunities. Five recommendations could guide companies seeking to capture this value.

- Build circular economy knowledge and capacity.
- Innovate to create new products and business models and demonstrate their success.
- Integrate circular economy principles into strategy and processes.
- Collaborate with other businesses, policymakers, and the informal economy.
- Invest in circular economy opportunities.

Profit opportunities for businesses through increasing innovation and demand for new business services.: By applying circular economy principles, businesses could generate new ideas and explore new ways of working, especially in digital technology. Indian innovation hubs could help businesses implement new approaches and capture new profit opportunities.

Material cost savings and reduced exposure to resource price volatility. A circular economy would significantly lower costs for businesses related to the use of virgin materials. Less material use would also reduce their exposure to volatile raw materials prices and strengthen resilience.

Economic growth. As mentioned above, circular economy practices are making more productive use of material inputs (including looping of products, components, and materials) and increasing revenue from emerging circular activities. While some sectors (e.g. the material extraction industry) would expect reduced activities, overall more activity would happen across the economy, boosting economic growth.

Benefits for Citizens

1. **Lower cost for products and services.** In the circular economy scenario, cash-out cost in the three focus areas would be [1] 14 lakh crore (US$ 218 billion, 11% of India's GDP) lower in 2030 and [1] 40 lakh crore (US$ 624 billion, 30% of India's GDP) lower in 2050, compared with the current scenario.
2. **Greater utility and choice**. The additional choice

or quality that circular models provide would enhance the utility, or benefit experienced by customers. Choice increases as producers provide systems that enable tailoring products or services to better meet customer needs. For example, applying circular economy principles in mobility would give customers more vehicle options, without increasing the number of vehicles on the road.

3. **Reduced negative externalities,** e.g. congestion, pollution. The analysis suggested beneficial impact from applying circular economy approaches to address issues like congestion, pollution, and ill health.

CIRCULAR ECONOMY'S OPPORTUNITIES IN INDIA

1. Cities and construction: As India invests in long-term infrastructure to improve citizens' quality of life, for example through the Smart Cities Mission, it could incorporate circular economy principles into the design of the infrastructure needed to provide water, sanitation, and waste services at scale, creating effective urban nutrient and material cycles. More systemic planning of city spaces, integrated with circular mobility solutions, can contribute to higher air quality, lower congestion, and reduced urban sprawl. Flexible use of buildings and urban spaces, enabled by digital applications, can increase utilizations rates, getting more value out of the same assets. Higher efficiency and lower overall building and infrastructure costs could also help meet the housing needs of the urban poor without compromising safety and quality.

Circular economy principles can contribute to this construction activity in ways that create economic value and decouple development from the use of virgin, non-renewable resources. Renewable and recycled materials and modular construction methods can minimize waste and reduce construction costs. Buildings can be designed to be adaptable to changing needs and contribute to the regenerative urban ecosystem during their use phase (energy generation, connection to nutrient cycling systems, etc.).

2. Food and Agriculture: India can adopt a regenerative, restorative agricultural system that combines modern technology with traditional practices to meet India's growing food demand. There is an urgent need for an agricultural system framework which retains natural capital, boosts economic and ecological resilience, and delivers a stable supply of fresh, healthy, and diverse food to India's growing population besides closing the gap in nutrient loops.

Leveraging the current small-farm structure, India could create large-scale networks of farmers, interconnected and symbiotic in their practices and committed to regenerative approaches. Combining local knowledge and traditional methods (like working with a large variety of species) with modern technology (like precision farming, and digitally enabled asset and knowledge-sharing systems) could increase yield while significantly decreasing requirements for resources such as water, synthetic fertilizers and pesticides.

Reducing food waste across the supply chain could make the Indian food system even more effective. This would require optimizing production and digitising food supply chains to match supply and demand more easily. Urban and peri-urban farming can bring food production closer to consumption, reducing food waste and transportation requirements. Composting and an aerobically digesting food waste with no other valuable use and post consumption nutrients (those contained in human excreta) allows restoration of nutrients to the soil and production of energy.

3. Mobility and vehicle manufacturing: Circular economy principles can contribute to a mobility system that would meet the growing needs of the Indian population, especially in cities, while limiting negative externalities, such as GHG emissions, congestion, and pollution.

Taking reparability, remanufacturing, and recycling into account in vehicle design and creating the appropriate reverse cycle infrastructure can reduce the need for virgin, non-renewable resources and energy. Building vehicles that rely on zero-emission propulsion technology could reduce negative externalities like GHG emissions, pollution, and dependence on imported fossil fuels. As car ownership is currently low, adoption could be rapid as ownership expands.

A multimodal, door-to-door, on-demand mobility system, embracing vehicle-sharing trends and leveraging digital innovation, could provide efficient and effective transportation with high vehicle usage and occupancy rates. Mass transit as the backbone combined with other forms of transport – including vehicle as a service – for convenient last-mile connectivity can create convenient door-to-door journeys. Technological innovation can help plan these journeys and make travelling safer and faster.

