

CHRONICLE



THE DECISIONS THAT WE MAKE NOW ARE
GOING TO CHANGE THE COURSE OF BUSINESS
AND HOW WE LIVE IN THE NEAR FUTURE - **06**

A BIG LEAP



What is Supply Chain Management & why is it important?

Supply Chain Management is the management of the flow of goods & services and includes all the processes that converts raw materials into final products for reaching to the end consumer.

Examples of supply chain activities include farming, refining, design, manufacturing, demand planning, sales & operations planning, packaging, transportation and customer service.

Efficient SCM is important because it increases competitiveness, responsiveness, and thereby customer satisfaction by reaching goods and services with quality and affordability.

- Association of Supply Chain Professionals (India)

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Editorial Board
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Anshuman Neil Basu

Volume Editor
Anshuman Neil Basu

Cover Design
Aamir Rangwalla

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This is our first edition since 2019 hence we
have also added the glimpses of the events
that we organised in 2019 & 2020.

**ASCP CHRONICLE IS A
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Look out for the
ANNOUNCEMENTS
Inside

President's Message

The world as we know it now is much different from two years ago as we continue to battle this unprecedented public health crisis. The focus of businesses has shifted from their topline to maintaining the health & safety of their workforce and preserving the continuity of the business. In supply chain management, the focus has always been on lowering costs & inventory levels. However, the pandemic has taught us that this approach can put the business continuity at risk.

“Flexible supply chains that are spread across multiple geographies & supplier/distributor partners help companies to quickly adjust and react to changes”

At the start of the pandemic when the world's healthcare systems were overwhelmed and medical supplies were bottlenecked, luxury goods manufacturers overhauled their operations to cater to this demand. LVMH, a producer of luxury perfumes started production of hand sanitizers. Gucci, Giorgio Armani & Prada started churning out medical overalls from their production facilities. Burberry repurposed their trench coat plant to dole out face masks and non-surgical gowns. It was more than a feat of factory retooling. Flexible supply

chains played a critical role, including rapid raw material sourcing, product design, development & testing and distribution.

There are 5 capabilities that are needed to create flexible supply chains resilient to external shocks. Reacting quickly requires network agility, which means investing in an ecosystem of suppliers & partners that can handle sudden changes in demand and quickly come up with alternate products in absence of key raw materials. The second capability is real time network visibility. The data across the entire supply chain needs to be integrated so that supply chain management teams can take decisions with agility to mitigate supply shocks. This also includes the visibility of the supply chain of critical suppliers & distributors.

Exploiting the power of machine learning & artificial intelligence for prescriptive & predictive analysis is the third capability. A robust risk management mechanism is the fourth capability that will help the supply chain management teams to come up with early warning indicators & model risk mitigation scenarios. The final capability is to empower the teams and decentralise decision making. This allows the teams to be agile and rapidly work on the insights generated by the increased visibility and advanced analytics.

While the pandemic has changed the way businesses will operate their supply chains in the future, the number of supply shocks over the years have also increased. This means more risks & opportunities for supply chain professionals to showcase their mettle and act as an important pillar to running a successful business.



Amitava Bakshi
| President

Vice President's Message

The phrase “supply chain management” (SCM) has gained prominence over the past three decades. Keith Oliver, a British logistician and consultant working with the consulting company Booz Allen Hamilton, is believed to have coined the term by first using it in an interview with Arnold Kransdorff of the Financial Times on 4 June 1982. There are many reasons for the popularity of the phrase and concept. Customers keep demanding quality products, better innovations, and variety and expect them to be consistently delivered on time and with no damage. This necessitates closer coordination with suppliers and distributors, which has increased performance-based competition, combined with changing technology and economic conditions contributing to marketplace uncertainty. This also

necessitates greater flexibility in the way individual companies and supply chains perform and demands more flexibility in supply chain relationships. The COVID-19 pandemic forced a stringent national lockdown from March 24, 2020 that caused severe disruptions across supply chains of all goods and services. The recent Ernest & Young report lists Weak Demand, Supply chain disruptions, Liquidity crunch, Labor/capacity underutilization, Meeting regulatory requirements and Workforce health and business in “New Normal” as common issues during the Pandemic.

“The Pandemic has made us realize the importance of supply chain and their efficiency and has given good lessons to take them forward for a better future.”

It is realized that the supply chain strategies that were most popular and relevant in pre-COVID-19 period can no longer be relied upon now. There is certainly a need to re-furbish the global supply chains wherein the fundamental assumptions may need re-examination, manufacturing bases may need a diversification and relocations, trade channels may need changes, and investment destinations may see a shift. As many organisations look to fix their disturbed and broken value chains and want to reduce their supply chain risks, India is emerging as an exclusive preferred business destination. How much India would harness this opportunity and would become a destination for global supply chains is yet to be seen and we sincerely hope that India would seize this opportunity!



Dr. T.A.S. Vijayaraghavan
/ Vice President

FROM THE DESK OF THE SECRETARY GENERAL

THE BIG LEAP IN SUPPLY CHAIN



Anshuman Neil Basu is the Director of the Supply Chain projects firm SCM Programs, and the India Coordinator for The City Of Osaka, Japan. He is also the Secretary General of ASCP. He can be reached at nb@scmprograms.com

The coronavirus pandemic and the resulting lockdowns has caused shocks to both demand and supply in developed market economies, particularly effecting the fast-developing economies like India, Brazil and Mexico. Since the beginning of 2020 itself even before the pandemic was announced, most consumer behaviour started changing especially in the developed economies and the urban population of the developing countries. After March 2020 announcement of the pandemic, lockdowns have forced consumers in India to stay indoors with select commercial activity, which created a spike in demand of several commodities and created a supply shock. However, the resulting economic situation still remains optimistic and the country survives because of the sheer size of the domestic market and the flow of essential commodities in which India is almost self-reliant in its production.

Behind every manufacturing process, from medicines to steel or clothes to food, will involve a seamless supply chain. No better time than now for anyone to realize this. A robust Supply Chain played a big role in keeping the situation in a large nation like India in good control comparatively. *Behind the success of any developed or developing nation efficient supply-chain management is*

critical because it increases competitiveness, responsiveness, and thereby customer satisfaction by reaching goods and services with quality & affordability. However, the present unprecedented situation calls for supply chain professionals for being resilient in order to sail through efficiently and with dedication, which will only show how robust it laid the foundations of the value chain in the country. If we now have to excel globally and attract new businesses for making more in India, then we need to go several steps further to bring *customer delight* instead of just 'customer satisfaction'. And time is the key to bring that change - sooner all the more now.

THE SPIRIT OF OMOTENASHI & RESPONSIBLE CHAIN

Editor-in-chief of *The Economist* Zanny Minton Beddoes wrote in its cover story of 23rd July 2020 about the shift that took place or rather still taking place in global economics as a result of the covid-19 pandemic. The 1970s saw Keynesianism giving way to Milton Friedman's austere monetarism, and while in the 1990s the central banks were given their independence, and similarly the coronavirus effect in 2020 marks a new paradigm shift in global economics. Each era of economics confronts a new challenge she explains in the very interesting cover. Just as after the 1930s the task was to prevent depressions, the 1970s and early 1980s the entire machinery of developed economies worked to end stagflation as a result of the oil boom.

That was a background.

In this era of sharing economy of 'doing more with less', which is the new global business model too, a Responsible Supply Chain becomes much more important and which consumers, and the countries would look forward to and compete in future.

Thus, we need to rebuild the existing supply chain system as a *responsible chain*, and we need to work very hard for this in the coming months and years. It took Japan almost two decades to become amongst the top economic powers with a brand-new robust economy after WWII. It was only with a highly dedicated and disciplined behaviour in the logistics systems, and not just technological progression, to develop an impeccable *Responsible Chain* which was completely self-reliant and re-defined new world-class standards, including environment and sustainability factors in consideration. Moreover, today Japan focuses only on 'customer delight', and not just customer satisfaction, in its responsible chain, with their spirit of *Omotenashi* in supply chain – anticipating the needs in its service to the consumer, bringing delight in every step.



Japanese businessmen believe that companies do have a life span just like humans. Known for its rigid corporate culture is now urging the corporates to encourage teleworking and urging corporates ‘to change the way of their thinking’. But the thing which remains constant in their businesses or way of life is that spirit of *Omotenashi*. These COVID-19 years has thrown off transport movements, logistics volumes and production capacity across the world. But the most important thing is in such challenging times logistics providers should not reduce their service standards. The spotlight in my opinion always remains on this Japanese concept of *Omotenashi*. Be it any difficult situation. That shouldn’t get effected at all. Essential supply chain anticipating the customer’s needs to be consistent and in fact find new ways to become better even during challenging times is the new success mantra. Evaluating visibility and inventory policies, assessing global sourcing models, including geographic diversification of sourcing partners and production flexibility, considering the cost-benefit of Just-in-Time vs Just-in-Case manufacturing is now the winning point. When we return to the ‘new normal’, this new era of supply chain should be more efficient and more customer focussed.

Currently amongst the priority in supply chain and the most critical factor is for the vaccine manufacturing and the availability of raw materials. From basic raw-materials, to all consumables (sterile filters, vials)—all these need to be available at the ‘right time & place’ for the system to function. Just like the JUST-IN-TIME (JIT) concept. Every item has a manufacturing time and production limit. And the tricky part is it’s different for each item. But each item has to reach at the same time.

This ‘emergency’ Supply Chain Management, not just for vaccines now, is new to the industry and is evolving. Suppliers are used to having known, predictable demand so far. As demands are increasing, old demand-planning methods are becoming ineffective. All items go through strict quality-checks and hence simply getting new suppliers isn’t easy too. Over-ordering and creating safety stocks may effect some other supply chain, and that can create inefficiency across the industry.

Toyota is using JIT to help push the jab - effectively (and without any wastage). “Known for its pursuit of improvement and efficiency in auto production, Toyota Motor Corp. is using its know-how accumulated over years of being the top Japanese automaker to inject momentum into the rollout of COVID-19 vaccines.” says The

Mainichi, the Japanese daily. “Just-in-time” – producing exactly when it is needed and keeping minimum inventory – and “Kaizen (improvement)” are critical factors in Toyota’s vehicle production system that has allowed it to aim for higher profitability. The most important outcome is that *Nothing is Wasted*. A sense of regret over waste that is, *Mottainai!*

This new phenomena is not just for vaccine supply chains. On carbon neutrality, as The Economist writes on June 12th edition, titled ‘The New Economic Disruption’, that businesses are being disrupted - and demand has spiked for raw materials like copper that are needed to make wind turbines, batteries and the like. “The giants of the fossil-fuel age, such as Volkswagen and ExxonMobil, are having to shift their investment plans, while clean-energy pioneers are cranking up capital spending fast. Orsted, a wind-farm champion, plans a rise of 30% this year; Tesla, an electric-car maker, a jump of 62,” the magazine writes. “This sudden shift in how resources are allocated is causing stresses and strains as demand surges for raw materials and a scramble occurs for the few projects with regulatory approval.”



The Bullet Train – a symbol of Japan’s technological advancement – The operations are handled with precision and with legendary hospitality.



The entrance of a typical distribution centre or a small warehouse in Japan.



THE 3R'S & MOTTAINAI

Reduce, Reuse and Recycle. If we follow these three simple rules, which originated in Japan, we can achieve much towards Responsible Supply Chain. Needless to observe, scores of corporates have already pasted these on their notice boards and walls. Specially at their warehouses.

The next-gen employee has already learnt that in their management class too and the bosses are aware of its benefits. But are these being ever looked upon from the walls to real application in day-to-day life in work and home? The answer definitely is yes.

But certainly not diligently. A causal callous approach of bypassing the rules still lingers on at every level. The amount of wastage in our daily work life is effecting our productivity too. The cost to the company is a general issue which one knows.

Another menace that one needs to address is the glorification of the *Jugaad* system. Shedding the *jugaad* system is the first thing someone can do if one has to achieve any excellence. While *jugaad* is a fantastic thing when it comes to a new invention but not when it comes to tackle the daily activities for one's ease and finesse. *Jugaad* can only lead to mediocrity and the work done, and not work done to excellence.

Supply Chains have grown more complicated and competitive in the past decade. A global supply chain network now spans many continents and involving multiple external suppliers. In a typical supply chain and in order to make it effective, informing your end customers that you don't know or you don't have the clarity on when you will be able to resume or deliver the required service or product is as vital as sharing concrete plans. Sometimes, in some situations it is better to seek ways to help people find a way out rather than just keep them waiting uninformed. So, what are those situations of course cannot be defined but certainly can be better judged.



