

CELERITY™

IN BUSINESS THROUGH SUPPLY CHAIN

SUPPLYCHAINTRIBE.COM

March - April 2020
Volume 4 Issue 2

For private circulation only

PERSPECTIVE

Insightful learnings from sustainability crusaders who are leading the pack

WHAT. WHEN. WHERE-HOUSE.

The art & science behind designing and developing new age warehouses suited to meet the needs of tomorrow

BLUE DART



**INDIA'S MOST
INNOVATIVE
& AWARDED**
EXPRESS DELIVERY COMPANY



BLUE DART'S UNIQUE DIFFERENTIATORS

I ❤️ MY BLUE DART



**OWN DEDICATED
AVIATION &
GROUND
INFRASTRUCTURE**



**SOLUTIONS
FROM A
DOCUMENT
TO A
CHARTER
LOAD**



**EXTENSIVE
DELIVERY TO
OVER
34,854
LOCATIONS**



**BEST-IN-
CLASS &
FASTEST
TRANSIT
TIME**



**ONE OF INDIA'S
BEST PLACE TO
WORK -
PASSIONATE &
COMMITTED
TEAM**



**RELIABLE &
HIGH SERVICE
QUALITY |
TIME BOUND
DELIVERY**



**HIGH
RESPONSIVE
& CUSTOMER
CENTRIC**

MOST ADVANCED TECHNOLOGY SOLUTIONS - PIONEERS & INNOVATORS

- 10+ DIGITAL PAYMENT OPTIONS
- INDIA'S FIRST PARCEL LOCKER
- MOBILE SERVICE CENTRES
- PARCEL SHOPS
- SMART MOBILE COURIER DEVICES
- INTELLIGENT DASH-BOARDS
- POWERFUL CONSIGNEE CONNECT PROCESSES
- CUSTOMISED API/EDI SOLUTIONS
- ELECTRIC VEHICLES ZERO CARBON EMISSION
- REVERSE & OPEN REVERSE PICK-UP
- SLOTTED / CONVENIENT DELIVERY OPTIONS
- GPS ENABLED DEVICES FOR CUSTOMER/COURIER INTERACTION
- PRE-DELIVERY SMS INITIATION



1860 233 1234

www.bluedart.com

[/bluedartofficial](https://www.facebook.com/bluedartofficial)

[/BlueDartTweets](https://twitter.com/BlueDartTweets)

[/bluedartofficialchannel](https://www.youtube.com/channel/UC...)

[/company/bluedart](https://www.linkedin.com/company/bluedart)

The Action doesn't stop in Supply Chain



Dear Readers,

Coronavirus has taken over conversations between global supply chain managers. China accounts for approximately 27% of the world's manufacturing output. The impact has shaken the manufacturing world. The counter-trend to the globalization of supply chains will most probably speed up. Industry 4.0 is bringing down costs of production in major economies of the world due to which the gaps in cost of producing in China vis-à-vis in-shoring is coming down. So, countries like USA and Germany could keep manufacturing back in their countries.

In India, action continues on the Infrastructure front. Major large Real Estate developers are creating Grade A facilities with defined parameters using global best practices. Sustainability is also getting imbibed at the design stage itself. The gaps in understanding between the developers, landowners, policy makers and financial institutions need to be addressed for ease of land acquisitions, financial resources and optimal use of space. Given the transformational phase of our supply chains, the demand for Built-to-Suit facilities is only set to rise.

Another very interesting phase in the life of a Supply Chain Head is the transformational journey to Supply Chain 4.0. Where does one start the journey from? Once the budgets get approved from the board, the actual challenges begin. Giving way to new technologies such as artificial intelligence (AI), machine learning (ML), the Internet of Things (IoT) and robotics with real-time data from current traditional models is not a smooth ride. The ground realities are very different. From data management to buy-in from vendors, suppliers, employees, etc., change management is required across the organization. Read our Roundtable section to understand how these problems can be overcome in real life.

The start of 2020 has been extremely challenging globally and in India. As we progress into the next Financial Year here, here's looking forward to getting back some stability in our economy.

A handwritten signature in black ink that reads "Charulata Bansal".

Charulata Bansal
Publisher

Charulata.bansal@celerityin.com
www.supplychaintribe.com

Published by Charulata Bansal on behalf of Celerity India Marketing Services
Edited by: Prerna Lodaya • e-mail: prerna.lodaya@celerityin.com
Designed by: Lakshminarayanan G • e-mail: lakshdesign@gmail.com
Printed by: Xposures, A 210, Byculla Service Industrial Estate, D K Cross Road, Byculla, Mumbai- 400027.
Logistics Partner: Blue Dart Express Limited

CONTENTS

March - April 2020
Volume 4 Issue 2



14

COVER STORY

WHAT. WHY. WHERE-HOUSE.

Demand for efficient logistics space that facilitates quick movement of goods to consumers has necessitated the design of new warehouses that are larger in size and height. But how these new age warehouses are developed in accordance to 3Ss – Safety, Security and Sustainability; will be what drives the market share of developers in the country. Our experts in the space offer their expert insights into this very critical subject that needs attention from the developers, occupiers and policy makers alike...

5 REPORT

Future Proof your Supply Chain

As the coronavirus outbreak spreads rapidly, supply chain leaders must mitigate instant disruption and plan for future incidents, states a *Gartner* report...

10 ROUNDTABLE

Supply Chain 4.0

Digitization, Digitalization, Digital Transformation – all these words are being used inter-changeably and very often. At a recent Samiksha event at NITIE, expert panelists shared their experiences in implementing the same.

INTERVIEWS

6 The Era of Digital Natives

"The key pillars for supply chain growth in the coming times are most definitely going to be People," affirms *Mukta Khanna*, Partner & Chief Supply Chain Officer, i2V Cinergy.

24 Smartly Sustainable

"We manage energy consumption & increase sustainability through EcoStruxure™ Power Deployment," quips *Javed Ahmad*, Senior Vice President – Global Supply Chain, Schneider Electric India.

30 Grooming In Style

"While designing a product, globalization is the alpha parameter; gauging the need, a product gets localization touch, which drives through the flow of regional demands," shares *Ponraj Periswami*, Head – Supply Chain at an MNC.