POLICY INITIATIVES : Government of India has done substantial work towards Policy interventions and formulation such as

1. Notification of National Ambient Air Quality Standards;
2. Formulation of environmental regulations / statutes;
3. Setting up of monitoring network for assessment of ambient air quality;
4. Introduction of cleaner / alternate fuels like gaseous fuel (CNG, LPG etc.), ethanol blend etc;
5. Promotion of cleaner production processes.
6. Launching of National Air Quality index by the Prime Minister in April, 2015;
7. Implementation of Bharat Stage IV (BS-IV) norms in 63 selected cities and universalization of BS-IV by 2017;
8. Decision taken to leapfrog directly from BS-IV to BS-VI fuel standards by 1st April, 2020;

9. Taxing polluting vehicles and incentivizing hybrid and electric vehicles;
10. Comprehensive amendments to various Waste Management Rules including Municipal Solid Waste, Plastic Waste, Hazardous Waste, Bio-medical Waste and Electronic Waste notified; .
11. Notification of Construction and Demolition Waste Management Rules;
12. Ban on burning of leaves, biomass, municipal solid waste;
13. Promotion of public transport network of metro, buses, e-rickshaws and promotion of car pooling, Pollution Under Control, lane discipline, vehicle maintenance;
14. Revision of existing environmental standards and formulation of new standards for prevention and control of pollution from industries;
15. Regular co-ordination meetings at official and ministerial level with Delhi and other State Governments within the NCR;
16. Issuance of directions under Section 5 of Environment (Protection) Act, 1986 and under Section 18(1)(b) of Water (Prevention and Control of Pollution) Act, 1974 and Air (Prevention and Control of Pollution) Act, 1981;
17. Installation of on-line continuous (24x7) monitoring devices by major industries.
18. Preparation of action plan for sewage management and restoration of water quality in aquatic resources by State Governments;
19. Implementation of National River Conservation Plan for abatement of pollution in identified stretches of various rivers and undertaking conservation activities which inter-alia include interception & diversion of raw sewage, construction of sewerage systems, setting up of sewage treatment plants, low cost sanitation facilities, education and awareness creation, community participation, electric/improved wood crematoria and river front development.
20. India's National Manufacturing Policy focuses on promotion and adoption of Green technologies and Green manufacturing especially with its MSMEs.
21. Government of India has embarked upon an initiative of creating 100 smart cities across the country and waste management & resource conservation are significant part of this important initiative.
22. Government of India is in process of finalizing national goals under UN's sustainable development goals.
23. Government of India has promoted the concept of Zero Effect Zero Defect Effect in order to achieve Green economic growth.
24. Government of India has emphasized focused on Development of MSMEs and making them competitive and sustainable in order to achieve increased economic growth in manufacturing sector.

The following actions are required to lead the way to transition to Circular Economy:-

1. Set direction and show commitment.
2. Create enabling regulatory frameworks and remove policy barriers.
3. Represent the interests of groups like the informal sector, or facilitate collaborative initiatives among businesses, the public sector, and other stakeholders
4. Support circular models through public procurement and infrastructure.
5. Embed circular economy principles into education.
6. Conduct research and pilot projects to create a knowledge base and establish proof points.

The following dedicated activities during the Productivity Week Celebration shall play important supporting roles in realizing the desired actions to bring circular economy into the system:

1. On Foundation day, you may invite a High Dignitaries to chair the panel sessions on how to bring consciousnesses to accelerate the implementation of the concepts in their respective units.
2. Conduct internal workshop on the selected theme to capture the various initiatives undertaken.
3. Conduct Seminar/Conference on Circular Economy with the support of experts from Academia, MSME, Consultants as knowledge partners, etc.
4. Invite NPC to co-sponsor/co-chair events like "Youth Festivals", Debates" or other competitions on the theme selected.
5. Invite NPC to co-chair Productivity Improvement Committees of the organization.
6. Conduct Talk Show on the achievements, way forward, outcomes of Industry 4.0 through Community Radio/local TV channels

The following information is essentially required:

1. Schedule of activities planned during the productivity week like date of event, title, objective, venue, etc.
2. Details of publicity undertaken before/after the events like posts on social media, organization's website, newspaper, etc.
3. Details of activities conducted successfully like date of event, title, details of Invited Guests, attendance of participants, significant highlights, outcomes achieved, etc.

Source : NPC

●●●

WTO UPDATE

TRADE FORECAST – OCTOBER 2020

TRADE SHOWS SIGNS OF REBOUND FROM COVID-19, RECOVERY STILL UNCERTAIN

World trade shows signs of bouncing back from a deep, COVID-19 induced slump, but World Trade Organization economists caution that any recovery could be disrupted by the ongoing pandemic effects.

MAIN POINTS

- World merchandise trade volume is forecast to fall 9.2% in 2020.
- The projected decline is less than the 12.9% drop foreseen in the optimistic scenario from the April trade forecast.
- Trade volume growth should rebound to 7.2% in 2021 but will remain well below the pre-crisis trend.
- Global GDP will fall by 4.8% in 2020 before rising by 4.9% in 2021.
- The trade decline in Asia of 4.5% for exports and 4.4% for imports in 2020 will be smaller than in other regions.
- Downside risks still predominate, particularly if there is resurgence of COVID-19 cases in the coming months.
- The 14.3% quarter-on-quarter decline in world merchandise trade in the second quarter is the largest on record, but high-frequency data point to a partial rebound in the third quarter.

The WTO now forecasts a 9.2% decline in the volume of world merchandise trade for 2020, followed by a 7.2% rise in 2021 (Chart 1). These estimates are subject to an unusually high degree of uncertainty since they depend on the evolution of the pandemic and government responses to it.

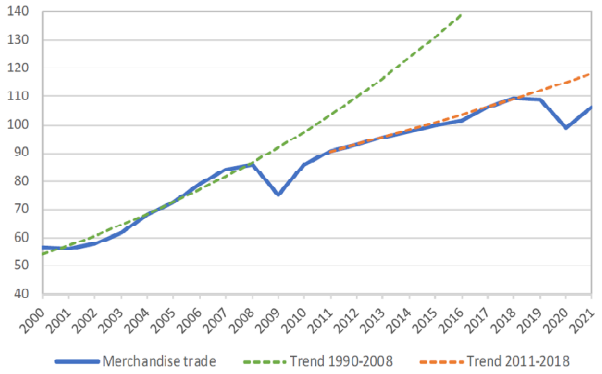
Current data suggests a projected decline for the current year that is less severe than the 12.9% drop foreseen under the more optimistic of two scenarios outlined in the WTO's April trade forecast. Strong trade performance in June and July have brought some signs of optimism for overall trade growth in 2020. Trade growth in COVID-19 related products was particularly strong in these months, showing trade's ability to help governments obtain needed supplies. Conversely, the forecast for next year is more pessimistic than the previous estimate of 21.3% growth, leaving merchandise trade well below its pre-pandemic trend in 2021 (Chart 1).