THE BIG LEAP IN SUPPLY CHAIN

E-COMMERCE AND THE RETAIL INDUSTRY

This pandemic was a generation-shaping event that really changed the math for e-commerce and the retail industry in particular. It also had the most dramatic impact on consumer behaviour than anything we've ever seen. Some business models and even for some large conglomerates the business focus and format has completely changed. Large global retailers are now actively investing in logistics and supply chain.

Today e-commerce companies are using omni-channel model for faster deliveries. Flexible omni-channel fulfilment is on top-of-mind for all food retailers now. To deliver anything, at anytime and anywhere, and enable end-to-end productivity is the future rush and competition. At the same time the pandemic also exposed critical supply chain vulnerabilities across the country. These vulnerabilities are informing new resilience strategies as retailers are also shifting from 'just-in-time' to 'just-in-case' value chains.

UK on the other hand, and for example, is facing a different kind of supply chain challenge. There is a chronic shortage of Heavy Goods Vehicle (HGV) drivers and workers (who are mainly skilled non-UK workers) which comes at the time when UK is battling the supply chain issues due to Brexit (discouraging new arrivals) and the Covid-19 situation at the same time, which is creating a crisis of food supplies, besides a stiff competition. As per *The Guardian* news report a week back, chilled food will struggle to reach some shops in the UK this summer, which some logistics companies have indicated will be due to lack of drivers and production workers (as many foreign workers have gone home). In a particular cold-chain the smaller stores get easily effected due to shortages and let deliveries means lost sales and waste of chilled goods too. The shortage of workers also means the entire chain gets effected right from the packaging.

The lockdown and its opening of the hospitality sector (sudden demand of labour) has also created an unusual spike this summer for many commodities, the second year in a row, which perhaps is being unprecedented anywhere in the world, except a few countries like Japan where the issues are completely different.

Everyday Life: No wastage of food after any gathering. Every leftover is packed and distributed to all the guests or kept by the host.



TECHNOLOGICAL ADVANCEMENTS

To leverage the advances in technology and to accelerate response times is going to be ever more important. It will also be pertinent to build supply chain agility by monitoring risk, implementing mitigation strategies and establishing business continuity plans – especially as a learning after this pandemic. We need to emerge from the pandemic stronger with a more resilient supply chain that is better prepared to weather any storm. Technology will play a huge role especially in food supply chain in future. The investments that we need to do today for growth and develop our skills, to have strength and resilience in coming years is going to chart the future course of the business.

The rise and rise of the Internet of Things, Artificial Intelligence, Machine Learning and Robotics, Big Data and Analytics, and Digitalization are happening today immoderately and are revolutionary changes, and not any longer a part of the future. The future is here. This digital environment is impacting every aspect of our personal and working lives and certainly a big leap for supply chain skills of the future, making it completely digital supply chain sooner than we can expect.

Advanced robotics for example can be implemented now within manufacturing facilities and distribution centres and all movement can be monitored, managed and adjusted from a remote corporate office. With technology one can now focus on managing the information provided by intelligent, thinking analytics engines. With the advent of technology in large scale applications it is pertinent now that the skills held by logistics professionals will have to advance as well, making them much sought after in the company structure as they would be the ones who will design and shape, and also think big and out-of-the-box advising the best of technology to be competitive and be constantly ready and be a source of competitive differentiation for future success.

In logistics business getting products from one place to another with as little human contact as possible is becoming an imperative way of doing business in most advanced countries particularly after the Covid-19 pandemic. In future, relationship management combined with technical expertise and right networking, collaboration mindset and adeptness in areas such as Analytics, Artificial Intelligence, the Internet of Things on how to imagine and apply the technology for faster decisions and for better management will be key requirements. Gone will be the days soon, and it has already started, where just changing job titles to higher sounding names will be recognised as ‘skill sets’.

“A year from now you may wish you had started today” - Karen Lamb

So existing Supply Chain professionals must make this big leap to acquire the skills to define and shape the future of a business and the future ones must advance their skills to be the leader in the coming times.

The customer is going to be in control, that is going to drive a lot what we want to focus on. We are fortunate to drive the operating team and the operations and as responsible supply chain professionals and companies responsible for supply chain, we have an opportunity to build and how we drive it and the decisions that we make is going change the course of business and how we live in the near future, so we have a huge responsibility there. Just a decade from now, we will be inheriting the decisions that we make today. The magnitude of decisions and change that are being made is going to be transformative. It is a very difficult time but we as supply chain professionals are very lucky to now show exactly our farsightedness and steadfastness in this profession.

To catch up at the right time, the government’s recognition of a strong and robust supply chain as a pillar of the country’s growth engine and giving high importance to demand, and on strengthening all stake holders in the supply chain to fulfil the demand of consumers by utilizing to its full capacity and caring for the local community is indeed the need of the hour. We now need to collectively work hard towards our field of expertise to be a fine part of the global supply chains in the coming years in attracting more businesses for our country.

On a separate perspective, the Asian countries have some very highly developed and some developing and a few underdeveloped countries. Yardstick, precautions, challenges too of course naturally are of different nature. What kind of recommendations will organizations like UNESCAP put forth to the governments in the region post covid-19 is to be followed, for example on the revival work process for the migrated labours so that employment issue is checked, or any recommendations of mandatory precautions.



As summarised by Singaporean PM Lee Hsien Loong in the *July/Aug 2020 issue of Foreign Affairs*, the next arguably ‘Asian Century’ being the fastest growing region, will depend much on how the US and China get along. Its success will depend much on ‘whether the US and China can overcome their differences, build mutual trust, and work constructively to uphold a stable and peaceful international order’.

With the right combination of determination, resourcefulness, and ideas, supply chain can be the most fulfilling businesses plus the satisfaction of being a hand for nation-building. As Napoleon Bonaparte attributed, *Un bon croquis vaut mieux qu'un long discours*, “a good sketch is better than a long speech”, so thus far I would rest my case here with some mixed thoughts, for this edition, with this future sketch of the state of supply chain in India which is promising and profitable.

ASCP MEMBERS FROM INDIA WELCOMED ALAN BRAITHWAITE AND PAT BRAITHWAITE COMING FROM U.K FOR THEIR TRANS-INDIA CHALLENGE TRIP - ON 31ST JANUARY 2020. THE MEETING WAS PRESIDED BY OUR ESTEEMED MEMBER FROM JAPAN.



WE ALL WANT TO RETURN BACK TO NORMAL TO A BOOMING ECONOMY!

ASCP reminds you to Wash hands frequently, keep safe Distance and always wear a Mask.

Get Vaccinated!



DID YOU KNOW?



The genesis of ASCP's Annual 'India Supply Chain Conference' is a supply chain conference in India that was held in 2007 in Mumbai by one of India's top business houses. A new international format of the conference started under the banner of CSCMP India from 2011 to 2014 making it the biggest in the country. Thereafter for a brief period of two years (2015-16) it was continued by SCM Programs which also conceptualised its current logo and also started a parallel Academic Conclave. ASCP is now organising this Annual International Conference & Academic Conclave since 2017. The hallmark of ASCP's India Supply Chain Conference is its unique blend of format and topics which is in tune with first-class global conference standards and up-to-date trends, with an unparalleled networking platform. No two events are same. In 2021, ASCP plans to hold this annual event in the city of Kolkata.



QUICK DIALOGUE

Shantanu Bhadkamkar is the Managing Director of ATC Global Logistics Pvt Ltd and the President of Association of Multimodal Transport Operators of India (AMTOI)



Q1 Are there any specific Supply Chain challenges (in India) which you feel will emerge post-covid or will be new?

Last two decades saw massive consolidation in many sectors of the economy. As a consequence, Oligarchy is on the rise in many sectors. A significant concern is the rise of global Oligarchs, which has resulted in Sectoral dominance that even governments cannot restrain and moderate.

An insignificant percentage of containerised cargo moves in Indian owned containers and India flag container ships. A negligible portion of Air Cargo moves on Indian Freighters. Covid pandemic accelerated the already existing dominant market positions of each dominant player by extraordinary profit margin and huge profits, which will make the rise of Indian owned Container Shipping even harder. This will be the biggest challenge for supply chain resilience and global competitiveness for Indian businesses.

Q2 What are the two or three major sectors which you feel will emerge as sunrise sectors (especially post covid era), for which India can be an attractive business destination?

Logistics Sector, mainly the Domestic Logistics sector, is one of the top sectors attracting foreign investments in India, and it is only the beginning; we will see more significant things. However, the dark horse for attracting foreign investment in India will be agro products, everything connected to agriculture, including agriculture. Once they

come into effect, three critical reforms will have the same impact on Agriculture as the reforms of 1991 of liberalisation had on the manufacturing sector. The potential is so huge that nobody can afford to miss this opportunity. For India to become a \$5T economy and eventually the second-biggest or even third-biggest economy, faster development of the agriculture sector is crucial.

Bengaluru has emerged as the world's fastest-growing mature tech ecosystem in the world since 2016, and it is the startup hub of the country. The opportunities are infinite, and this is one area all the investors from all over the world will be, directly or indirectly, part of the action. However, we are yet to comprehend the potential of modern startups and their impact on the economy.

Q3 Currently, are we globally competitive in terms of trade import export regulations?

The Indian government has adopted of E-Governance & risk management system for cross-border trade regulatory compliance. Although, as a result, the World Bank's Logistics Performance Index (LPI) Ranking & Ease of Doing Business Index Ranking of India has been improving rapidly, exporters do not consider it adequate for global competitiveness. Some of the major challenges for global competitiveness are the cost of energy, interest rates, and regulatory compliance costs.

Q4 What necessary changes are required (if any), in multi-modal transport for India to be future ready for being globally competitive?

For multimodal transport to be genuinely effective, we need infrastructure compatible for Seamless Multimodal Transport; our existing infrastructure is compatible only for segmented transport. We need genuine multimodal transport hubs that support at least two modes (preferably three modes) seamlessly & concurrently between the gateway and the hub.

Shantanu Bhadkamkar
can be connected at : ssb@atc.co.in



2nd Annual Kolkata Supply Chain Conference - Glimpses



Eastern Region Chapter Presents
2nd Kolkata Supply Chain
2019 Conference

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The Association of Supply Chain Professionals (ASCP) is a home-grown association for supply chain & logistics professionals under the Societies Registration Act - 1860.

www.ascp.co.in

DD Bangla covered the event, see excerpts here :



Importance of Digitising Supply Chains

- **Monil Shah**

K J Somaiya Institute of Management, Mumbai

(This article was submitted by the author in January 2021 as part of an article writing competition organised by students of XLRI Jamshedpur titled Dare to Compete and selected by the Student organisers)

INTRODUCTION

Today, India, the second-most populous country, is known as ‘the pharmacy of the world’ (1), because over the past century India has emerged as a global hub for pharmaceutical products. This drug-manufacturing powerhouse is one of the largest supplying countries of generic products occupying 20% of the market share of global generic medicines. India exports 70% of the indigenously manufactured vaccines to over 150 countries across the globe. It is ranked tenth in terms of value and third in terms of proportion (2). According to the latest report, India’s share in the vaccine market is almost USD 1.3 billion in 2019 and is projected to touch USD 3 billion by 2025.

ROLE OF INDIAN PHARMA IN MANUFACTURING COVID-19 VACCINE

While the pandemic and the resulting imposed lockdowns have hit hard to a majority of the sectors of the Indian economy, it has come as a blessing for the Indian pharmaceutical sector. The pandemic has played a huge role in pushing the Indian pharmaceutical industry towards being ‘Atmanirbhar’ (3). The ongoing international race for the COVID-19 vaccine, the state-of-the-art manufacturing facilities, a significant base of raw materials and the availability of inexpensive and skilled workforce have cumulatively enabled the country to emerge as the epicenter of COVID-19 vaccine manufacturing.

Out of the seven Indian pharmaceutical firms developing the cure for COVID, many firms have progressed to the Phase 3 clinical trials while the rest progressing towards vaccine roll-outs. Companies like Serum Institute of India, Bharat Biotech, Zydus Cadila, Panacea Biotech, Mynvax, Indian Immunological, and Biological E. are some of India’s major players in the vaccine manufacturing space that has formed global partnerships and collaborated with players abroad (4).



Serum Institute of India, Pune (SII) has been agile in all three aspects; development, collaborations and ramping up manufacturing capabilities since the early days of the outbreak. It has partnered with the University of Oxford and AstraZeneca to produce one billion units of vaccine ‘SII-ChAdOx1 nCoV-19’ called ‘Covishield’ (5). It is also working on other four promising vaccine candidates out of which for the two candidates the company has joined hands with Novavax, Maryland and Codagenix, New York. Biological E has partnered with the Indian Council of Medical Research to develop “highly purified antisera” by injecting inactivated SARS-CoV2 in horses, which could be a revolutionizing treatment for Covid-19. Bharat Biotech and SII have also rolled out their vaccine candidates ‘Covaxin’ & ‘Covishield’ respectively, one of the first Indian candidates approved for vaccine distribution (6). Indian companies have maintained unparalleled standards of manufacturing, and have had prior experience in manufacturing low-cost products with the highest quality standards for supplying to the rest of the world. It is very likely that India will be able to leverage its technology towards the production of safe and efficacious vaccines to gain access to the cure.