27 PERSPECTIVE

Sustainability for Sustenance

Insightful learnings from early adopters of sustainability and how they are leading the pack...

32 RECAP

News and views trending globally

Editor: Perna Lodaya

DISCLAIMER: This magazine is being published on the condition and understanding that the information, comments and views it contains are merely for guidance and reference and must not be taken as having the authority of, or being binding in any way on, the author, editors, publishers who do not take any responsibility whatsoever for any loss, damage or distress to any person on account of any action taken or not taken on the basis of this publication. Despite all the care taken, errors or omissions may have crept inadvertently into this publication. The publisher shall be obliged if any such error or omission is brought to her notice for possible correction in the next edition.

The views expressed here are solely those of the author in his private/professional capacity and do not in any way represent the views of the publisher. All trademarks, products, pictures, copyrights, registered marks, patents, logos, holograms and names belong to the respective owners. The publication will entertain no claims on the above.

No part of this publication can be reproduced or transmitted in any form or by any means, without prior permission of the publisher. All disputes are subject to the exclusive jurisdiction of competent courts and forums in Mumbai only.

Future proof your SUPPLY CHAIN

As the coronavirus outbreak spreads rapidly, supply chain leaders must mitigate instant disruption and plan for future incidents, states a Gartner report...

ON December 31, 2019, the World Health Organization (WHO) learned of several cases of severe pneumonia in the Chinese city of Wuhan. As global leaders and health officials track the strain and make decisions regarding containment, supply chain leaders need to assess and plan for how the virus will impact global supply chains. The full impact of coronavirus on supply chains might not become obvious until sometime in the next few months and beyond.

The challenge of globalization

Although the outbreak is being compared to the 2003 SARS outbreak, China is now much more developed and integrated with the global economy, and the country has significantly improved its transportation networks. This means the supply chain implications go beyond regional concerns. Travel restrictions, shortages in labor and materials, as well as logistical challenges through tightened controls, and hub and border closures will cascade and augment the impact much further today than it did 17 years ago. Indeed, the coronavirus outbreak has already eclipsed SARS.

How coronavirus could impact supply chain

Though it is difficult to predict the exact consequences of coronavirus, organizations might begin to see impacts across the supply chain, including:

MATERIALS: Supply shortages of materials or finished goods coming from or routed through logistical hubs in impacted areas.

LABOR: White- and blue-collar labor may not be available due to quarantine

guidelines or illness.

SOURCING: Travel may be restricted to certain areas, limiting the ability to discover, qualify and certify new business or programs and to transact business.

LOGISTICS: Established hubs and supply networks may experience limitations in capacity and availability so that even if materials are available, they would be stuck elsewhere. Finding alternative routes and means of transportation will become difficult.

CONSUMERS: Consumers may be more cautious in their purchasing habits due to fears about being in public and potential exposure to the virus. Many may turn to online sales, challenging logistics networks.

Preparing supply chains for disruption

Disruptions happen. Leading supply chain organizations utilize enhanced risk management processes. They include a framework to continuously measure key risk indicators and to prepare scenarios for controllable and foreseeable uncertainties such as compliance, labor, material, capacity and financial issues.

Epidemics and pandemics present a different scenario. The main impact is a lack of access to staff, decreased productivity and a change in public behavior in terms of shopping practices and spending. "The full impact of coronavirus on supply chains might not become obvious until sometime in the next few months and beyond," Köse says. "However, supply chain leaders should take initial steps now to monitor and prepare for the impact on their value chain."

Do it now

Develop a high risk for supply chain disruption monitoring and response programs for countries impacted by the virus and potential supply chain exposure from tier I and below. If lower tier transparency is missing, start building up the program and prioritize discovery to get a full picture rapidly. It's also important to assess how customer spending might be affected.

The next step is to make sure all inventory is within reach and outside impacted areas and logistical hubs. Additionally, supply chain leaders should work with their legal and HR departments to understand any financial implications of not being able to deliver supply to customers and provide guidance to employees located in the impacted areas.

MID-TERM ACTIONS: Do it this quarter

In the midterm, the focus should be on balancing supply and demand as well as building buffer stock. Assess opportunities to diversify the supplier ecosystem and review or create the organization's overall risk management approach. Work with internal stakeholders and strategic and critical suppliers to establish a congruent risk management approach to monitor and prepare for potential material and manufacturing capacity shortages.

LONG-TERM ACTIONS: Do it this year

Once the initial impacts of the crisis are mitigated, it's all about foreseeing the next "when." Supply chain leaders and their teams can, for example, conduct a scenario planning exercise and develop action plans. This is the time to discover or develop alternative sources and diversify value chains.

Source: Gartner

The Era of DIGITAL NATIVES

“The key pillars for supply chain growth in the coming times are most definitely going to be People who are fearless to accept and adopt changes, working on the right processes, imbibing the ever-evolving technology, while ensuring Sustainability” affirms **Mukta Khanna, Partner & Chief Supply Chain Officer, i2V Cinergy.**

What have been the transformations over the years in the FMCG sector?

FMCG has always been perceived as one of the most demanding sectors to work with, since this is a sector which is directly impacted by the consumer moods, fan followings, reactions, loyalties, besides environmental conditions and seasons, making it quite unpredictable, forcing supply chain managers to shift gears to alternate plans. This sector has also now evolved to a certain degree and there is a method to the madness, which is now helping the organizations get into a certain degree of predictability. Also, there are more qualified people in supply chain, who are taught subjects like forecasting and planning, for coming times, new developments such as artificial intelligence, machine learning are now coming in the supply chain of FMCG too, making them predictable to a reasonable degree.

How complex is the retail supply chain? What are the challenges and how to deal with them?