The performance of trade for the year to date exceeded expectations due to a surge in June and July as lockdowns were eased and economic activity accelerated. The pace of expansion could slow sharply once pent up demand is exhausted and business inventories have been replenished. More negative outcomes are possible if there is a resurgence of COVID 19 in the fourth quarter.

In contrast to trade, GDP fell more than expected in the first half of 2020, causing forecasts for the year to be downgraded. Consensus estimates now put the decline in world market-weighted GDP in 2020 at -4.8% compared to 2.5% under the more optimistic scenario outlined in the WTO's April forecast. GDP growth is expected to pick up to 4.9% in 2021, but this is highly dependent on policy measures and on the severity of the disease (Table 1).

Chart 1 - World merchandise trade volume, 2000 2021

Indices, 2015=100



Source: WTO Secretariat.

Note: Figures for 2020 and 2021 are projections.

As previously noted in the forecast update of 22 June, a weak trade recovery that fails to return trade to the pre-pandemic trend was a distinct possibility. This would result in merchandise trade growth of around 5% next year, rather than 20% in the case of a rapid return to the previous trajectory. The current trade forecast of 7.2% for 2021 appears to be closer to the "weak recovery" scenario than to a "quick return to trend".

Although the trade decline during the COVID-19

pandemic is similar in magnitude to the global financial crisis of 2008-09, the economic context is very different. The contraction in GDP has been much stronger in the current recession while the fall in trade has been more moderate. As a result, the volume of world merchandise trade is only expected to decline around twice as much as world GDP at market exchange rates, rather than six times as much during the 2009 collapse.

This divergent performance of trade during the COVID-19 outbreak has much to do with the nature of the pandemic and the policies used to combat it. Lockdowns and travel restrictions imposed significant supply-side constraints on national economies, drastically reducing output and employment in sectors that are usually resistant to business cycle fluctuations, particularly non-traded services. At the same time, robust monetary and fiscal policies have propped up incomes, allowing consumption and imports to rebound once lockdowns were eased.

Whether the recovery can be sustained over the medium term will depend on the strength of investment and employment. Both could be undermined if confidence is dented by new outbreaks of COVID-19, which might force governments to impose additional lockdowns. As a result, risks to the forecast are firmly on the downside. There is some limited upside potential if a vaccine or other medical treatments prove to be effective, but their impact would be less immediate.

Ballooning public debt could also weigh on trade and GDP growth over the longer term. Although rich countries are unlikely to face sovereign debt crises as a result of fiscal expansion, poorer ones may find their increased debt burdens extremely onerous. Deficit spending could also influence trade balances, reducing national saving and swelling trade deficits in some countries.

"The incidence of COVID-19 worldwide has fallen from its peak in the spring, but it remains stubbornly high in many areas. Trade has played a critical role in responding to the pandemic, allowing countries to secure access to vital food and medical supplies. Trade has also facilitated new ways of working during the crisis through the provision of traded IT products and services. One of the greatest risks for the global economy in the aftermath of the pandemic would be a descent into protectionism. International cooperation is essential as we move forward, and the WTO is the ideal forum to resolve any outstanding trade issues stemming from the crisis," Deputy Director-General Yi Xiaozhun said.

Table 1: Merchandise trade volume and real GDP, 2015-2021[a]
Annual % change

	2015	2016	2017	2018	2019	2020	2021
Volume of world merchandise trade[b]	2.3	1.4	4.7	2.9	-0.1	-9.2	7.2
Exports							
North America	2.6	0.7	3.4	3.8	1.0	-14.7	10.7
South and Central America	0.6	1.3	2.9	0.1	-2.2	-7.7	5.4
Europe	2.9	1.1	3.7	2.0	0.1	-11.7	8.2
Asia	1.3	2.3	6.7	3.7	0.9	-4.5	5.7
Other regions[c]	1.8	3.5	0.7	0.7	-2.9	-9.5	6.1
Imports							
North America	5.2	0.3	4.4	5.2	-0.4	-8.7	6.7
South and Central America	-7.6	-9.0	4.3	5.3	-2.1	-13.5	6.5
Europe	3.6	3.0	3.0	1.5	0.5	-10.3	8.7
Asia	2.1	2.2	8.4	4.9	-0.6	-4.4	6.2
Other regions[c]	-3.9	-4.5	3.4	0.3	1.5	-16.0	5.6
Real GDP at market exchange rates	2.8	2.4	3.1	2.8	2.2	-4.8	4.9
North America	2.8	1.7	2.4	2.8	2.1	-4.4	3.9
South and Central America	-0.8	-2.0	0.8	0.6	-0.2	-7.5	3.8
Europe	2.4	2.1	2.8	2.1	1.5	-7.3	5.2
Asia	4.3	4.2	4.8	4.1	3.9	-2.4	5.9
Other regions[c]	1.5	2.4	1.9	2.1	1.4	-5.5	3.5

a Figures for 2020 and 2021 are projections.
b Average of exports and imports.
c Other regions comprise Africa, Middle East and Commonwealth of Independent States (CIS), including associate and former member States.

Source: WTO Secretariat for trade, consensus estimates for GDP.