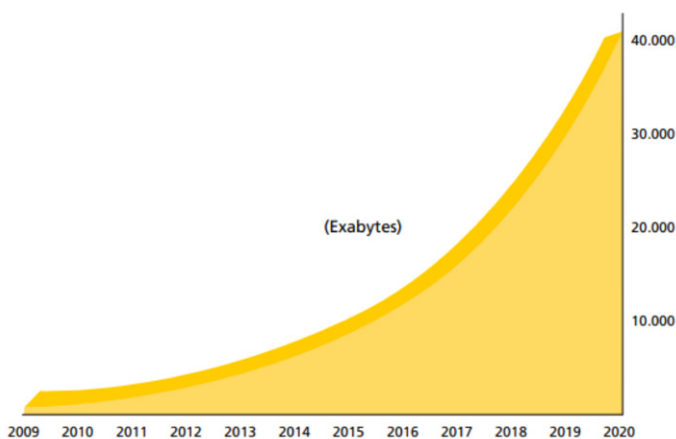


COLD STORAGE INFRASTRUCTURE AND DIGITIZING VACCINE SUPPLY CHAIN

Despite, robust manufacturing, one of the pressing concerns for India is efficient cold chain infrastructure and lack of digitization in the supply chain and logistics industry for the last mile delivery. The success of the COVID-19 immunization program will inherently depend on robust and data-driven resilient supply chains. Investments in cold chain infrastructure space have not yet propelled at a pace at which vaccine development is taking place. Distributing vaccines safely will be one of the biggest challenges to overcome as storage temperature requirements of vaccines are as low as -70°C for certain products (7). With the growing popularity of temperature-sensitive products, the overall growth of the healthcare sector is expected to drive the need for cold storage infrastructure nationwide.

According to a survey, in 2008, the number of digital information pieces surpassed the number of stars in the universe. The modern digital universe is expanding at a rate that doubles the volume of data every two years (8). The following image gives a snapshot of the data consumption and utilization pattern by industries across the world in the time frame of a decade from 2009 to 2020.

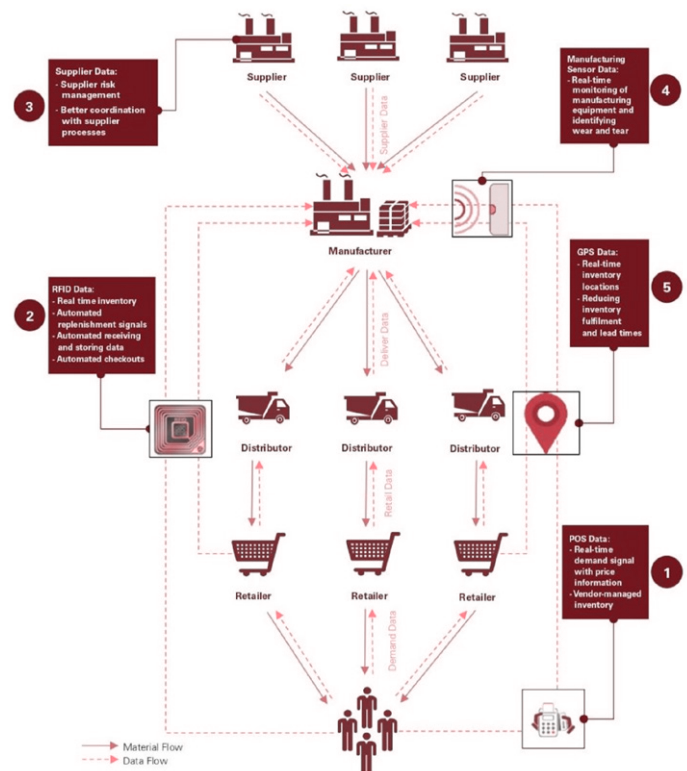
Exponential Data growth between 2009 to 2020



Big Data Analytics (BDA) leverages the potential of data to boost decision making, improve efficiency, resiliency and support risk assessment of cold chain points in the supply chain. Organizations can base their decisions on all the hard facts provided by analytical tools and calculate their costs of inefficiencies instead of relying on assumptions. The five major data sources that the companies can obtain their data from is Point-of-sales (POS), Supplier, Radio Frequency Identification (RFID), Manufacturing Sensors

and GPS. POS is a front-end data that enables demand forecasting and customer behavior analysis. Supplier data helps assess risk, supplier capacity and performance. RFID and GPS data helps to gauge real-time inventory positioning and warehouse performance. Manufacturing data identifies all the production-linked data, machine failures and process bottlenecks (10).

Material and Data Flow in Supply Chain



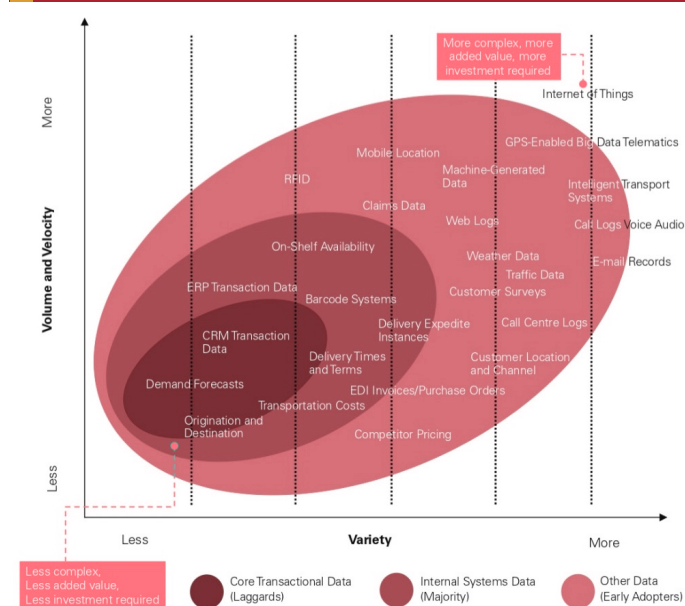
Data from the five sources listed above are graphically presented according to the variety versus volume and velocity. The three main types of data included are core transactional, internal and external SC data that the companies are exposed to. Along the variety axis, the external data has the widest horizon and has higher velocity and volume when compared to internal and transactional data.

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Supply Chain Big Data Sources: Volume and Velocity vs Variety



List of all the state-wise approved cold chain projects in India (as of 2019)

States	No. of approved projects	No. of accomplished projects	No. of projects in progress
Maharashtra	67	32	35
Uttar Pradesh	26	11	15
Uttarakhand	25	15	10
Gujarat	22	12	10
Andhra Pradesh	21	4	17
Punjab	19	12	7
Himachal Pradesh	15	9	6
Karnataka	13	5	8
Tamil Nadu	12	3	9
West Bengal	11	8	3
Haryana	11	8	3
Rajasthan	10	4	6
Telangana	9	4	5
Kerala	8	1	7
Madhya Pradesh	6	4	2
Jammu and Kashmir	6	4	2

In terms of revenue, the cold chain market in India was valued at USD 1.7 billion in 2019 and is estimated to touch USD 6.6 billion by 2025, expanding at a CAGR of 25.29% from 2020-2025. The Center is assessing cold storage space across the country for building up a sufficient inventory of the vaccines. In September 2020, the Center approved 27 Cold Chain facilities under the Pradhan Mantri Kisan SAMPADA Yojana (PMKSY) with a total investment of USD 10 million being implemented

across the country (11). The existing infrastructure for cold storage satisfies the requirements of vaccines developed by three Indian firms; Bharat Biotech, Zydus Cadila, and Serum Institute (12). The Government is also in talks with public and private players in the pharmaceutical sector, agri-business and food processing industries and food delivery startups like Zomato and Swiggy to identify cold storage facilities at the district level that can stock the vaccines (13). The enormous magnitude of the country's



UIP is backed by more than 27000 cold chain points, however, India will require additional 16000 cold storage facilities and thus needs to invest significantly and augment its capacity.

The cold chain logistics market in India is highly fragmented and consists of 3500 unorganized players and nearly 30 organized players, catering to the growing demand for temperature-controlled storage and distribution services (11). Some of the major organized players operating in the cold chain market include Snowman Logistics, Gati Kausar India, Kool-ex Cold Chain Limited, and DHL Logistics. The International Air Transport Association is collaborating with airlines, healthcare companies and global regulatory associations to standardize the distribution services of the vaccine. It asserts that as many as 8000 air-freights will be required to distribute vaccines globally (14).

The Centre has estimated USD 6-7 billion for one of the most aspirational vaccination master plan against COVID-19 (15). Once the vaccine is out, the Centre will ensure the delivery of the vaccine to the people in every nook and corner of the country. The National Expert Group on Vaccine Administration is mapping out strategies to utilize a digital infrastructure like the Electronic Vaccine Intelligence Network (eVIN) for managing inventory and enforcing vaccine delivery mechanisms, including tracking of vaccination processes with a focus on last-mile delivery (16).

The distribution of the vaccine will be under the COVID-19 Vaccine Immunization Program which would run parallel to the Universal Immunization Program (UIP) but will leverage the processes, technology, infrastructure and the network of the existing distribution framework like eVIN to track the COVID-19 vaccine administration and movement because India, already, has a solid program in place (17). India will deploy this system to track the temperature of the storage facility across states, geo-tag health centers and maintain a facility-level dashboard and regularize the vaccine stock and flow by ensuring data-powered and efficient management of the immunization supply chain (18). It will help in simplifying the supply chain by increasing the efficiency of the vaccine logistic management and will help to achieve a reduction in utilization of vaccines on account of mismanagement and pilferage, translating into savings of 90 million doses at more than 10000 cold-storage facilities (19).

To achieve high operational efficiency, constraints always occur at the last mile. Therefore, to drive the product cost down, optimization of last-mile delivery is needed and therefore BDA is a promising field in logistics (9).

To improve the driving efficiency of the freight, logistic companies use fuel consumption analytics. UPS is saving more than USD 300 million annually by developing On-Road Integrated Optimization and Navigation (ORION) system (20). This system helps the company optimize more than 250 million locations and 50000 routes in its network.

ASCP SUPPORTED AND PARTICIPATED IN THE ANNUAL EVENT OF IMT NAGPUR - 30TH JANUARY, 2020



HEALTHCARE RATIONING

Concerns about distribution are not only limited to building resilient inbound and outbound logistic and supply chain solutions. It is also dependent on ethics and economics as to how will the central government identify who should get the first dose of vaccine. Both, The India State-Level Disease Burden Initiative (21) and The IDF Diabetes Atlas (22) have estimated a range, 57-77 million, for the number of Indians at risk due to COVID. Government has therefore developed a model that is a multi-value ethical framework to distribute the vaccines.

It has identified 300 million Indians priority beneficiaries who will be given the initial doses of the vaccine. It will set apart 10 million health professionals including doctors, ASHA workers, 20 million frontline workers including municipal corporation workers, police force; and over 250 million people aged 50 and above with co-morbid conditions requiring personalized care (15).

Multi-parameter framework for Vaccine Distribution

Parameter	Reasoning	1	2	3
Age	People above 60 years contributing 50% of India's COVID that deaths	0 - 15 Years	15 - 45 Years	40 - 60 Years 60 + Years
Co-morbidity	75% of Covid - 19 deaths in India or associated with co-morbidity	No Co-morbidity	Mild or early-stage co-morbidities	Moderate or severe co-morbidity
Profession	Prioritising people working on frontline and who are involved in essential services	Not Working	Working in non-essential sectors	Frontline healthcare and essential workers
Income	Equitable distribution of health care services	High Income	Middle Income	Low Income

OPINION

The strategy behind efficient vaccination to eradicate COVID-19 requires adopting certain techniques to deploy the vaccines in a particular geography. India has the potential to strategize it in multiple blocks simultaneously to achieve mass immunization on the same lines general elections are conducted. Vaccinating even 60% of the population has high chances to get rid of COVID-19. Ultimately, the virus finds no hosts to infect and replicate, consequently, Ro of the virus reduces to zero and this helps developing herd immunity amongst other individuals which effectively spreads the growth of the virus (24). After being vaccinated, people should not be allowed to travel for a few days to unprotected areas.