Retail supply chains are complex because here the consumer expectations actually meet the availability. Consumers are flooded with far more relative choices; hence all good products have competition from better

shelf placed ones and still lose out. I remember many times seeing the Kurkure Namkeens kept in the highest shelf where I could never pick them, despite they being better Namkeens in taste vs the more known brands! Besides this, challenges ranging from fast-changing technology, shifting retail formats, overabundance of consumer choice, greater focus on quality and price, and a tough economic climate also tend to add complexities in the supply chain, if not given due attention at the right time. The challenges are leading to dropping profit margins, operational complexities, ever-changing regulatory compliances, disassociated omni-channel integration, etc. To deal with these challenges, in the coming times, retailers are expected to be undertaking the following steps:

- Invest in faster and more convenient ways to tackle final-mile delivery in 2020 plus
- Select future-compatible technology, which seamlessly integrates with self, vendor and customer tech base, enhancing presence in the virtual world
- Create omni-channel inventory pools



Mukta Khanna is an accomplished professional with recognized proficiency in spearheading different business models to achieve corporate goals. Having worked for diverse globally leading companies like PepsiCo, Reliance, Lafarge, Mayur, she has more than 27 years of experience driving centrally integrated supply chain, global procurement & operations, strategic sourcing, and, business; coupled with commercial, logistics, EXIM, Transformation & Process Excellence, Automation & Digitization. She is one of the very few Industry women leaders in the country who has unique equal business experience. She has also largely contributed in the Digital Transformation journey for PepsiCo and Reliance. At the same time, coaching being her passion, she has trained for more than 10000 manhours of professionals undertaking change management. She is parallelly associated with NMIMS since 2018.

- Partner with consolidators as an intermediate between distributors and retailers to service low volumes
- Adhere to compliance norms; and
- Train the staff to handle consumers in a personalized manner.

What have been the supply chain best practices implemented by you?

Fortunately, I have worked in different industry types and sectors be it manufacturing or services and at each one of them I have had the opportunity to contribute, starting with ISO 9000 systems in my first organization, supporting TQM, and using Lean Six Sigma concepts in creating process excellence. I have largely worked on digital transformations and automation in supply chain for creation of direct decision tools. But, I have also worked from the basics. My journey, both in Reliance and PepsiCo, fortunately gave me scope to build from scratch, hence pushing me to work on fundamentals and creating industry suiting processes like working on TCO concepts in procurement, capex-opex tradeoffs, process streamlining, ensuring ethical sourcing, working capital improvement, cost optimization, and then build upon

the more complex ones like digitization of supply chain, integrated planning and to the next steps in artificial intelligence for innovation launch, product changeovers and so on.

What are your views on revamping end-to-end supply chain with innovative strategies?

Supply chain, as the name itself, talks about chain of activities and consequences which are influenced by each other. All this while in last several years, supply chain has had multifold limitations being generated from different stages of finished goods forecasting to raw material sourcing & planning, to manufacturing to generating finished goods to logistics and transport and final retail. Every supply chain has faced impacts of inaccuracy, leading to understocking of some goods that are actually desired, while over-building and stocking of some of those that do not end up selling leading to write-offs of both finished goods and raw materials. Innovative strategies are required for each phase so that the impacts of forecast vs actual variations, which are leading to business loss opportunity get plugged. With the current situation where majority of the companies have very little room to absorb losses, and sustenance is depending on revamping the supply chain with innovative strategies, be it by digitization and technology usage, or machine learning or IOT, or controlling raw materials or logistics, the key is creating optimization and removing multiple buffers.

What are the procurement obstacles for procurement professionals in the country? What is the impact of procurement on supply chain?

Procurement is a critical aspect of supply chain, and so is inbound supply chain. Being the last leg of supply chain in terms of receiving forecast, and the first leg for supply to ensure that goods get manufactured, procurement professionals face multiple pressures, which include pressures from the marketing teams to deliver even if their forecasts were quite wrong, external global risks, changing customer preferences, pressures to bring cost productivity year on year, manage crisis, financial risks of the



Every supply chain has faced impacts of inaccuracy, leading to understocking of some goods that are desired, while over-building and stocking of some that don't end up selling. Innovative strategies from business to business are required for each phase so that the impacts of variations leading to business loss get plugged. With the current situation where majority of the companies have very little room to absorb losses, and sustenance is depending on revamping the supply chain with innovative strategies, the key is creating optimization and removing multiple buffers.

organization, leading to impacts on bargaining, etc. While all other forecasts impact the internal management in an organization, it is the procurement which has to communicate and rectify the impacts with external parties and which at times also has legal implications. According to Deloitte's survey, only one-third of procurement managers use advanced analytics and other modern technologies to guide their procurement and inventory management policies. This may possibly explain why inventory levels are still climbing. The truth is that the pace of business is such that few organizations can succeed if they persist with manual and legacy inventory optimization practices. However, procurement has now started gaining importance within the organizations and also gaining technological support.

How is technology evolving for the continuous growth of supply chain in the country?

Technology is the key impactor in the supply chain. Organizations, about 15-20 years back in India, were getting into SAP and the journey for technology adoption had started. The cultural change was critical at that stage because teams were used to mammoth manual workings. Last couple of years have seen remarkable developments in all the facets of supply

chain, starting from demand planning to supply planning, manufacturing, and logistics. Data is now truly turning into information and to decision making tools. This is helping control wastages at different levels and increase responsiveness to the customer. In 1997, when world chess champion Garry Kasparov lost against IBM's Deep Blue Supercomputer, he spoke that the real challenge is not to determine who is superior — man or machine — but to achieve the right combination of man and machine. This insight also applies to supply chain operations. The fact is that people and their experience and sound judgment are necessary to make the right decisions, but at the same time, understanding how supply chain software can complement and extend human abilities, will improve performance and achieve maximum profitability. The right combination of technology and human brain power leads to the most informed decisions and best results.

In times of Omni-channel markets, the pressure is huge on SCM professionals. What are those and how to best manage them?

Omni-channel markets have a common issue which is "Inventory- OVER OR UNDER". There are two types of approaches different organizations are taking for it-



In 1997, when world chess champion Garry Kasparov lost against IBM's Deep Blue Supercomputer, he spoke that the real challenge is not to determine who is superior — man or machine — but to achieve the right combination of man and machine. This insight also applies to supply chain operations. The fact is that people and their experience and sound judgment are necessary to make the right decisions, but at the same time, understanding how supply chain software can complement and extend human abilities, will improve performance and achieve maximum profitability.