As Table 1 shows, all regions are expected to see big percentage increases in export and import volumes in 2021, but it should be noted that this growth will be off of a reduced base. Thus, even large percentage changes may not translate into better material conditions. For example, imports into Asia and South America are both expected to grow by 6.2% and 6.5% respectively next year, but Asia's rise would follow on a modest 4.4% decline this year while South America's would be on top of a steep 13.5% plunge in 2020. In this case Asia's imports would have substantially recovered while South America's trade would still be deeply depressed.

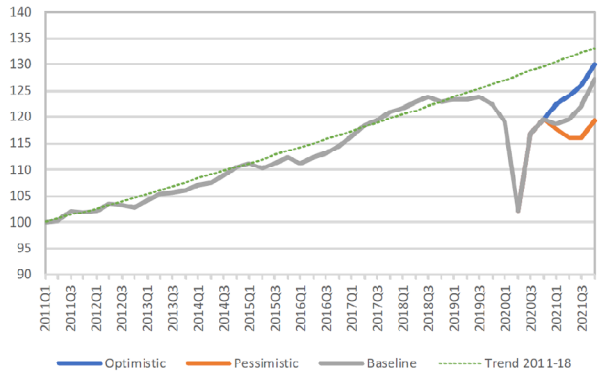
UPSIDE AND DOWNSIDE RISKS TO THE FORECAST

This box examines some of the risks associated with the forecast and other factors that might be relevant for trade over the medium-to-long term. According to recent estimates, a resurgence of COVID-19 requiring further lockdowns could reduce global GDP growth by 2 to 3 percentage points next year. Other downside risks include an uncertain outlook for fiscal policy and challenging job markets in many countries. Together, these risks could shave up to 4 percentage points off of world merchandise trade growth in 2021.

On the other hand, rapid deployment of an effective vaccine could boost confidence and raise output growth by 1 to 2 percentage points in 2021. This would add up to 3 percentage points to the pace of trade expansion. Other factors could contribute to better trade outcomes, including wealth effects from strong real estate and stock markets, and a growth boost from new technology sectors such as artificial intelligence and e-commerce. The pandemic has also stimulated innovation in traditional business sectors, which have leveraged information technology to deliver goods and services to customers at home.

Chart 2: Merchandise trade volume optimistic and pessimistic scenarios

(Index, 2011Q1=100)



Source: WTO Secretariat estimates.

Possible trajectories for trade are illustrated by Chart 2. Under the optimistic scenario, second waves of COVID-19 would be better managed due to accumulated experience with the disease, resulting in more limited lockdowns and a smaller economic impact. Meanwhile, a pessimistic scenario might not feature a quick return to the pre-pandemic trend because of increased debt burdens, high unemployment, and limited early availability of vaccines.

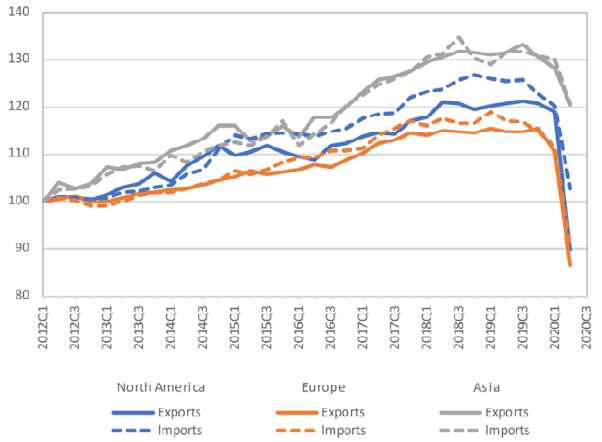
Shifts in the sectoral and regional composition of trade have been important during the pandemic and will continue to exert an influence during the recovery.

Additional trade developments

Global merchandise trade recorded its sharpest ever one-period decline in the second quarter, falling 14.3% compared to the previous period, but the impact differed strongly across regions (Chart 3). The steepest declines were in Europe and North America, where exports fell 24.5% and 21.8%, respectively. By comparison, Asian exports were relatively unaffected, dropping just 6.1%. During the same period imports were down 14.5% in North America and 19.3% in Europe but just 7.1% in Asia.

Chart 3: Merchandise exports and imports by region, 2012Q1-2020Q2

Volume index, 2012Q1=100

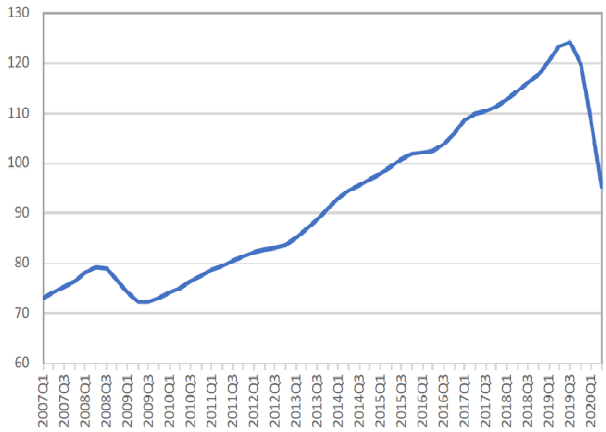


Source: WTO and UNCTAD.

The decline in services trade during the pandemic has been at least as strong as the fall in merchandise trade. There are no comprehensive statistics on services trade in volume terms due to the general unavailability of price data, but an approximate measure of services trade volume can be derived by adjusting nominal commercial services trade statistics to account for exchange rates and inflation. This is illustrated by Chart 4, which shows a much steeper year-on-year decline in global services trade during the current recession (-23%, peak-to-trough) than during the financial crisis (9%). The plunge was exacerbated by restrictions on international travel, which represents a key source of export earnings for many low-income countries.