To calculate more about the timelines of vaccination per city, let's undertake a few assumptions. Delhi has a population of 3 crores, while 60% of its population

amounts to 1.8 crores. A vaccine giver takes 2 minutes to administer one dose per person in the capital city, Delhi. Considering three professionals work for 10 hours a day, thereby vaccinating 1800 people per day. There are 500 such spots distributed throughout the city where such camps are running on a daily basis. Going by these assumptions, 60% of the population of Delhi, gets vaccinated in under three weeks. Simultaneously, the Centre can take such measures across the country. The sites utilized for vaccinations cannot be hospitals as they might still be burdened with COVID-19 critical cases. Instead, playgrounds, movie theatres, colleges, schools or malls can be used for setting up these camps. Once the dose is administered, it is reflected in the central system. This way, mass-immunization is possible and achievable in a span of less than 18 months country-wide.



CONCLUSION

India is a country that is looked forward to by many world leaders as a machine for mass-production of quality vaccines at a much affordable cost. Merely developing vaccines will not put an end to the global pandemic.

“The larger focus of India should be on leveraging data and technology in strengthening its cold storage points and also making its logistics and supply chain resilient to disruption such that vaccines reach last-mile safely without any contamination.”

While the policymakers and frontline workers face grim situations on a daily basis, it is imperative for us to look at a much larger time frame and start taking positive measures in the right direction to put India at the forefront of innovation in supply chain resiliency.

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Digital Lead-Supply Chain Planning
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Assistant Professor, IMT Nagpur
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Journals.

In one academic year (2020-21), Out of that 7
papers are ranked by ABDC journals ranking.



Dr. Parijat Upadhyay,
Associate Professor, IMT Nagpur
Achieved Distinction in Design Thinking and
Systematic Innovation

(A collaborative program offered by MIT Sloan,
Columbia Business School and Tuck at Dartmouth,
USA)



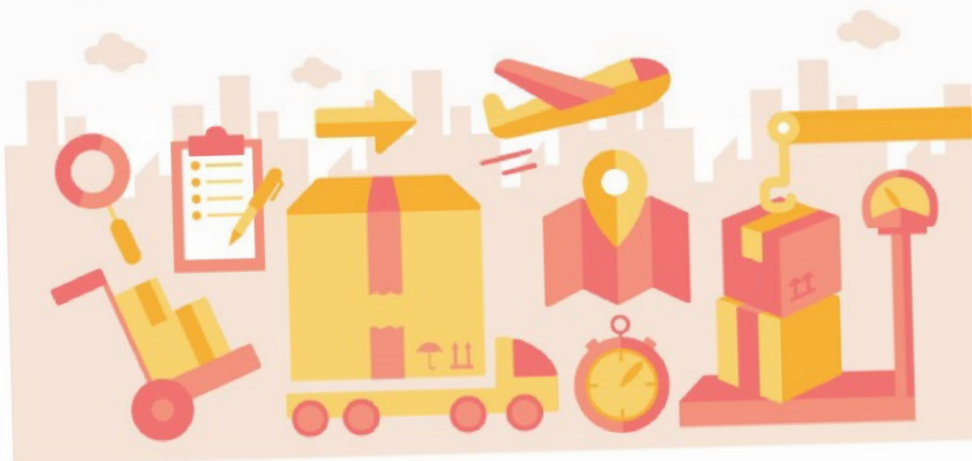
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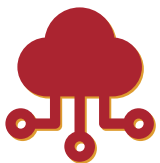
(This article was submitted by the author in January 2021 as part of an article writing competition organised by students of XLRI Jamshedpur titled Dare to Compete and selected by the Student organisers)

KEY TRENDS THAT ARE PUSHING SUPPLY CHAIN TO DIGITAL PLATFORMS



Mobility

- Smart phones out sale PCs
- Today, mobile devices are the primary source to Internet access worldwide



Shift to cloud

- Users can access systems regardless of the location or what devices they use
- Multi cloud strategies will reduce the window dependency for two-thirds of organisations through 2024



Social networks

- There were 3.6 billion social network users in 2020
- The average user spends an average of two hours and 29 minutes using social media each day



Big Data

- By 2023, graph technologies will facilitate for decision-making in 30% of organisations worldwide
- By 2022, 35% of large organisations will either be sellers or buyers of data via formal online data marketplaces, up from 25% in 2020



Internet of things

- Supply chain visibility and automation remain key challenges within the next 10 years
- By 2022, there will be around 26 billion connected devices on the Internet of things

The current Covid-19 pandemic is a game-changer and is already impacting the global output in the deepest way and pushing more over the global financial crisis. The negative impact can be seen in both demand and supply channels. On one hand, quarantine measures, illness, negative consumer and business sentiment has suppressed demand. On the other, the closure of some factories and disruption in supply chains has created supply bottlenecks. The economic condition remained mostly concentrated in the first half of this year, later it crippled regionally spreading throughout the globe.



OPPORTUNITIES OF A CHANGING LANDSCAPE

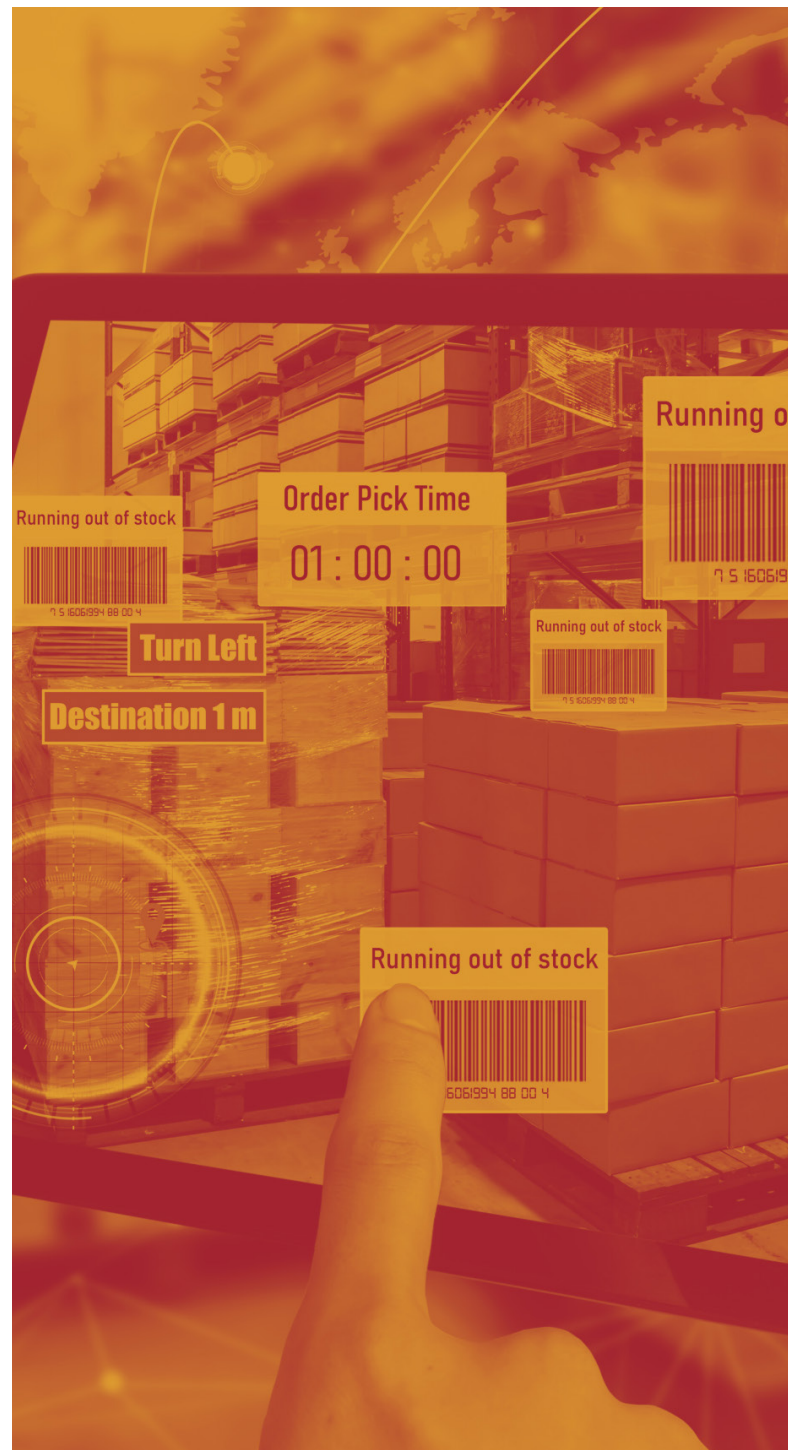
This brings in the challenges and opportunities for incumbents and new players in supply chain management to explore the situation for their benefits. As it can be seen that many global markets are unequipped to cope up with the new digitalized world we have entered. To support these, there is a need for the companies to shift the focus from cutting costs to equip with new technologies available to upgrade their processes create more integrated organization and values across the enterprise. Actively getting involved with the operations from beginning is very crucial, as the product life cycles are becoming shorter and more slippery. Customers expectation are increasing in demand for modern development delivery of new products and services, meaning the need for improved response times, changing in product quality/differentiate and changing business processes.

Explaining these situations would mean the transformation of traditional supply chains to digitally supported customer sensitive supply networks. With the relative attractiveness of Make in India campaign, the manufacturing locations, business processes, standardized supply chain and logistics approaches impede upgradation to digital platform.

Currently, logistics costs account for up to 14 percent of India's gross domestic product (GDP), so deploying smart supply chain solutions to attempt to bring that down to as below as 10 percent, could make the sector more effective. Further, considering the critical role of logistics in propelling India's export, Federation of India Export Organisations (FIEO) supports the reduction in logistics cost will increase country's exports.

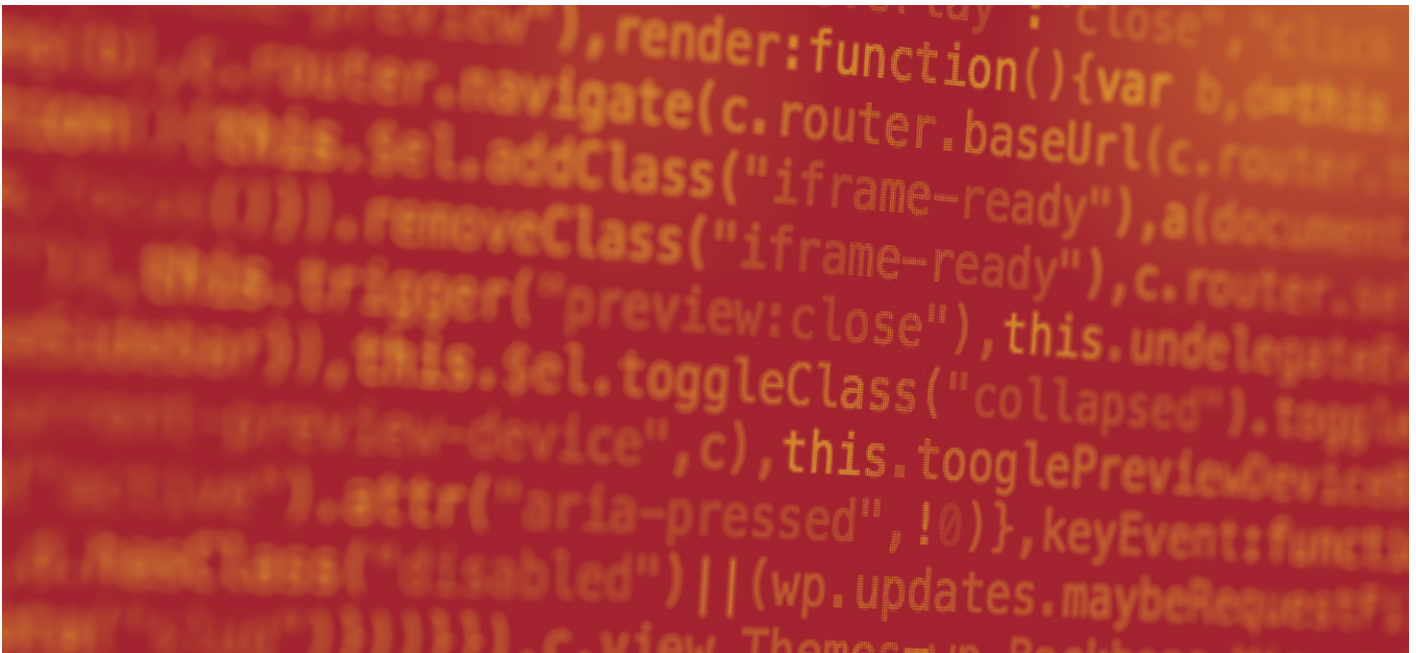
EMERGING TECH AND INNOVATIONS

Accordingly, applying emerging technologies/platform can bring in the entrepreneurship aspects. Such new technologies allow companies to generate a better understanding of customers preferences and enable companies to enhance the relationships with the customers. They also enable the mobilization of the product ion line, providing the opportunity to respond to the rising tide of global uncertainties and business complexities. Hence, it would be right to say that, "India's big move towards digitalization comes earlier than expected", and the door for success is open for the one who comes first and serve the customer needs.