- Serving omni-channel needs by different teams like traditional trade team, modern trade team, e-commerce team, etc.
- Omni-channel needs being serviced from common inventory

Both scenarios are driving different types of pressures on supply chain professionals. While in the former case, there is always a stress of under or over inventory due to demand variability and prioritization given by the organization to service. On the other hand, in the latter type, there are challenges to service, lack of understanding of types of customers and storages. Also, the need for organizations being not just digitally literate but embracing technologies and knowing them in time is important. With changing market dynamics, it's important that SCM professionals upgrade skills in time.

How can next level inventory optimization achieve successful Omni Channel fulfillment?

Irrespective of whether it is a retail or an online customer, end of the day, it is the same customer which is targeted. So, while earlier the chain was traditional trade, followed by addition of modern trade, which has now matured into e-commerce and other facets too. The consumer research methods have also now evolved with the advent of technology, leading to intent for an informed buy, where a consumer researches about product and options on the Internet, takes views from friends as well as reviews, visits a store for a high cost product and then orders. Understanding demand patterns using potential consumer data

is the most helpful method, which can help streamline inventory and create fulfillment on common omni-channel depots rather than separate inventory for e-commerce, modern trade and traditional trade. Not just that, it can also help fulfill demand gaps in various regions.

What are the key pillars of supply chain growth in the country?

The key pillars for supply chain growth in the coming times are most definitely going to be People, Technology, Process and Sustainability, combined with the approach and fearlessness to adopt changes, and the new...or to say... "The key pillars for supply chain growth in the coming times are most definitely going to be People who are fearless to accept and adopt changes to reach a new, working on the right processes, imbibing the ever-evolving technology, while ensuring Sustainability".

You have been one of the few women supply chain leaders in the country. How has been the journey?

Well, the journey has been a mixed bag to be very honest. It has been very good when I expected it the least. I followed a mantra, "Never consider yourself as under or over privileged. Work and behave at par!" I worked in international marketing, commercial and domestic sales before I entered core fields of supply chain, and I am thankful to each of the companies in helping me grow and understand different aspects of business. Coming to supply chain & procurement, it was Reliance that gave me the opportunity and a free hand to prove my mettle, and I am glad that I did, followed by PepsiCo with

challenging work in 26 plants. However, the journey will never be a cake walk. I have had my share of feeling dejected and humiliated as I have had for celebrations and acknowledgements, but I am thankful for the faith showered in me.

What have been your learnings during this journey?

Being updated with the latest and foreseeing the issues ahead is an important step to handle crisis. It is very important for a supply chain professional to develop this power. Success only comes with an entrepreneurial behavior and belief. Willingness to take challenges and being fearless in taking initiative is equally important.

How embracing is the supply chain fraternity now for women?

Supply chain fraternity is becoming more inclusive for women now, right from a level of a "night shift in-charge" in the plant to a truck driver and corporate offices. However, there are still inhibitions and assumptions about women. While organizations talk about an interest in women taking on senior roles, however finally taking them and a willingness to lend a hand to make them walk the last mile where they are falling short is hardly there. This aspect is the most important thing to look into. As such this is a fact that all said and done, women have to work much more in profession on both psychological and performance levels much more cautiously so as to gain respect and carry the image where she is taken seriously, along with her above-excellence performance. She still

often ends up being paid less and being subjected to side remarks like "Madam ko toh kaam ki zaroorat nahi hogi, her husband is there after all". There is still a lot that needs to be done, and it is very important that senior leaders of the industry start working towards it. The ratio of women to men in supply chain are still less than 15% at senior CXO levels, and at various places even lesser.

What would be your advice to next gen supply chain managers to achieve the unprecedented?

No one can achieve the unprecedented if they do not have the skillset, willingness to slog, faith in themselves and the universe, and being genuine in the purpose and making efforts for the same. Hence, if you wish to wear the gown and crown, be ready to make the effort into the areas where others are less comfortable. I often advise young women professionals to think about entering logistics, transport and warehouse if one needs to taste success in supply chain, and not treat them as fields not good enough for women. Also, today's scenarios are quite different from what they were a decade back, and I must say that now they are better for women. I call Technology becoming the first partner today (jokingly!), and

making working scenarios better for all, especially women.

How do you foresee supply chain landscape going ahead? What are the major developments?

The coming era is surely going to be the era of Digital Natives who are the first generation born and brought up in the Internet era. This will lead to a major expectation and emphasis on using technology as a given base of supply chain. Like many other functions that are getting outsourced, even supply chain is expected to move in that direction with a backing of technologies like the IoT, Robotics, etc. Supply chain of Indirect/MRO items is also expected to change where 3D printing will make more inroads and supply chain will involve transmission of CAD/CAM files rather than products. IoT will impact the ordering cycles and clustering too, where goods will start talking to each other. The trends, such as a customer getting reminders on his reordering needs based on earlier purchase date, have already started.

Please share with us a retail supply chain manager's quick fix solution to an unforeseen supply chain issue...

Ideally, a supply chain person should

always be ready with more than one backup plan, and the planning needs to be adverse consequential planning too. However, if unable to handle, for an unforeseen supply chain solution, the biggest tool is transparency, confession of the issue, intent to rectify, seeking help, and actions to supplement that the issue is fixed at the earliest in all honesty. Let's face it, problems will come, however if one is honest with the stakeholders, generally support and time will be given to amend, and the situation will pass.

What are the changes we are about to witness in times to come?

The "Data World" will merge with "Interpreting Technologies" leading to — in-your-home targeted & focused marketing, reduction of system waste, and adaptive distribution. All these will have an impact on the social thread, improving lifestyles and increasing work life cohesiveness. However, the skillset needs will be ever changing, which will need to be integrated with the education system, else it will start creating a bigger "intelligence obsolescence"!

CELERITY

THE TWO GOOD AWARDS ARE BACK!

30-under-30 Supply Chain Superstars
40-under-40 Supply Chain Super Achievers
Visit www.supplychaintribe.com

Supply Chain 4.0: OVERCOMING OBSTACLES IN DIGITIZATION

Supply Chain 4.0 has become a hot topic with little understanding of the term as well as the challenges which lie ahead when an organization starts a digital transformation process. The recent Samiksha which is a corporate panel discussion, at NITIE, dwelled upon this. Here is what the panelists had to share on the topic...