Chart 4: World services trade activity index, 2007Q1-2020Q2

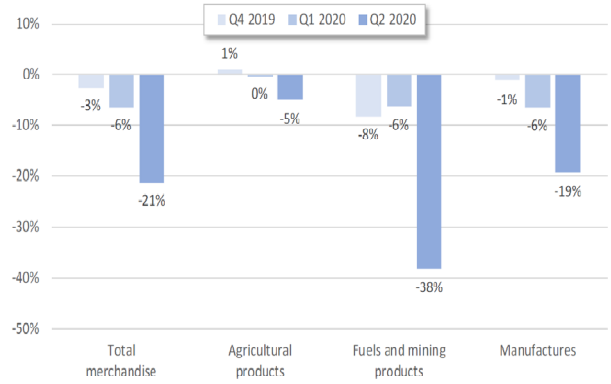
Index, 2015=100



Source: WTO Secretariat estimates.

The COVID-19 pandemic has devasted trade in certain types of goods while encouraging trade in others. This phenomenon is illustrated by Chart 5, which shows quarterly year-on-year growth in the US$ value of world trade by broad product groups, and by Chart 6, which shows monthly year-on-year growth in various categories of manufactured goods. In the first chart we see that trade in agricultural products fell less than the world average in the second quarter (-5% versus -21%) since food is a necessity that continued to be produced and shipped even under the strictest lockdown conditions. Meanwhile, trade in fuels and mining products fell precipitously (38%) as prices collapsed and people consumed less owing to travel restrictions. The drop in manufactured goods trade (-19%) was comparable to the decline in merchandise trade overall.

Chart 5: Year-on-year growth in world merchandise trade, 2019Q4-2020Q2
% change in US$ values

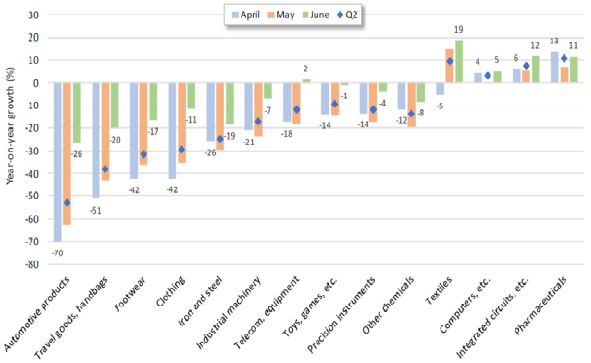


Source: WTO Secretariat estimates.

Chart 6 shows that trade in most manufactured goods bottomed out in April before starting to recover in May and June, but that the recovery was partial and incomplete. Automotive products recorded the biggest decline of any category (-70% in April), partly as a result of supply disruptions and partly because of a lack of demand from consumers. By June, automotive products trade had picked up to the point where it was only down 26% compared to the previous year. As for the whole of the second quarter, trade in this product group was down 53%. Travel goods and handbags also recorded a steep decline in April since this category includes a large proportion of luxury goods, consumption of which tends to rise and fall in line with business cycles.

By June, trade in telecommunications equipment, which includes smart phones, had risen by 2% from the same period a year ago. Trade in other types of electronics also held up during the crisis as households, businesses and governments upgraded computers and information technology infrastructure to facilitate working from home. Unsurprisingly, trade in pharmaceuticals rose during the pandemic as countries secured essential products from foreign suppliers. Although it is not shown in Chart 6, trade in personal protective equipment (PPE) recorded explosive growth, up 92% in the second quarter and 122% in May, a dramatic example of the positive contribution that trade has made to overcoming the pandemic.

Chart 6: Year-on-year growth in world manufactured goods trade by product, 2020Q2
% change in US$ values



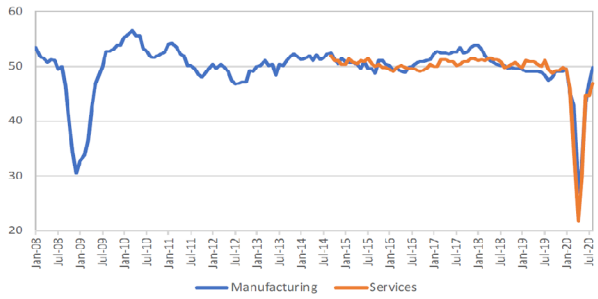
Source: WTO Secretariat estimates.

Supplementary indicators

Given the current extraordinary and often volatile economic conditions, we have set out to increasingly collect and analyse high-frequency data (i.e. statistics available at daily or weekly intervals). While the official data used in our models may lag for several weeks or months, relevant alternative high frequency data can provide early signs of changes in activity and trade by reflecting economic conditions at present. This can help in predicting current and subsequent data at longer, e.g. quarterly, intervals and provide a useful backdrop and context against which to check the plausibility of model outcomes. For illustration purposes, we have selected below two high frequency indicators related to trade – export orders and the number of international flights - and two variables reflecting economic activity and expectations – survey information from social media and copper futures.

Chart 7: New export orders from purchasing managers' indices, January 2008 – July 2020

(Index, base=50)



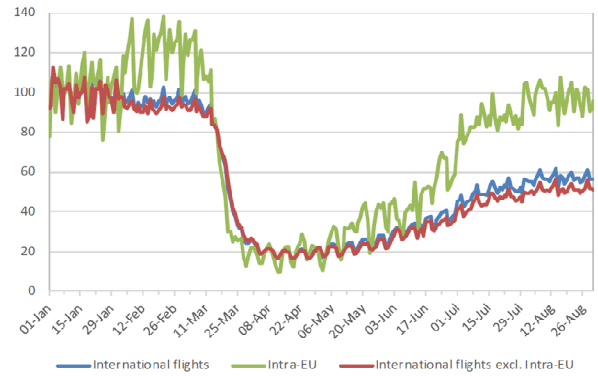
Note: Values greater than 50 indicate expansion while values less than 50 denote contraction.