Currently, logistics costs account for up to 14 percent of India's gross domestic product (GDP), so deploying smart supply chain solutions to attempt to bring that down to as below as 10 percent, could make the sector more effective. Further, considering the critical role of logistics in propelling India's export, Federation of India Export Organisations (FIEO) supports the reduction in logistics cost will increase country's exports India's economy continues to evolve with continuous efforts of government to offer transparent and predictable tax regime to foreign investors, ensuring that the manufacturing strengthened and the supply chain continues to modernize as an essential for business.





ROLE OF TECHNOLOGY IN STRUCTURAL REFORM

A modern, digital supply chain makes it easier to do business in general, it reduces manufacturing costs and in time will help accelerate consumption growth in both urban and rural areas, through better access to goods and services vital in a country as geographically spread out as India. The supply chain development is also supported by India's 2018 budget that contained the highest ever financial allocation to spending on infrastructure aimed to support supply footprints, at around 95 billion (INR 6 trillion). Further involvement with other digital solutions is already making their way into India's logistics sector, such as next generation robotics, automated vehicles (AVs) in warehouses, blockchain, Industrial Internet of things (Iot), three-dimensional 3D printing and more.

According to International Data Corporation (IDC), digital tools will grow quite rapidly in use throughout Asia Pacific APAC between 2016 and 2019, as organizations continue to realize the benefits of digital tools to their supply chain.

CALL FOR VOLUNTEERS!

The association holds monthly meetings of its Management Committee. Any Member interested to join the meeting with any suggestions and offers to volunteer on any activity can also join as a guest participant.

Please write to sec_gen@ascp.co.in for more details and if interested to attend.

SUPPLY NETWORKS INSTEAD OF SUPPLY CHAINS

Interdependence of Make in India and National Supply Chain Network among the 25 industry verticals in the manufacturing sector that the Make in India campaign aims to boost, 17 have been affected by the global supply chain disruptions caused by the COVID-19 pandemic. Under such condition, scope for supply chain with proper planning may give an edge to Indian manufacturing at global platform. In support to this outcome, the government have eased the FDI norms proposed resilience initiative (SCR I with Australia Japan to reduce the dependency on China, positive changes in the regulatory policies and government initiatives such as "Sagarmala" and "Make in to help and promote the manufacturing sector to touch \$ 1 trillion by 2025

In the World Bank's Logistics performance ranking 2018, India's rank has improved from 54 in 2014 to 44 in 2018. Manufacturing currently contributes 16-17 per cent of the GDP and 12 per cent of employment generation in India. With a strategic integration of the national supply chain network with Make in India, the share of manufacturing in the real GDP can rise to 25 per cent while taking direct employment generation to 33 per cent. One manufacturing job can create up to three jobs in the service sector such as retail and e commerce. For a labour surplus economy like India, the scope for creating 100 million jobs as targeted under the aegis of Make in India will provide sufficient impetus to embrace the national supply chain to create inclusive economic growth.



REDUCING OVERHEADS

A big factor of Transforming India's supply chain digitally is evolving and reducing logistics costs and increasing automation to build business efficient; and today industries like automotive, retail, e-commerce and manufacturing are adopting digital technologies to help reinvent their supply chains. Radio frequency identification (RFID), Internet of Things (IoT) and Robotic process automation (RPA) tools, for example, in case of TCS and ITC Infotech where the processes are transformed to automation enabled customer onboarding through better supply chain management and software bot for execution of mundane task, are already improving operational efficiencies and cargo safety as well as reducing transport costs by increasing the speed of freight movement.

The steady transformation with government campaigns like Digital India working to promote the growth of technology start-ups and enterprises to join global network. These trends indicate that the Indian supply chain are rapidly adopting and restructuring their traditional methods to lead as the new emergent in the global supply chain.

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GLIMPSES OF THE REGIONAL CONFERENCE IN CHENNAI - 1ST FEBRUARY, 2019



Mr Omprakash Agrawal



Mr Samuel Jeffson



Mr Muthukumar



Prof. Tomoyoshi Ogawa



Mr Anurag Bisen



Mr Ashish Pednekar



Mr L N Mallik



Roadmap Towards Resiliency Through Decentralization of Manufacturing Operations

- **Shalini Dutta**
Symbiosis Institute Of Operations Management

(This article was submitted by the author in January 2021 as part of an article writing competition organised by students of XLRI Jamshedpur titled Dare to Compete and selected by the Student organisers)

Abstract: The market trends towards a wide product basket and less human intervention costs in explicit areas post the disruption due to COVID-19. With an increase in competitiveness and trend towards a customer driven market, manufacturers across the globe, especially OEMs realise the importance of an efficient collaboration with their supply chain core partners and re-align their business objective towards a common goal. The primary pattern as of now is inclined towards the improvement of assembling standards and the ever-expanding propensity toward decentralization of manufacturing functions has added fuel in the fire. This article is a literature review on how decentralizing manufacturing operations will help organizations to jump ahead of the competition in the post-pandemic market.

Keywords: Decentralization, Manufacturing, Resiliency, Supply Chain, Operations

INTRODUCTION

The traditional structure of a stand-alone company that connects with market and suppliers only by delivery and procurement of products is nowadays invalid (Mourtzis & Doukas, 2012). Now more than ever, OEMs need to optimise their manufacturing and transportation activities in cost-effective, timely and eco-friendly ways (Ueda et al., 2004). Centralisation is replaced by decentralisation and top-down methods by bottom-up synthesis (Leitão, 2009). Decentralisation comes with increased number of direct and indirect processes (Mourtzis & Doukas, 2012). In the future, long-established paradigms of production will still have to continue to change in order to meet the demand for even more individuality, customer-specific product variants and shortest delivery times within the meaning of the term “production on demand”. Therefore, in the future, the concept of the Distributed Manufacturing by geographically distributed production systems plays an increasingly important role (Matt et al., 2015). During the current pandemic, businesses were forced to work remote but yet maintaining the goal to achieve competitive advantage in the disrupted market. Organizations started embracing agile methods taking decisions while working remotely. The current report of McKinsey states that “Many leaders are reflecting on how small, nimble teams built in a hurry to deal with the COVID-19 emergency made important decisions faster and better” (Nieto, 2009). This paper presents the prospects of Decentralised Manufacturing and how will it help in gaining competitive advantage by making supply chain resilient.

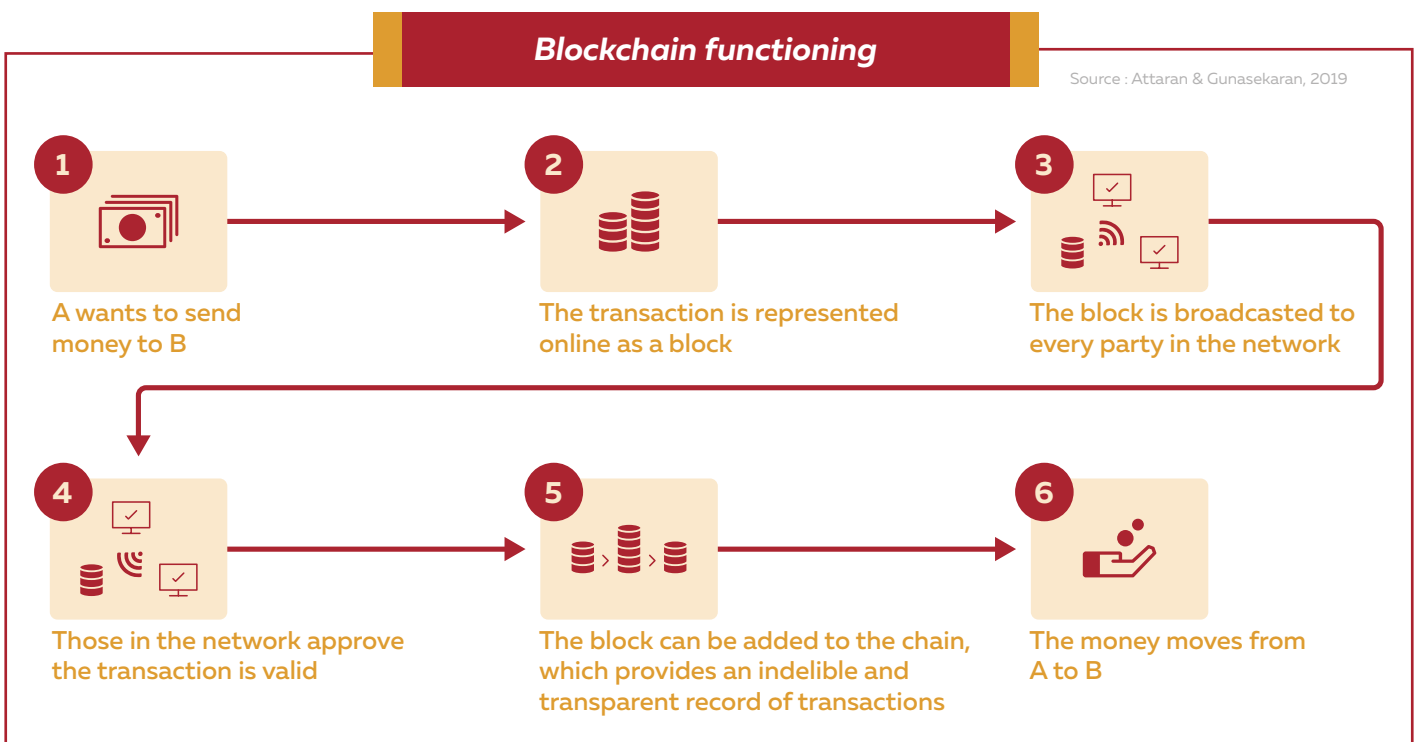
MASS- CUSTOMISED MANUFACTURING SYSTEM

With the rising demand for individual products and product variants the shift from mass production towards a personalized “mass customization” becomes more and more realistic. With decentralised capabilities, the production units can be rapidly interchanged, reorganised and restructured to provide modular solutions. Decentralizing resources will also help in expansion in the new market by keeping the track of real time data from all across the points while working remotely. The small quantities can be produced quickly and can be made available to customer by keeping the flexible production unit in close vicinity to customer. In the future study “Delivering Tomorrow: Logistics 2050” of Deutsche Post DHL, one of five scenarios is dealing with the consequences of the trend of individualization. Thus, this trend leads to an increase of regional trade relations. Only raw materials and data will be transported over long distances in the future. From the perspective of the logistics industry, the localization of value chains could lead to a drastically reduction in long-distance transports of finished and semi-finished products. Due to the decentralized production future critical success factors will be powerful regional logistics resources and a high-class transport network for the last mile to the customer (Müller, 2012).



DECENTRALIZING MANUFACTURING SYSTEM USING BLOCKCHAIN AS KEY RESOURCE

Blockchain technology holds a great deal of potential for a range of activities in the manufacturing industry and has the ability to radically change the face of manufacturing (Attaran & Gunasekaran, 2019). Blockchain is a decentralised technology and has a built-in robustness. It stores blocks of information that are identical across its network. It eliminates the risks that come with data being held centrally. Anything that happens on it is a function of the network as a whole (Zheng et al., 2017). Therefore, it cannot be controlled by any single entity and has no single point of failure, which makes it the most important resource while taking decentralized decision with security. It eliminates the requirement of a central hub keeping intact the ownership rights. Integrating blockchain into supply chain networks will not only help in development of a product remotely by recording all the important product information but also improving the anti-counterfeit measures.