Akash Srivastava,
Partner, Deloitte Touche
Tohmatsu India

Supply Chain 4.0 regime is very much here to stay.

Investments in 4.0 will increase over the next decade. Recently, Pentagon awarded a \$10 billion cloud computing deal to Microsoft in the US. These are going to percolate down to India also and India is at the cusp of it. So, one of the challenges is skill sets. Building skills in the areas of Machine Learning, Artificial Intelligence, Robotics, etc., is going to be rewarding. At Deloitte, we feel that skills need to be refreshed every year to be able to stay relevant. Business graduates stepping into the corporate world need to understand technology and will have to get their hands dirty in ML coding etc., if they want a 4.0 career. This is a huge challenge we face as campus recruiters. Freshers need to have skills that are complementary, both on technology and management.

A second challenge for senior management is to decide on how much to invest and where? Whether data should be put onto cloud first and then develop analytics or start work on pilot somewhere? As we get into the next couple of years, more clarity is emerging on this. Another is availability and interpretation of data, how is it structured and engineered? Interpretation of data should be multi-dimensional so that one can take experiential decisions. To replicate this into a machine learning program is not an easy task. The data itself should be multi-dimensional and able to talk to each other. Data engineering will become a very important skill. Another important thing is that when we talk about digital from a supply chain standpoint, we talk about a warehouse executive or a trucker or an operator. Most of them have basic schooling and so their interaction with digital needs to be made very simple. So, to make them adopt it, the user experience must be like child's play.

The third important thing, and it is a moving goal post, are the technologies and the players. There are a variety of technologies out there with many players and deciding which technology and by whom has become a very complex decision to make.



Venkatesh Seshadri,
Head - Supply Chain
Consulting, CII Institute
of Logistics

Technology has become the key driver in Supply Chain transformation.

Alibaba wants to predict what the customers want to buy while Amazon wants to deliver when the customer is thinking about the product. So, this is what is going to happen in Artificial Intelligence.

Are we prepared for 4.0? No, it is going to take more time as the technology penetration in Indian Supply Chain has just started gaining traction. Startup Technology solutions in India are extremely promising.

Skillsets are going to be really important in the days to come. I came across an interesting

distinction between a Statistician, a Machine Learning expert and a Data Scientist – the Statistician will talk about data, Machine Learning expert will talk about algorithms and the Data Scientist would be the guy who would derive inspiration and tell stories from data.

Blockchain is futuristic. It is getting clear that Blockchain is not a disruptive but a foundation technology. AI with a combination of IoT has a lot of potential. Some of the heavy manufacturing industries are already using IoT, e.g. if some of the machines are idle, it triggers an alert. 3D printing has also caught up, especially in new product development and spare parts management.



**Ranjan Sharma, CIO &
Head-SCM, Bestseller
India**

With new technologies, new skill sets are required.

Being a fast-fashion player, we need to be high on trend, we need to bring in new fashion to the stores much faster. We start our design process which includes sampling across multiple countries more than a year back. And if you are designing so far back for trends a year later, chances are that mistakes will be made. The idea is how to minimize those risks.

So, one of the projects that we embarked on was digitizing the whole process of sampling and bring that down to the number of samples that we were creating for each of these brands. How do we at least in the next three years bring that down by half? We introduced a technology called 3D Designing, which was much more collaborative across the whole value chain, across our suppliers, and across our own design organizations. One of the other challenges also was- designers always think from their own perspective. How do we ensure that whatever is designed is also saleable? There might be cases where it is far ahead of the time. So, how do you identify when you need to make and what? Therefore, you need to be much closer to the time when the product is actually getting launched. So how do you reduce that cycle of design, then sampling and getting it on the shop floor? And we are also now talking about creating different buckets of products. We are looking at how we can make products that could be designed and delivered at the stores in 60 days. We've reached that stage as well.

We have set up a Fashion Research Lab in India- an innovation lab with IBM and we're working with them to create and co-create a lot of solutions. We've in fact just launched a product recently called Fabric.ai. The idea is- how do you get insights when the designer starts designing when he gets the inspiration? From the inspiration, how quickly can he figure out if it even makes sense to go with that inspiration? Or is there something that's been in the past from our existing data? Then it could also come from some trend data which is already available in the industry. In the first phase we have gone live with internal data. This data will give us the capability to predict what is going to sell and if the designer feels that there is something that he can change and figure out the right pattern or shade that will make sense, will the saleability get impacted? So that's how we are harnessing data to bring in speed from design to store.

I would also like to mention that with new technologies, new skill sets are required. So, this is my request for institutions to be able to churn out talent for newer technologies. For stable technologies like SAP, there may be an abundance of people, but we are going to create a differentiation with the new technologies. And for that differentiation, if we are totally dependent on an IBM or anyone else, it becomes too expensive- that's not a model that we can sustain. We will have to create our own capabilities because it is not about one-time AI solutions, the solutions will have to change and adapt as per new business challenges.



Raghavan Santhanam, Senior Consultant, Stratadigm

Accept the challenge and digitally transform your organization.

When the word Digitization is used, we need to make a clear distinction between what is Digitization, Digitalization and Digital Transformation. People use these words interchangeably, but each of these are different.

Simply put Digitization is converting analog information to the digital form e.g. Converting handwritten or typewritten text into digital form is an example of Digitization. For instance, in an organization that has 2,000 Vendor Partners, every time the Supply Chain Operations team wants to enroll a vendor partner into their eco system, the vendor is asked to provide a certificate of registration and other documents for verification purposes. There are lot of mechanisms like (EDI) Electronic Data Interchange to convert that paper information into digital. So, in essence, it's the information you're digitizing, not the processes.

Digitalization is about not just changing the technology, but also the processes from old to new. Use of digital technologies is done to change a business model and provide new revenue and value-producing opportunities. It would normally involve automation which means shifting of work roles or transforming processes.

Lastly, Digital Transformation is a series of digitalization projects, automating processes and re-training workers to use computers. Digital transformation is about the customer. It involves transforming the business model and organizations strategy.