Source: JPMorgan/IHS Markit.

Chart 7 shows export orders based on purchasing managers' indices, which fell to record lows during the pandemic but have since rebounded sharply. The manufacturing index dropped to 27.1 in April, relative to a baseline of 50, while the service index fell to 21.8. The former was back on trend (49.9) at the end of August while the latter was near trend (47.1). Export orders tend to be a leading indicator of trade activity, but whether they retain their predictive power during the unusual COVID-19 pandemic remains to be seen.

Chart 8: International commercial flights, 1 January 2020 — 31 August 2020

(Index, week of 1 January = 100)

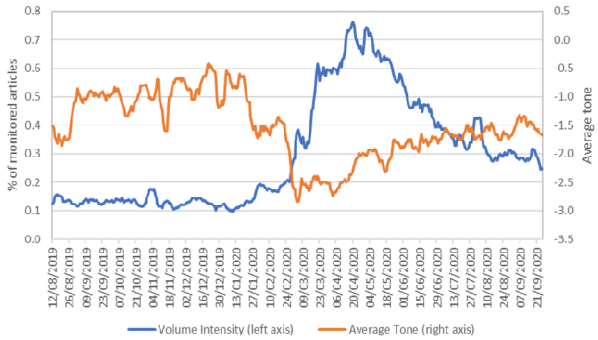


Source: OpenSky Network and WTO Secretariat Calculations.

Chart 8 shows the number of international flights per day recorded by the OpenSky Network since the start of 2020. Flights worldwide fell around 80% between early January and mid-April, with international flights declining more than domestic ones. Total flights have recorded a gradual recovery since then, rising to 57% of their level at the start of the year. The recovery has been stronger within the European Union, with intra-EU flights rising to 95% of the level in January. Cargo flights could foreshadow recovery in goods trade while passenger flights suggest improvement in services trade.

Chart 9: Illustration of phrases related to economic activity, 12 August 2019 – 25 September 2020

% and index



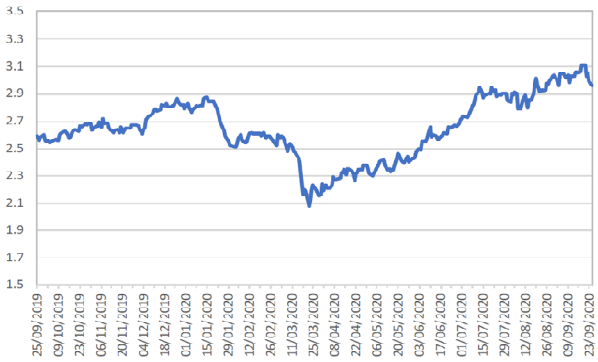
Source: The GDELT Project Summary Service.

Chart 9 shows the daily volume and average tone of news reports containing the phrase "economic activity", as monitored by the GDELT Project Summary Service. Press reporting was already negative before the pandemic, bottoming out in March as the threat to the global economy became evident. Changes in tone since then suggest that views on the global economy were gradually improving, but that they have turned negative in recent days. This is a cause for concern and will be monitored going forward.

Chart 10 shows the daily price of futures contracts for copper, which is a widely recognized leading indicator of economic activity due to the importance of this metal in many areas of manufacturing. Standardized contracts are traded on the COMEX exchange, a division of the Chicago Mercantile Exchange (CME). Copper futures have risen 42% since mid-March, reflecting an overall improvement in economic sentiment that has taken a negative turn recently. This is another sign of concern that bears watching.

Chart 10: COMEX copper futures, 25 September 2019 — 25 September 2020

(US$ per pound)



Source: Chicago Mercantile Exchange (CME).

●●●

BRANCH NEWS

■ ALWAR BRANCH

ALWAR BRANCH

The Executive committee of Indian Institute of Materials Management , Alwar Branch conducted a Brainstorming session on 5/10/2020 at Hotel RedFOX , Lemontree Alwar.

The Branch Chairman and Mr. Lalit Raj Meena founder Chairman of the branch briefed the participating Members about the Branch activities, membership, Admissions in IIMM Courses.

However all the members of the team felt that we have to put more efforts on the following areas.

1. Membership development . The present Membership of Branch is 96 and during the session it was decided that by March 2021 the membership of the branch should be achieved upto 200+.
2. Mr. L R Meena briefed that as on date the branch is admitted 5 PGDMM students . It was decided to to admit 5 more students to make it to 10 . Each member to make efforts to meet target.
3. Training and Seminar - Due to impact of the COVID 19 the branch could not conduct any program since March 20 and decided to have One program in January 2021 and one training program i in February 2021.
4. Annual day Celebration of the branch - In April 2020 the branch could celebrate the annual day due to COVID and ddecided to celebrate the same in Grand way in April 2021. The date will be decided in December after examining the Impact of Covid.

●●●

MATERIALS MANAGEMENT REVIEW (MMR)

Annual Subscription (for 12 Issues) Rs. 1000.00

Order Form / Renewal Form

Subs. No.: P.N._____

Name of the Subscriber / Organization _____

Address of the Organization _____

Phone _____ Fax _____ E-mail _____

Subscription Period

From (month year)_____ to (Month, Year)_____

Payment enclosed

Cheque / Draft (Favouring IIMM, Payable at Mumbai) No._____ Dated _____
for Rs._____ Drawn on Bank _____
Branch_____.