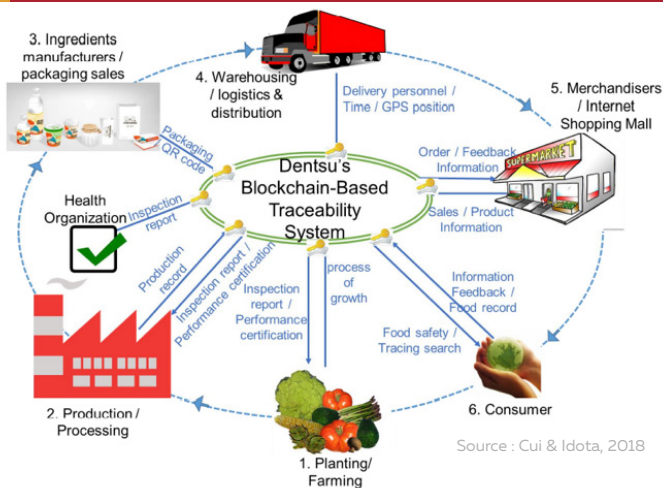
COMPETITIVE ADVANTAGE THROUGH RESILIENT INFORMATION EXCHANGE

With IOT and cloud feature the real time on road logistic data can be shared and co-ordinated. The information of idle warehouse spaces and real time shipment or container tracking is possible which forms the basis of resilient supply chain. With the help of blockchain technology data security can be established at each node of the supply chain network through continuous authentication or through a common integrated platform. Thus by leveraging on technological advancements, the supply chain can be

prepared to face uncertain events and still grow amidst adverse conditions into a more desirable state in terms of performance. As the case analysis done by (Cui & Idota, 2018) on Dentsu it states that Dentsu establishes a monitoring laboratory to inspect the prefecture's products and inspection information is transmitted to blockchain. Dentsu adopts the warehousing and logistics system of e-commerce platform for product distribution.



Dentsu' Blockchain-based Traceability System



CONCLUSION

The COVID-19 crisis seemingly provides a sudden glimpse into a future world, one in which digital has become central to every interaction, forcing both organizations and individuals further up the adoption curve almost overnight. The decentralized production system will cluster the supply chain partners of organization within the geographical market region that the organization caters to. The decentralization will not only help in reducing the risk of the nucleus firm during any unprecedented event by delegating the stakeholder ship to supply chain partners across all the market but also help in recovering from the pandemic.

Glimpses - Annual India Supply Chain Conference

Conference hosts from business schools in India and Japan



International Volunteers managing backstage with precision



Mr Niraj Ambani and Dr TAS Vijayaraghavan





Student Engagements & Campus Outreach

Association of Supply Chain Management (ASCP) as forum of Supply Chain Experts from academics and industry derives its strength from the knowledge of experts in the Supply Chain Management domain. One of the key thrust area of this forum is to disseminate knowledge to future managers in this domain. In this context, ASCP is taking initiatives to engage students from reputed educational institutions.

ASCP wishes to collaborate with few institutes to set up 'Center for Supply Chain Studies'. Such initiatives will help the institutes to carry out real life projects on SCM issues. Such centers are to be managed by student volunteers. Other initiatives are as follows:

- **Project Intern Opportunities (Individually or in groups of 2-3 students!)** :ASCP would strive to provide projects in the domain of Supply Chain Management for the students wherein they will be required to take ASCP student membership.
- A social media platform (Facebook, LinkedIn) on activities of ASCP members can share their thoughts/practices.
- Students can participate in Industry Expert talks arranged by ASCP (through digital platform) at regular intervals.
- Students to be encouraged to participate in the Annual Conferences of ASCP and present their project work.

FPM students from reputed institutes like IITs, IIMs, XLRI, NITIE and other reputed academic institutions would be approached for membership so that they get an opportunity to work closely with the experts of ASCP forum.

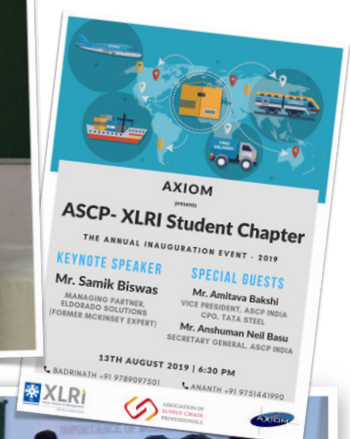
For any campus proposal please write to:

Parijat Upadhyay - campus@ascp.co.in

Anshuman Neil Basu - sec_gen@ascp.co.in



Jagjit Singh, Tata Steel
Delivering a lecture at XLRI- Jamshedpur



Supply Chains-History, Development & Impact of “The Great Reset”

- Prabhat Khare

SUPPLY CHAIN AND ITS MANAGEMENT

Historically a supply chain system has always been part of human societies. It has existed in different ages and time by arranging supplies of different goods & services from one area to another or in the same area to meet diverse, growing demands & needs of people or to just earn profits. Despite the fact the present form of supply chain system started when Henry Ford started his “Mass Production” system of automobiles in early 1910 and evolved along with the evolution of the automotive industry,

It wasn't till 1982, when Keith Oliver, a consultant at Booz Allen Hamilton introduced the term “Supply Chain Management System (SCMS)” to the public domain in an interview for the Financial Times.

Ford's supply chains system was a conventional system of feeding the process with materials (Push System) which got its new avatar with rise of Toyota Production System or “Lean Manufacturing” or Just-in-time (JIT) manufacturing. The words like Kanban (Pull System), Heijunka (Level Scheduling), MUDA (wastage) Andon (Visual feedback system), Jidoka (Autonomation), Value Stream Mapping, Visual Factory almost became a cult words in all businesses. It was a new system of “Pull” rather than Ford's system of “Pushing”, integrating all backward and forward processes in order to become “Lean”. The impact of this new wave did not leave SCMS untouched either, resulting in reincarnation of SCMS (Push System) to JIT-SCMS (Pull System). JIT-SCMS followed the principle of “Lean” providing right supplies at the right place & at right time, eliminating any kind of “in process fat” or wastages (MUDA) in terms efforts (men), processing (machine) or storage & handling (method) in the whole supply chain. This was a new fine-tuned supply chain system with almost no “fat” (no excess materials in pipe line, no delay in deliveries, no mismatches/ no wrong part supplies/

no rework) brought down the cost of manufacturing befitting customers as well as building profits of organizations also. The core of this new philosophy was to perfect the timing of ordering, procurement & delivery of all required materials, as and when they were needed at the place of actual use. The whole production process as well its associated supply chains were getting tighter, trimmer for working in synchronized manner & delivering increasing number of goods & services like a fine tuned & well-oiled machine.

Although the JITSCMS took birth in manufacturing industry its principles were expanded to wide range of processes where any value addition was being done while transformation for getting competitive advantage. JITSCMS encouraged organizations to develop and implement supply/ delivery chains which were as efficient and economical as possible & started covering everything from production to product development to HR to the information systems and many more. The umbrella of JITSCM kept one expanding with time. With time the JITSCMS became a highly complex network of various flows extending beyond of 4Ms (Man, Machine, Material, Method) to 8Ms (adding Management, Milieu, Measurement, and Money). It became trimmer, quicker & faster & wit time changed in to an integrated network of materials & information flow with smarter deliveries involving real time tracking of material flow during its complete supply chain cycle before getting delivered at their final destination.

However this well-oiled, fine-tuned & smoothly running supply chain machinery was about to get a jolt with an impact so strong that it would shake the whole system to its roots and would force the world to think about newer and alternative ways of managing future SCM.



THE SHOCK, “THE GREAT RESET” & NEW LEARNING

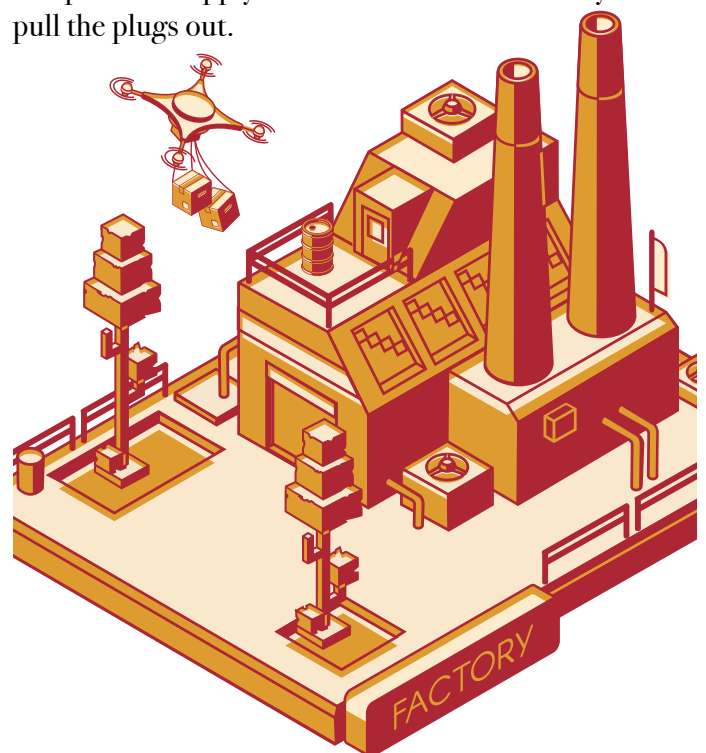
And the jolt did come at the end of 2019 in an unexpected form of coronavirus pandemic (COVID-19) creating havoc of unprecedented nature at pace & severity not seen in recent history. The social, business & industrial lives across the whole world almost crumbled bringing many economies to their knees. The wheel fast moving wheel of global economy had a sudden braking. The impact was more severe in terms of human lives with a loss about 2.2 million people (WHO as of Jan 2021). The evaluation of COVID-19's repercussions may take deeper 7 longer studies but certainly its impact are expected to be far worse than that of the Global Financial Crisis of 2008~09 or even the Great Depression of the 1930s.

Mother Nature seems to have literally pressed the reset button for the mad industrial growth of the world which started from invention of steam engine and increased its pace with each passing years.

Considering the scale and severity of impact COVID-19 on whole world, in May 20, the term “**The Great Reset**” was very appropriately used by Prince Charles (UK) and WEF director Klaus Schwab for this pandemic, in their proposal to WEF. The paper suggests **rebuilding the new global economy by seeking newer ways to improve capitalism in which investments need to be made by focusing more on environmental initiatives.** According to Klaus Schwab's proposal, the new initiative for **doing businesses would not change the economic system, but rather improve** it to what he considers to be “**RESPONSIBLE CAPITALISM**”. A detailed paper has been published by Schwab and economist Thierry Malleret detailing the plan which talks about 5 Macro Resets (Economic, Societal, Geopolitical, Environmental, Technological) and Micro Resets (Micro trends and Industry). [A main theme of WEF's 2021 summit (<http://reparti.free.fr/schwab2020.pdf>).]

Apart from many other impacts on human life, including the way we live & interact socially, “The Great Reset” has exposed the weakest link of the DNA of JITSCMS. The JITSCMS, a system, which proved to be extremely successful in smaller geographical boundaries of Japan and later to some extent in whole world when expanded its footprint, probably was not really ready for a crisis like

current pandemic. Over the last few decades, in order to improve performances, JITSCMS moved to razor thin functioning, with almost no or minimum contingency margins in the whole supply chain. It seems it has reached its threshold limit and had also become vulnerable while expanding on global level. While expanding across the globe, JITSCMS developed into a network, crisscrossing continents as multi-tier suppliers, could possibly be located anywhere on planet & was expecting to fall on any minor disruption. The signals were already coming when between 2002~2004 SARS (Severe acute respiratory syndrome) pandemic broke, when Tsunami struck Thailand in December 2004 again when Tsunami struck Japan in March 2011. Unfortunately those were the times when India had opened its market for FDI while China was pumping its economic muscles, growing as new global economic power and hence in that mad growth rush no lessons were learnt. With times, these JITSCM became extremely large and complex with multi-layered operations and no one ever bothered about what would happen in case any of the weakest links in these chains get broken. And the COVID-19 did the same. It not only broke one but many of the weaker links in JITSCM, for few months, it almost froze the complete global supply chains. And when the weak links got broken/ frozen, these fine-tuned, trimmed supply chains, spread across the globe, started crumbling like pack of cards. The businesses could only continue their operations till the last piece of supply feeds existed and then they had to pull the plugs out.



THE FUTURE OF SUPPLY CHAINS POST “THE GREAT RESET”

Many questions on JITSCM were already brewing in the inner circles of global supply chain operators as well as many OEMs who were facing the intermittent impacts of regional pandemics, disasters & were concerned about these finely managed operations of complex supply chains. In light of this troubled past, COVID-9 had raised much bigger question on JITSCM epitomizing what happens to “just-in-time”; “just-in-case” supply gets another disruption of the level of current pandemic.

The businesses worldwide are also discussing a need to reinvent new operational dynamics with newer concepts to take a quantum leap using enabled technologies. We are already familiar with some of these technologies, today, while some may evolve in future to create newer platforms for the new form of JITSCMS. The technologies like IoT/ IIoT/ AI & Machine Learning, Augmented/ Virtual Reality/ On Demand Additive Manufacturing/ Voice Activated Technology/ End to End Digital Connectivity/ Big Data/ Cloud Computing/ Drones/ 3D Printing/ Blockchain/ Robotics/ Predictive Analytics & many other could be forming the framework as well as drive the development of future supply chain model.