Organizations tend to implement the latest technologies and one can do umpteen number of things using IoT,

Data Analytics and AI. But if the clarity is missing on why an organization is doing this, it will not lead to a successful digital transformation. Many organizations lack the end goal clarity. I believe that this is a key challenge that needs to be overcome in Supply Chain Digitization. Organizations which are successful in digital transformation keep the customer in mind and use technology to serve the end customer.

If you look at how supply chains are being disrupted in every industry (Banking, Retail readily come to mind) whether an organization should digitally transform itself, is now no more a question. What the organizations should be focusing more is on the pace and speed of innovation to solve specific use case scenarios. IOT (Internet of things), Analytics and Artificial intelligence are drivers that are spawning new applications impacting the future of supply chain. There are several digital opportunities that are enabling transformations in every node (Develop, Plan, Source, Make, Deliver, Support) of the supply chain today.

For example, in case of development of a product, previously you used to stop a manufacturing line, to get a new product or sample done. You needed a minimum run. Now you have 3D printing, a process of building an object one thin layer at a time. It is fundamentally additive in nature. Many organizations have used crowd sourcing of ideas to develop a product. In planning: demand analytics, In Sourcing: smart scheduling, In Making: exoskeletons, in delivering: Big data / RFID, In Support: social media. There are many technologies which have come up now. The point is that there is no question that digital transformation should be a priority for Organizations. If they don't do it, some other nimble company will do it, and one will be out of business.

New digital applications are enabling a truly integrated Supply Chain ecosystem. Traditional supply chain operated in Silos and every department had their own TATs (turn around times). That model is being transformed into a control tower, track and trace model, where irrespective of one being a customer, supplier, distributor or a manufacturer, one is always connected. All supply chain activities are now moving from linear to non-linear

model. The oft repeated success story is that of Amazon. The fact that Amazon has been able to bring down delivery time from two days to two hours is remarkable. Now they are talking of a promise that if you are in an Amazon store, and if you as a customer are on your mobile, and have placed an order, within two minutes they will deliver the ordered item to you in that store – this is truly all about digital transformation.

In terms of challenges, one can look at it from the Organization, People, Process and Technology prism. One of the biggest challenges I think is getting funding in an organization for these projects. There are many departments within an Organization vying for funds and SCM needs to build a robust alliance of end using departments to get the funds or ally with other transformation projects. Benefits related to risk mitigation of these projects cannot be ignored and can be used to overcome challenges in funding.

Organizations sometimes tend to have a very myopic view and they want results quickly. So, breaking the digital transformation project into phases and prioritizing low hanging fruits / smaller projects first thereby delivering immediate results might be the smarter way to go about the exercise.

Another practical challenge that needs to be overcome is legacy. If you are an organization, which is a hundred years old, you have different legacy systems for transactions. The question is, 'How do you make them interconnected?' One cannot suddenly throw out all the old systems and bring in a new one.

Organization structure is another challenge that needs to be overcome. Sometimes the SCM departments do not pay attention to their own internal organization structure. They are so focused in looking at other departments, that they ignore their own. This is easier said than done. When a department has functioned in a particular way for the last ten years, it becomes difficult to change. The old structure of having for example a country sourcing, regional sourcing or a global sourcing model may need to be relooked. Human beings by nature are creatures who love comfort and habits. For example, we love to sit at the same desk every day. The world is moving to a flexi desk or hoteling concept. So,

a robust change management becomes important.

Choosing the technology or the tool or the implementation partner, I believe is a simpler problem to resolve. What is critical though is being clear on the problem we are trying to solve. If at the end of all this digital transformation, you are improving the customer experience, then I think the effort and pain to go through this exercise is worth it. "Customer is King" an old saying



Murugan Pugalenti, Director- Global Planning Excellence, Johnson & Johnson

Change management is the most challenging problem we face in today's organization.

Digital transformation starts from data. 1. Organisations get the customer data from the from the Amazons and Flipkarts. 2. Then supply chain operation generates a lot of data- from suppliers, suppliers' suppliers, logistics partners, external manufacturing partners etc. 3. The data generated by the Employees through the information systems of your own organization- your ERP systems, legacy systems- you transact millions of records in a day. 4. Data generated by IoT- manufacturing lines, trucks, RFID, etc. Can we capture all of the data and use it for the betterment of the organization? All this data needs to be put to intelligent use. I have a simple analogy; we can eat simple bread or choose from the 150 odd varieties in a Sandwich shop. Your own bread is your own enterprise data, but it is not going to give you that much of value. A lot of companies in India are trying to do this but doing it globally makes much more sense. That is the kind of digital ecosystem especially in supply chain. The moment you build that data intelligence asset, you can do anything on it- planning, optimization, analytics platform, etc.

Now, what are the challenges? I will tell you two stories and cover the aspects:

- The first story is the Shark Syndrome. It is an experiment done by scientists where they kept a shark in a tank with many small fish. We all know that the shark eats the fish in no time. As the next step, they put a very strong and

under 35 years old. The availability of digital applications combined with customer expectations are making disruptions in every industry a reality. So, watch out, a 21-year-old founder of a startup might be disrupting your industry as we speak. Accept the challenge and digitally transform your organization.

transparent barricade, splitting the shark and the small fish. What the shark does is it keeps hitting the strong barricade. It keeps thinking it can reach the fish but fails multiple times. After months, they take out the barrier and put in a barrier made up of thin transparent film. But by this time, the shark thinks it cannot go through the barrier and never attempts to. The same way organizational barriers are man-made. There is little collaboration between departments because of the organizational barriers and this is a big challenge I face every day. This makes such programs very expensive. This is a big gap when you are getting into any big digital transformation project. Proving ROI of this sort of investment is also very difficult.

- This is a story about Guruji who teaches his students in a Gurukul. One day, when he came to the class, he found a cat playing around which was really distracting. He asked a student to tie the cat to a pole. The student obliged. This happened every day for years together. One day, the Guruji passed away and his follower took his place. The cat also passed away. The follower started the class and said, "I can't start this class without having a cat tied to this pole. Can you go get a cat from outside somewhere?" How do we make people realize that a certain thing is done for a specific purpose? Change management is the most challenging problem we face in today's organization, especially to a global audience.

WHAT. WHY. WHERE-HOUSE.