Please bill us

Signature of the Subscriber_____ Subscription No._____

Please return the form to :

Indian Institute of Materials Management (IIMM)
4598/12 B, Ist Floor, Ansari Road, Darya Ganj, New Delhi - 110 002.
Phones : 011-43615373 Fax: 91-11-43575373
E-mail: iimm2delhi@gmail.com & iimmdelhimmr@gmail.com
Website : www.iimm.org

ADVERTISEMENT TARIFFS

Position		Monthly Rate (Rs.)	Annually Rate (Rs.)
Back Cover	(4 Colors)	30,000.00	2,50,000.00
II/III Cover	(4 Colors)	25,000.00	2,00,000.00
Full Page	(4 Colors)	20,000.00	1,75,000.00
Full Page	(B/W)	15,000.00	1,25,000.00
Half Page	(B/W)	10,000.00	1,00,000.00
Quarter Page	(B/W)	8,000.00	75,000.00
Strip		5,000.00	50,000.00
Tender Notice	(F/P B/W)	20,000.00	
Placement News	(H/P B/W)	10,000.00	

Advertisement material alongwith Cheque / Demand Draft should be drawn in favour of IIMM Mumbai and despatched at the following address

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: iimm2delhi@gmail.com & iimmdelhimmr@gmail.com Website : www.iimm.org

Add Rs. 20/- Extra for Outstation Cheques.

EXECUTIVE HEALTH

SALT COULD BE COMPROMISING YOUR IMMUNE SYSTEM

WELLNESS

Are you always reaching for the salt shaker at mealtime? Do you eat fast food or processed food? Do you eat out? If you answered yes, then you are likely one of the 90% of Americans who consume too much salt in their diet. 90% of us! So that's most of us. But at Wellness we're concerned about this because new research shows that while those delicious crystals might ramp up the flavor, they can have an extremely detrimental effect on the immune system. We're sharing the truth about salt today to help you stay safe.

How Much Salt is Too Much Salt?

Most of us are overdoing it with salt (sodium chloride). In fact, the American Heart Association (AHA) says that 9 out of 10 Americans consume well over the recommended daily intake almost every single day. The thing is that it seems so innocuous, right? It makes the food taste better and how could something so small have such a big impact? But it really does and the impact is a little shocking.

Salt Intake Recommendations

The Department of Health and Human Services (DHS) puts out dietary guidelines on this very important issue precisely because of the system-wide impact that our salt intake has. They recommend eating **no more than 2,300 mg of sodium per day**. That's about the amount of plain salt that fits into a level teaspoon. But most people consume around twice that amount every day. This recommendation is important for a number of reasons. First, there is evidence that excess salt can raise blood pressure. Which most people handily ignore but hypertension directly contributes to our risk for stroke and heart disease.

New Research on Salt and the Immune System

As if that weren't enough, new research published in Science Translational Medicine also suggests that too much salt can have a harmful effect on the immune system. The research indicates that salt inhibits the body's ability to destroy bacteria within organs, which could make it harder to fight off infection.Another study from the University Hospital of Bonn in Germany revealed a similar conclusion. Researchers worked with mice who had active E. coli infections of the kidney, feeding them a high-sodium diet. Immune response to the infection was significantly worse in comparison to healthy mice who ate just enough salt.

To find out whether these results were just a local effect on the kidneys, researchers also infected the mice with Listeria. They discovered that the full-body infection also worsened when the animals took in too much salt.Study leaders were surprised since earlier research indicated that excess salt actually resulted in faster healing for laboratory mice infected with skin parasites. Previous studies showed that macrophages (immune cells that attack and eat parasites) were highly active in the presence of salt. This led to the conclusion that salt has an immune-enhancing effect, but this new research calls that broad assumption into question.This is an important finding, but let's talk a bit about what it means.

Salt Intake and Immune Function in Humans

Researchers at the University of Bonn didn't just test their theory on mice. They also confirmed their results in a human study. They put volunteers on a diet consisting of 6 g of additional salt on top of their regular daily intake. That's about the equivalent of giving participants two fast food meals every day.At the end of one week, the volunteers eating the extra salt had increased levels of glucocorticoids. These naturally-occurring steroids have many functions, such as the inhibition of inflammation. They also help our bodies respond to stress, as well as process sugar and fat. Glucocorticoids are also known for their immunosuppressant properties. In fact, a similar

substance called cortisone is often used in medicine to treat certain health conditions, such as autoimmune arthritis. In addition to the raised glucocorticoid levels, scientists found something else. They extracted neutrophils from the blood of the participants and found that they were less effective at killing bacteria in the presence of a high salt diet.

While more research is needed to confirm these results, scientists are now speculating that reducing salt in our diets might help to fight bacterial infections. This may be especially important for anyone who is immunocompromised or suffering from chronic kidney infections. Salt intake has been questioned by leading doctors of nutrition for some time. But as the research catches up with observational studies, we're starting to see more and more that we all need to watch our salt intake more carefully, and for reasons far beyond what we previously believed.

Allergies May Help Us Avoid COVID-19

BY WELLNESS EDITOR

Allergies can make breathing difficult, so it's safe to assume they might make upper respiratory infections even more severe. But if that's the case then why is it that allergy sufferers appear even less likely to experience extreme COVID-19 symptoms? The answer could be as simple as it is surprising.

Effects of Allergies on the Body

Allergies are the result of mistakes the immune system makes, flagging pollen or other particles as invaders and sending histamines to hold and attack them. According to Mayo Clinic, we can have these responses for several reasons, but the results all lead to increased risks for asthma, sinusitis, ear infections and, in some extreme cases, anaphylaxis.

The Asthma and Allergy Foundation of America adds that people in this risk group are more likely to suffer serious complications with the flu. People who have both allergies and asthma may be at the highest risk. But, and this is the important thing to note: COVID-19 is nothing like the flu.