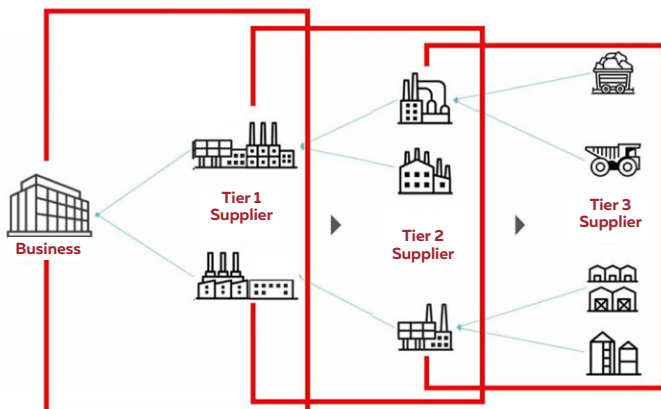
Before “The Great Reset”, SCM related risk management principles were often only applied to Tier 1 or Tier 2 suppliers, leaving OEMs blindsided and vulnerable to shocks affecting their “invisible” lower-tier supplier chains. However, in reality these lower-tier suppliers have always been more critically important in the overall supply-chain hierarchy. This pandemic also brought a lesson for OEMs that in order to effectively manage their systems; they need to be agile about the information till the last end of supply chain. Such information management of full supply chain would help OEMs to better manage the risks involved in such pandemic.



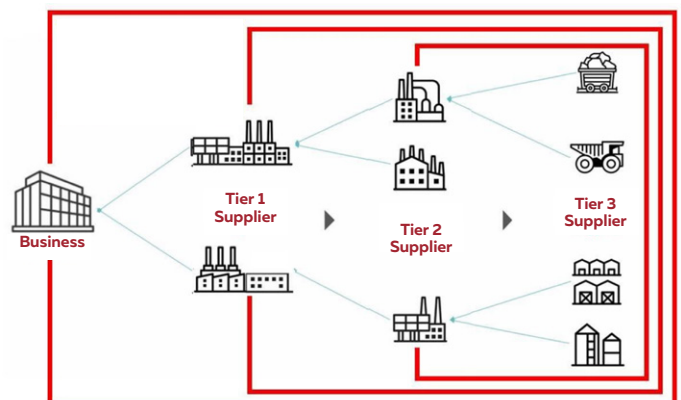
Japanese volunteer at the Annual Conference



Pre Covid-19 JITSCMS Focus Area Range



Post Covid-19 JITSCMS Focus Area Range



BUILDING THE NEW NORMAL & BECOMING FUTURE READY

In order to imagine what the Digital Supply Chain of the future will look like we need to consider and articulate what the underlying philosophies, beliefs, and paradigms will be. Overall, these testing times made the society, adopting to online services and possibly creating a long-term behavioral change in the way people work, shop, consume, seek health services and education, or generally get things done.

At present, both the timeframe and extent of the COVID-19 impact are uncertain, but the ramifications will continue to be felt even after the spread of the virus is contained. For some organizations, the legacy of the COVID-19 outbreak may linger on for much longer time while some may recover much earlier however no one can afford to have any slackness in understanding their complete supply chains & their vulnerabilities including the sourcing strategies. However for any SCMS/JITSCMS, the system needs to evolve around some of the following focus areas:

- Keeping Human/ People First
- Building A Strong SWOT Team
- Defining Segmentation To Prioritize Demand
- Continual Evaluation Of Supply Chain Scenarios
- Leveraging Data To Improve Tracking Of Supply Chain
- Defining And Optimizing In Terms Of Environmental Perspective

TAKE IT TO THE LAST MILE!

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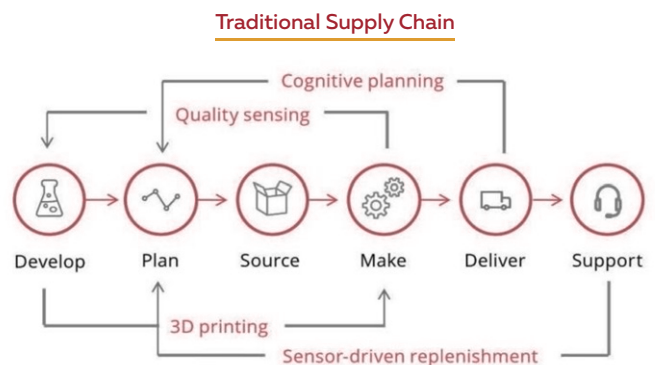
- T-Shirts @Rs. 1250/each
 - Coffee Mugs @ Rs.450/pc
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- are now available in exclusive designs.

Corporates who would like to bulk-purchase (MoQ of 30 for each item), for their supply chain teams and customize with their own logos/ messages, can write to chronicle@ascp.co.in

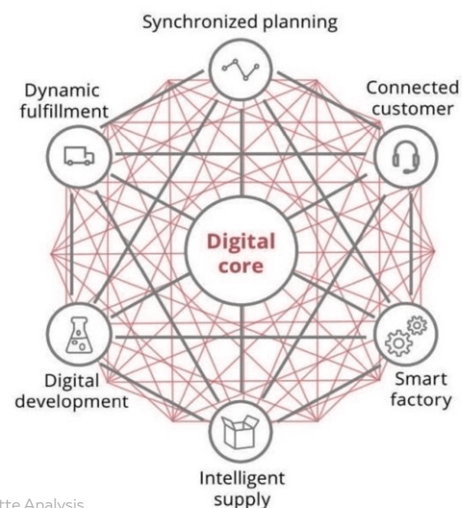
Lead Time for Delivery is 3-4 weeks after confirmation of order.

Shipping Cost is additional.

Traditional Supply Chain Model

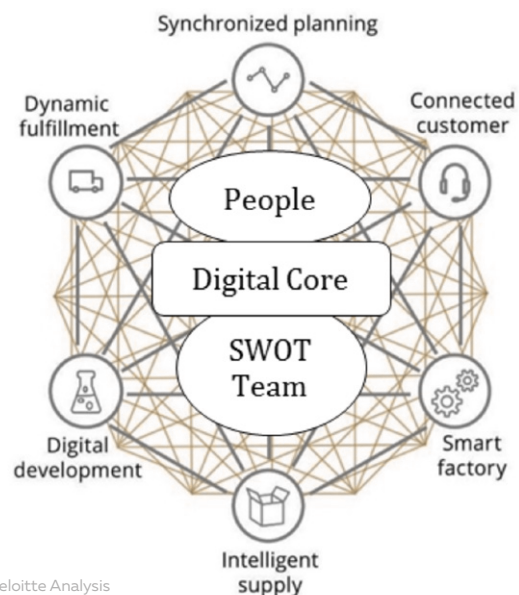


Digital Supply Networks



Source : Deloitte Analysis

Future Supply Chain Model



Source : Deloitte Analysis



SUPPLY CHAIN 5.0 – EARLY DAWN

It is expected that tomorrow's supply chains will be a connected, self-orchestrated, self-correcting ecosystems, where information would flow freely from end to end, in both directions, continuously assessing the demand and supply, generating feedback and self-correcting the whole system to meet the customer or market requirements. It will be fully digital and exceptionally flexible, the ecosystems will be dynamically adapt, with increased use of decentralized and localized manufacturing, and single-piece customization capabilities that can respond quickly to individual customer demands.

While industry is already moving to its Version 5.0, the Current SCMS 4.0 or JITSCMS 4.0 need to move up to its own Version 5.0, a new avatar to get integrated with Industry 5.0 (Society 5.0) as soon as possible.

And the day is not far off as the companies are already digitalizing their supply chains with increasing transparency & visibility, collecting and analyzing real time data as well as up skilling the workforce. On the way to this change, they must also protect their assets by prioritizing cyber security and digital privacy keeping following points in focus:-

- | | |
|--|--|
| • Dynamic Supply Chain Management | • New Transport Concepts |
| • Digital-At-The-Core Business Models | • Elimination of Digital Waste |
| • Managing the Flow of Data | • Predictive Maintenance and Supply Chain |
| • Intelligent, Agile Operations | • Creative Thinking |
| • Localized, Resilient Supply Chains | • Customer Needs Personalization |
| • Real-Time Decisions at The Edge | • Building Resilience |
| • Data-Driven Investment Decisions | • Up Skilling/ Reskilling |



With “The Great Reset”, the Supply Chain 5.0 may get a much needed push along with the rise of Industry 5.0 in order to meet unique mass personalization needs to Society 5.0, an partial element of anti mass production sentiments, a factor the JITSCM 5.0 need to take into account in its new growth. Interestingly, like Industry 5.0, Supply Chain 5.0 also will have to rely heavily on collaborative robots (cobots) & need to combine human creativity and ingenuity along with the productivity, speed, and consistency of robots to improve the customer experience. The rise of Society 5.0 may also give that extra push needed by Supply Chain 4.1 at this stage of transformation. While this next generation of supply chain solution is still in the making, deploying Industry

5.0 technology & amalgamating the current learning of COVID-19 period with JITSCM 4.1 will certainly lead to development of a new way of handling future supply chains.

However the COVID-19 pandemic, like other previous crises, will certainly leave lasting economic scars around the world in the years to come, but hopefully, it will also become the catalyst of a brighter and more sustainable future, thanks to the acceleration of industries' transformation, resilience, digitalization, consolidation, reconfiguration & green supply chains, productivity enhancements, and invention of new business models which may be similar to one given below and may be totally different with own set of complexities.



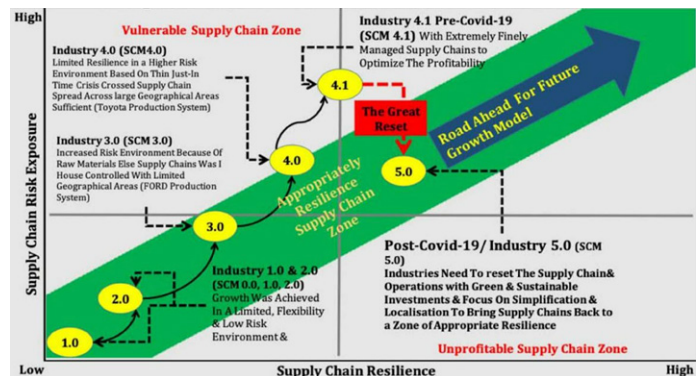
Lastly, it is worth reading the excellent piece of analysis of JITSCMS by WEF Director, Klaus Schwab and Economist, Thierry Malleret in which they have very interestingly provided the insight for future of expected New Supply Chain Management System (Probably in its Version 5.0!)

....what does “just-in-case” mean in practice? The model of globalization developed at the end of the last century, conceived and constructed by global manufacturing companies that were on the prowl for cheap labor, products and components, has found its limits. It fragmented international productiona system run on a just-in-time basis.... extremely lean and efficient, but...complex and, as such, very vulnerable. Simplification is therefore the antidote..... The costs of production will inevitably rise, but this will be the price to pay for building resilience.... (From “COVID-19: The Great Reset at <http://reparti.free.fr/schwab2020.pdf>)

Prabhat Khare is the Director of KK Consultants and BEE Certified Energy Manager.

He can be reached at prabhat.pkmail@gmail.com for any feedback to his article.

Changes in resilience over the phases on industrialisation



WRITE TO US!

The next issue of Chronicle is planned for **November 2021**.

We invite you to give your feedback, thoughts and article contributions for our future issues.

For Advertising spaces and any communication regarding the ASCP Chronicle, please write to chronicle@ascp.co.in.

We will publish selected comments in future issues of the Chronicle. Correspondence may be edited for clarity or for length.

SIGNING OF MOU BETWEEN ASCP AND NATIONAL ASSOCIATION OF FREIGHT & LOGISTICS (NAFL, UAE), IN DUBAI ON 15TH FEBRUARY, 2019.