PIC COURTESY: INDOSPACE



Demand for efficient logistics space that facilitates quick movement of goods to consumers has necessitated the design of new warehouses that are larger in size and height. In order to meet the increasing demand for quality warehousing spaces, a recent CBRE analysis predicted that most of Grade B warehouses located in close proximity to leading cities would undergo redevelopments as per occupiers' specifications. This will provide dual benefits to both – developers who can gain from the rental increase and occupiers who will gain from the improved infrastructure. But how these new age warehouses are developed in accordance to 3Ss – Safety, Security and Sustainability; will be what drives the market share of developers in the country. Our experts in the space offer their expert insights into this very critical subject that needs attention from the developers, occupiers and policy makers alike...



RAVIRAJ RODRIGUES,
Director Supply Chain-India,
Alstom Transport India Ltd



ALVIS LAZARUS,
CEO, Hesol Consulting



JASMINE SINGH,
Nation Head- Industrial & Logistics
Services & Senior Executive Director
Advisory & Transactions Services, CBRE
South Asia Pvt. Ltd



ANSHUL SINGHAL,
Managing Director, Welspun One
Logistics Parks



RAJESH JAGGI,
Vice Chairman, Real Estate,
Everstone Group



ADITYA VIRWANI,
Spokesperson Embassy Industrial Parks
and COO Embassy Group



RAJAN EKAMBARAM,
Partner, Qwixpert

THE PERFORMANCE REPORT

The warehousing and logistics landscape is going through a paradigm shift and transformation in India. From an increasing number of policy incentives to tech-enhanced warehouses, the sector is now seeing a change in every aspect of its operation. The continued growth of the e-commerce sector in India is leading to increasing demand for effective supply chain systems. Recognizing the contribution of

this segment to the overall growth of the economy, the government aims at enacting several structural reforms to improve physical connectivity and infrastructure developments, thereby attracting investments.

Raviraj Rodrigues, Director Supply Chain-India, Alstom Transport India Ltd: The warehousing infrastructure creation in the country has seen a

steady increase in capacities and quality of infrastructure in the last 5 years, corresponding with the surge in online retail. The e-commerce companies were constantly looking at increasing scale and presence across the country and this brought about a need for large consolidated space. Also, the large e-commerce companies brought with them the need and technology for automatic/semi-automatic warehousing

processes. This also created the need for large Grade A warehouses with 10-12 m clear height, as the only way to optimize the fixed cost efficiently was to go vertical. This created opportunities for large players to step into the warehouse infrastructure creation, which was previously dominated by local real estate construction. The real fill-up has come since 2017, once the decks for GST implementation were cleared by the government. Almost all large manufacturing companies with national presence saw the benefits of consolidation, which meant bigger and better warehouses with more efficient lighting and power consumptions. Today, many of the warehouses in India are at par with global standards for warehousing. We are seeing a 20% y-o-y demand for warehousing infrastructure in the country and my estimate is that close to 200 million sqft of warehousing space will be added in the next 5 years.

Alvis Lazarus, CEO, Hesol Consulting: The Warehousing industry's progress is good for the past three years starting early 2017. Currently the y-o-y growth is between 15-21%. The initial boom is fueled by the e-commerce businesses. Typically, the fulfillment by the online players has direct impact on space requirement.

Jasmine Singh, Nation Head- Industrial & Logistics Services & Senior Executive Director Advisory & Transactions Services, CBRE South Asia Pvt. Ltd: As India's prominence as a global logistics hub grows, the segment is witnessing the entry of several global players and increasing awareness of domestic players to enhance the quality of offerings. This is resulting in the demand of warehousing that are in line with global standards. With the increasing demand, developers have also started focusing on large-scale developments in the logistics sector and are offering quality and technology compliant space to the occupiers. The increasing interests from foreign players has also led to opening-up of new avenues for various private equity firms and foreign players to seize the opportunity and invest in the development of high-quality assets.

Anshul Singhal, Managing Director,

Welspun One Logistics Parks: The last few years have seen a sea-change in the evolution of the 'warehouse'. From the erstwhile 'godown' that were basic storage facilities in marginal locations to sophisticated, compliant, large, efficient and strategically located storage solutions equipped to service the growing logistics demand for the country. Consistently the landscape is transforming into one with more organized players for whom compliance and quality is at the heart of developing effective warehouse infrastructure.

Rajesh Jaggi, Vice Chairman, Real Estate, Everstone Group: The warehousing sector is growing at a very rapid pace. According to a recent report by Savills, warehousing sector is expected to add 40 mn. sqft. space across top 8 cities this year. This indicates a growing demand and expansion of space allocated to our industry. Demand continues to be strong particularly in the warehousing segment specially for Grade A space. Top consumption and industrial centers such as Mumbai, Delhi-NCR, Pune, Bengaluru and Chennai, are expected to drive growth of the warehousing sector. In addition, tier II and tier III centers are emerging as warehousing destinations due to increased consumption and rise in e-commerce transactions. We feel the Indian warehousing market is still at an early stage in terms of its overall potential.

Aditya Virwani, spokesperson Embassy Industrial Parks and COO Embassy Group: The warehouse sector is on the path to becoming an integral part of the logistics matrix due to the swift advancement in technology and the reform-led policy measures. Dynamics like the growth in the manufacturing sector, rising consumer demand, a boost in international relations, the emergence of organized retail in the country, increasing private and international investments in infrastructure along with the dynamic growth in e-commerce is ought to maintain prosperity in the sector in the next few years.

Rajan Ekambaram, Partner, Qwixpert: The recent trends in the logistics landscape, the advent of e-commerce and the implementation

of GST have all transformed the warehousing market in India. Especially with GST, companies have either consolidated or in the process of reducing the number of small distributed warehousing setups in their network and move towards large warehouses in strategic locations across the country.

THE GROWING DEMAND FOR BUILT-TO-SUIT WAREHOUSES

For any built-to-suit warehouse, the companies must take a longer-term view and ensure meticulous planning before embarking on any investments, as one will have to live with the consequences if not planned well.