Allergies May Provide COVID-19 Protection

It would be reasonable to assume allergies make people more prone to all respiratory infections, but this may not always be the case. Studies have found that allergies can, for some people, lead to less severe symptoms when exposed to common-cold rhinoviruses. Though experts had struggled to pinpoint the reason. It turns out that rhinoviruses and coronaviruses have something in common: They use the same entry points into the body, and allergies can affect how those work.

Allergies and COVID-19

A new article published in The Journal of Allergy and Clinical Immunology, which used the coronavirus that causes COVID-19 in its study, may have finally nailed the specifics. According to the findings, one of the effects of allergies is having reduced numbers of a type of cell receptor called ACE2. This lowered cell count makes the respiratory tract less vulnerable to this viral infection because the viral invaders in COVID-19 use ACE2 like a doorway into cells, so the fewer of these receptors an organ is expressing, the fewer places the virus has to get in.

Allergies are Not Guaranteed Protection Against COVID-19

Having allergies may offer **some** protection against COVID-19 and a few other infections, but it can't **prevent** any of them. Having fewer ACE2 receptors isn't the same as having zero. The doorways are still available, even if there aren't as many of them—and it really only takes one. **No one should assume immunity against this virus.** Even those who have already had it.

Allergy sufferers might have some good news, but it's not time to celebrate quite yet. Until COVID-19 retires to a horse ranch somewhere, none of us can breathe easy. It's up to each of us to do our part to reduce the spread and save lives. By which we mean, please wear a mask and maintain social distance—let's all take care of each other.

Source: Wellness.com

●●●

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 : iimmnhq55@gmail.com, 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
C/o. Training & Placement Cell
GF-19, JNEC Campus, CIDCO, N-6
Aurangabad - 431001. Ph : 0240-2473339
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
Room No. B-237, Purchase Dept.,
Ispat Bhawan, Bokaro Steel City - 827001
Ph.: 06542-240263/280768
E-mail : iimmbokarobranch@gmail.com

BURNPUR BRANCH
Indian Institute of Materials Management
Matls. Dept. New Matls. Bldg.
IISCO, Burnpur Works
Burnpur - 713325 (West Bengal)
Tel: 0341-2240523/09434777116

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
S-6 & S7,2nd Floor, Vasco Citicentre
Opp: Canara Bank, Swantantra Path
Vasco-da-Gama, Goa - 403802

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) Tel # 04344-240448
E-mail : iimmhosur1@gmail.com

HUBLI BRANCH
Indian Institute of Materials Management
Karnataka Chamber of Commerce of
Industry Building, 1st Floor, Jayachamaraj
Nagar, Nr. Nehru Ground, Hubli - 580020
Tel: 0836-2264699/09972703336

HYDERABAD BRANCH
Indian Institute of Materials Management
4-8-68/A/21, G.D Enclave, 3rd Floor, Rang
Mahal Road, Putli Bowli, KOTI, Hyderabad-
500095. Email: iimm.hyd1719@gmail.com,
TEL: 040-29558952, Mob.: 9866246796

INDORE BRANCH
Indian Institute of Materials Management
03, Rajmahal Colony, Ext Manik Bag Road,
Indore - 452007 (M.P)

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. IGM Computer Academy
Mallick Complex, Nr. Rama Devi
Chauraha, G T Road, Kanpur - 208007
Ph.: 0512-2401291
iimmkanpurbranch@gmail.com

K G F BRANCH
Indian Institute of Materials Management

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
2nd Floor, Mishra Bhawan, Jurian Tola,
Lal Kuan, Lucknow - 226018
Ph.: 9415752999, Res. 05222638264

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. B Sandeep Naik, GM (Matls.)
MRPL, Materials Dept., PO: Kuthethur
Via: Katipalla, Mangalore - 575030. DK
Tel # 0824-2882203
Email: bsnaik@mrpl.co.in

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
Qtr. # C-352, Nalco Township, Nalco Nagar
- 759145 Dist: Angul, 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
011-22464969/ 22466089/ 9818664267
E-mail : iimm1delhi@gmail.com

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.: 0651-2360716/2360198
E-mail : rajesh0021@yahoo.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. Mr. Dilip Dhabarde, Hony Secy.
Manager Matls, Krishak Bharati Co Ltd
PO: Kribhaco Nagar, Nr. Kawas Village
Suresh-394515, Tel: 0261-2802682
E-mail : dilipdhabarde@kribhco.net

TRIVANDRUM BRANCH
Indian Institute of Materials Management
TC-9/1447, 2nd Floor,Future House
Temple Road, Sasthamangalam
Thiruvanathapuram - 695010
Ph. : 0471-2724952
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
iimmbaroda@gmail.com,
www.iimmvadodara.org

VAPI BRANCH
Indian Institute of Materials Management
301, Fortune Mall, Above Vishal Mega Mart,
VIA Road, GIDC, Vapi - 396195
Ph.: 09825119364 / 08758294011
E-mail : iimmedu.vapi@gmail.com

VISAKHAPATNAM BRANCH
Indian Institute of Materials Management
C/o. A V Rajendra Kumar
Droo No. 39-8-34/4 & 5, Sector - 8,
Muralinagar, Visakhapatnam - 530007
Ph.: 0891-2704757 / 9701347694
E-mail : iimmvizag@gmail.com

V U 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

RNI NO. DELENG/2004/13227
POSTED AT NDPSO, DATED 5/6/7

Postal Reg. No. DL(C)-01/1303/2019-21
L.No. U(C)-288/2019-21
Licensed To Post Without Pre Payment

Printed & Published by Dr. M.K. Bhardwaj on behalf of Indian Institute of Materials Management, 4598/12-B, First Floor, Ansari Road, Darya Ganj, New Delhi - 110002 and Printed at Power Printers, New Delhi-110002