Anshuman Neil Basu, Secretary General, ASCP signing the MoU with **Nadia Abdul Aziz**, President, NAFL - UAE & FIATA VP



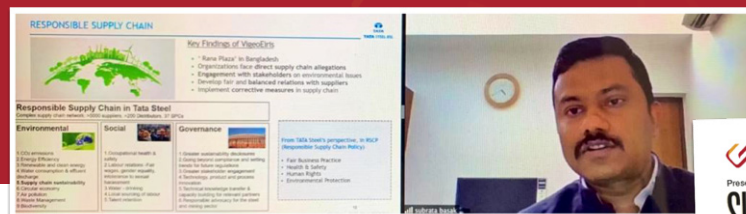
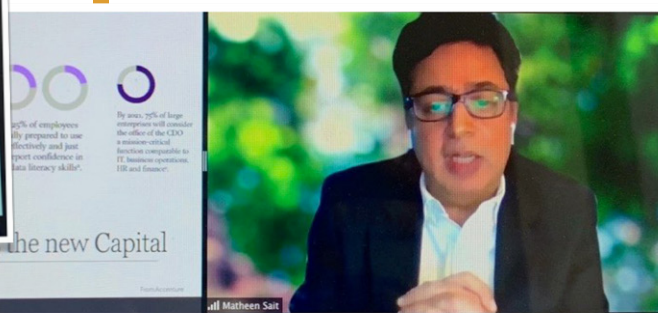


XLRI PGDM (GM) CONDUCTED ITS ANNUAL SUPPLY CHAIN CONCLAVE "CLOCKSPEED 1.0" IN ASSOCIATION WITH ASCP - 30TH JANUARY, 2021

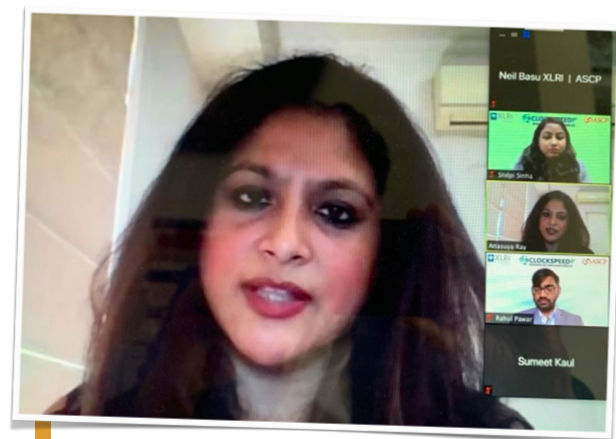
Prof. Edward Sweeney, Aston University, UK, during his presentation



Matheen Sait, 3M Switzerland, during his presentation



Subrata Basak, Tata Steel BSL, making his presentation



Anasuya Ray

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Post-Covid Supply Chain for India Region & The View from Outside India

30th May, Saturday 6:00pm to 7:30pm IST

A Free Webinar for Students & Anyone Interested in a Discussion on the Future State of Supply Chain in India

CLICK ON THE LINK IN THE DESCRIPTION
Selected questions will be addressed during the webinar.

In Conversation with

<p>Edward SWEENEY Professor of Logistics & Systems Aston University, United Kingdom</p> <p>TAS Vijayaraghavan Professor & Chairperson - Centre for LSCM XLRI Jamshedpur, India</p> <p>Eugene D'SOUZA Head - Corporate Planning & Control SONY Middle East & Africa FZE, Dubai, UAE</p> <p>Varsha ASARPOTA Transportation & Trade Compliance Manager 3M EMEA GmbH, Switzerland</p>	<p>Tomoyoshi OGAWA Professor of Marketing & Logistics Maj University, Japan</p> <p>Ambar BAKSHI Chief Procurement Officer, Tata Steel XLRI Jamshedpur, India</p> <p>John SALDANHA Senior Chair in Global SCM WVU John Chambers College, USA</p> <p>Anandhan NAIL BASU Director, SCM Programs & Secretary General ASCP India</p>
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Anchor: By Anandhan Nail Basu

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Presents

SUPPLY CHAIN - PART II TO RESPONSIBLE CHAIN

Post-Covid Supply Chain for India Region & The View from Outside India

6th June, Saturday 6:00pm to 7:30pm IST

A Free Webinar for Students & Anyone Interested in a Discussion on the Future State of Supply Chain in India

CLICK ON THE LINK IN THE DESCRIPTION
Selected questions will be addressed during the webinar.

The Conversation Continues

<p>Edward SWEENEY Professor of Logistics & Systems Aston University, United Kingdom</p> <p>TAS Vijayaraghavan Professor & Chairperson - Centre for LSCM XLRI Jamshedpur, India</p> <p>Eugene D'SOUZA Head - Corporate Planning & Control SONY Middle East & Africa FZE, Dubai, UAE</p> <p>Varsha ASARPOTA Transportation & Trade Compliance Manager 3M EMEA GmbH, Switzerland</p>	<p>Tomoyoshi OGAWA Professor of Marketing & Logistics Maj University, Japan</p> <p>Ambar BAKSHI Chief Procurement Officer, Tata Steel & President ASCP India</p> <p>John SALDANHA Senior Chair in Global SCM WVU John Chambers College, USA</p> <p>Anandhan NAIL BASU Director, SCM Programs & Secretary General ASCP India</p>
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9:30PM Tokyo

6:00PM Kolkata

4:30PM Dubai

1:30PM London

8:30AM New York

Many discussions on the topic, and the remaining 20 mins of the webinar held on 30th May will be continued in Part-II, and will have an extended Q&A session.
We recommend that you coincide it with a pot of tea or coffee of your choice.
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ENDNOTE

David MacLeod, Director, Learn Logistics, U.K.

He can be reached at : davidnmacleod@btopenworld.com



THE LIGHT AT THE END OF THE TUNNEL

Logistics service providers who can show greater degrees of certainty and reliability will gain market share and profitability. Those who can demonstrate superiority in working with others and accepting responsibility in areas not under their direct control will attract business. Proactively seeking and sustaining the supply chain community will become a marker of success. Those who reach out to their supply chain in a positive collaborative way will find many prepared to help in improving supply chain performance.

The world needs to invest in slack. For too long many parts of the supply chain have overstretched their resources. Key components must be able to adjust to new challenges and constraints without reducing service and incurring cost penalties. This will require innovative approaches and we are fortunate in being on the edge of being able to use artificial intelligence to crunch the numbers and ensure the analysis is far more comprehensive and accurate.

Mapping the supply chain has for too long been a huge and complex task. An opportunity is there for someone to provide a digital means to generate an accurate picture of a supply chain from which a clear sight of the constraints to performance can be seen.

India has a great deal on its side. Nevertheless, in global terms it is still punching below its weight as much of the world sees only the poverty and bureaucracy. It will be key to invest wisely in infrastructure and manage the technical changes available. The availability of communication technology such as Zoom and Teams is only scratching the surface of opportunity.

Above all it needs to harness the intellectual power of its population. Use the knowledge, skill, intellectual capital that is already there, and build on that foundation through more effective training focussing on closing the learning gaps. It is not a question of making one massive leap but one of sustained incremental improvements eliminating bottlenecks in the supply chain. Contrast the Olympic long jumper who takes 6 jumps to gain a record distance and falls over after each jump, with someone who walks the same distance in the same elapsed time and is still standing at the end having been able to sidestep at any point and is unaffected by adverse conditions. Those who are still standing can take the next step forward and don't have to go back to the start.

The old joke about “the light at the end of the tunnel just being a train coming towards you on the same track” should not diminish our optimism that the future can be better. We just have to make sure we are on our right track and take the opportunity even when things are dark to think about how we are going to act once light is restored.

A major global shipping and logistics business used to have the slogan “We deliver certainty”. This might well sound a somewhat hollow boast these days when nothing seems certain. However, regaining the lost ground will be a key challenge for all businesses to survive and prosper post-Covid. The vulnerability of supply chains has been alarmingly exposed. More businesses will need to extend their supply chain scope to an end-to-end vision and not take a short term blinkered view of their activities.

The world will recover but it will be a very uneven recovery. Some businesses and sectors will never reach the state they were in before. Others will quickly regain lost ground and new ones will come to the fore. The one common factor will be the business's ability to be resilient, adapt to change, and sustain the progress being made in a significantly more competitive and dynamic environment.

We will all need to manage ambiguity in our lives far more effectively. Little will be black and white. There will be no easy answers - shades of grey will dominate our quest to analyse complex trade-off decisions. Logistics and supply chain personnel are already good at problem solving. The problem is that they will just have to become better.



India Supply Chain Conference 2019 - Glimpses



Fr. Christie, Director, XLRI Jamshedpur and Mr Amitava Bakshi, President, ASCP



Transformative Experience through Supply Chain to bring Customer Delight

Adapting high customer expectations

OUR KEY FOCUS POINTS



Improving customer loyalty through focus and increased emphasis on quality



Direct Impacts of Packaging Understanding right packaging trends & their impact on the supply chain.



Application of AI mindset, Data Analytics & Cloud Strategy to increase productivity & reducing costs chain.



Collaborative Robots Empowering Employees & Driving Efficiency chain.



Climate Change & Supply Chain - Immediate Approach.



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The Association of Supply Chain Professionals (ASCP), formed in 2017, is India's first home grown not-for-profit association for supply chain & logistics professionals registered by the Bombay Charitable Trust and established under the Societies Registration Act, 1860.

ASCP provides opportunities for professionals to communicate, develop and improve supply-chain managerial skills and create awareness about innovations and appropriate supply-chain systems for efficient business growth.

ASCP strives to be amongst the top supply chain professional associations in the world, providing leadership in developing and enhancing the supply chain management profession across India.

The Objectives of ASCP are to:

1. Articulate the genuine needs and concerns of supply chain professionals in India and be available for consultation to take up policy issues needed for the sector.
2. Encourage and promote interactions amongst the members to showcase innovative practices, focusing on the best industry solutions.
3. Support to create skilled manpower and opportunities to generate employment in India.
4. Facilitate and sponsor events for all-round industry engagement and networking.
5. Be the center for thought leadership and innovation in supply chain research and development, imparting world-class expertise.

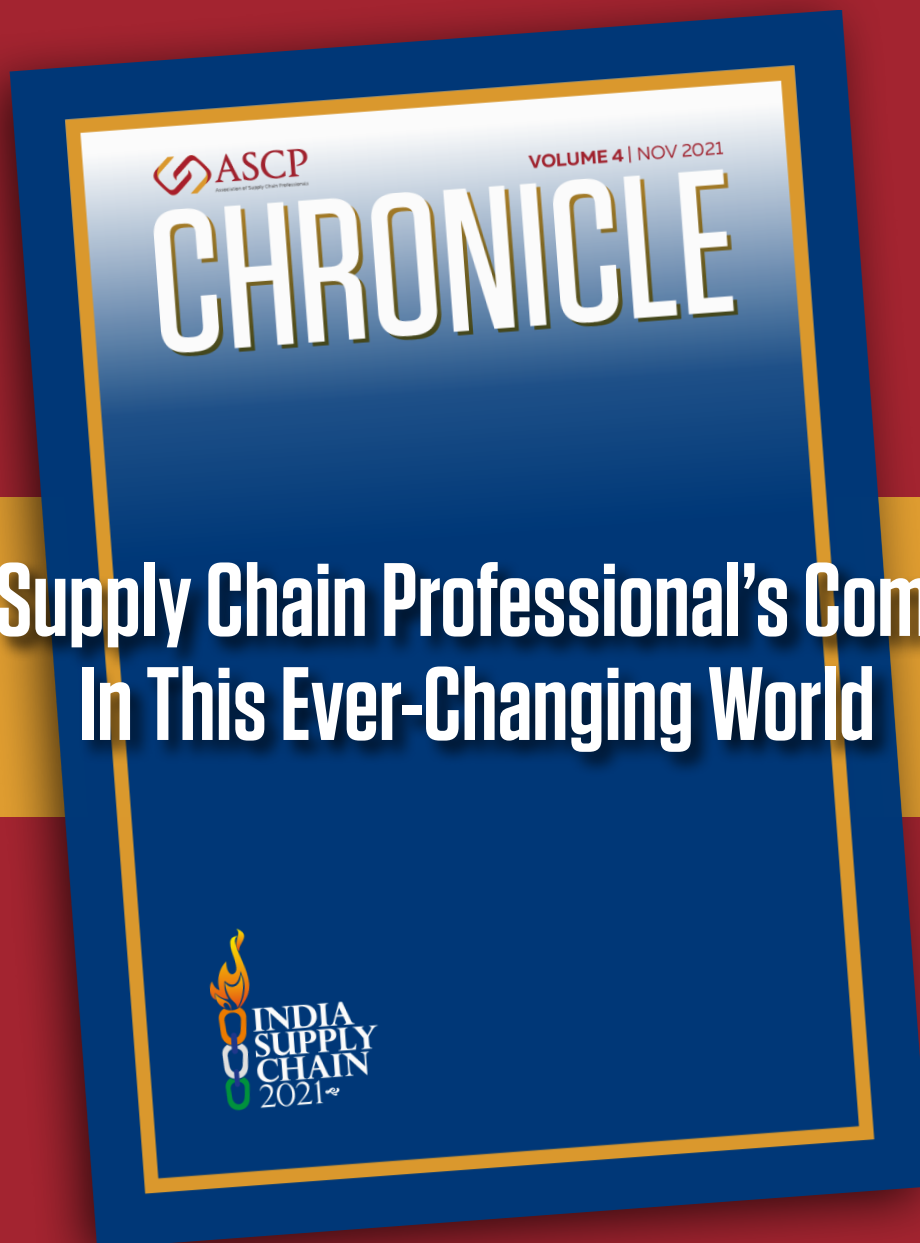


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