Raviraj Rodrigues: The large e-commerce companies saw efficiencies in managing the warehouses using technology. They came in with a clear plan for large and energy efficient warehouses, with clear height 10-12 meters at eaves. They saw this as the only way to optimize the fixed cost efficiently. Also, the fire safety requirements for such large warehouses were way higher than normal warehouses and called for Advanced Sprinkler Systems complying with NFPA13 guidelines. This has created a demand for Built to Suit warehouses across the country. While there will be some standardization for Grade A structures, it will still take time before we have uniform specifications for warehouse construction. The need to reduce CO2 emissions means that more and more organizations would prefer green solutions to lighting and power. This will create unique needs like solar panels for power generation, further mandating a BTS warehouse model. Finally, the product confidentiality and safety controls will be the uppermost on the minds of larger MNCs, necessitating the need for a separate warehouse infrastructure and not a common pool warehouse.

Alvis Lazarus: BTS warehouses contribute between 22-25%. BTS demand is specifically driven by organizations, which have green initiatives as part of their strategy and also organizations, which require customized warehouse design



(traditional warehouse won't suit their businesses); for example, B2C sorting and distribution warehouses. The only reason the BTS pie is small is TIME. Most organizations don't have a reliable space forecasting model or tool, thereby in many circumstances, warehouses are needed overnight and due to this shortage of time, BTS is often ignored.

Jasmine Singh: We anticipate that warehouse leasing is expected to rise going forward. This will largely be fueled by an anticipated rise in product sizes, continued demand from retailers, policy impetus to both sectors and higher demand from tier II cities. As the sector evolves, we believe that developers will move beyond meeting the demand and

supply, and will focus on understanding the occupiers needs, thereby offering modernization of supply chains, optimization of delivery networks and greater synergy between retail and logistics networks. With models such as built-to-suit (BTS), occupiers can specify the details in line with their needs, thereby allowing developers to implement their requirements on the back of financial security. With more ecommerce players wanting to own and operate their own facilities, it will result in more built-to-suit facilities, thereby taking off some "pure" leasing from the market. BTS warehouses come with a benefit of expediting the project's time frame and reduce the effort as well. Players are anticipating a boom in the

built-to-suit projects as it complies with needs of the developers and occupiers along with the market demands.

Anshul Singhal: The demand for built-to-suit warehouses has gone up over the years since the maturing market needs more bespoke solutions. This involves structural requirements to suit their operational needs. However, since Grade A warehouses with high quality PEB structures with associated specs like FM2/ high grade flooring already provide many of the requirements for BTS customers, the quantum of BTS modifications have become smaller. Even speculative Grade A buildings can meet almost 80% of the requirements of 'BTS' customers.

Rajesh Jaggi: Demand for built-to-suit warehouses is undoubtedly on a rise, owing to the full-fledged smooth customer experience that the facility provides. According to a recent JLL report, Built-to-Suit accounts for almost 40% of the warehousing absorption in 2019. These warehouses are automated and tech-led spaces with a key motive of fulfilling individual client requirements. These facilities are the need of the hour especially when we are living in a transformational phase of supply chains blurring the needs of retailers. We have observed a rising interest for built-to-suit warehouses for companies that want their facilities to be completely customized as per global specifications, including warehouses with refrigeration rooms, automation, etc.

Aditya Virwani: At EIP, we are constantly upgrading ourselves and knowing the business requirement, we ensure our parks are enhanced technologically. Today built-to-suit warehouses are evidently larger compared to the standard warehouse to about 60—70%. We can proudly say that built-to-suit warehouses offered by Embassy Industrial Parks have helped our clients largely because every business comes with their specific requirements and our effort is to cater to their needs efficiently. We ensure we meet the need of our clients and give them exactly what they need so that they can focus on their business. We provide built-to-suit industrial and logistics parks where clients can have up

to 2X expandability.

Rajan Ekambaram: The extent of economic efficiencies demanded by present-day businesses coupled with increasing customer expectations on the delivery speed (mainly influenced by e-commerce), have made warehousing operations extremely important for organizations. Companies are often looking at automation to cope with these circumstances. However, most of the standard warehousing infrastructures available in the market today, across cities, do not meet some of these specific requirements. So, companies are going for built-to-suit warehouses in selected locations, of a particular size and infrastructure to meet their business needs. However, there are only a handful of such cases across industries and standard warehousing will suffice a high percentage of needs. In a nutshell, I wouldn't say there is a massive requirement for built-to-suit warehouses in India; however, there is undoubtedly an uptick, and it is bound to increase as the economy improves.

BUILDING NEW AGE WAREHOUSE

A few of the essential prerequisites that go into building a modern warehouse are land banks at suitable locations, financial investments to fulfill the capital requirements, quality infrastructure, sustainable design and layout with focus on increasing logistics efficiency, tech-enabled machinery development partners and a skilled workforce that is the backbone of any industry to meet the set objective.

Jasmine Singh: With India evolving as one of the largest consumption markets, it is imperative for regional supply chain operators as well as industrial and logistics landlords to future-proof their assets in preparation for this new era. Besides cost, speed, reliability and connectivity, modern supply chain model has resilience, sustainability and agility to attain long-term continuity and growth. Rise in diverse needs of supply and logistics, warehouses now play a crucial role and require efficient planning streamlined with its flexibility and functionality like never before. Through modern warehousing, with strategic planning of pre-empting all warehouse requirements needed at all

stages considering all the critical factors, developers can implement effective usage of space management.

Anshul Singhal: The modern warehouse is a concept that has filtered down from the more developed economies into India. Principally the prerequisites include 100% compliance to government norms and regulations, specifications that align with Indian and global standards, safety and security measures that ensure that manpower and goods are out of harm's way and where throughput is efficient and time sensitive. These pre-requisites mandate the entire planning and design process of the Warehouse: Secure developments, a high degree of traffic planning for peak traffic scenarios, design measures for large transport, effective docking measures, provision of optimal storage heights, structural integrity, buildings designed to withstand fire risks, FM2/ high grade flooring, amongst others.

Rajesh Jaggi: Warehouses have transformed to modern facilities with advanced, real-time tracking mechanisms, and other tech-led advances that could ease the processes for both the supplier as well as the client. A few of the essential prerequisites that go into building a modern warehouse are undoubtedly – land bank at suitable locations, financial investments to fulfill the capital requirements, quality infrastructure, sustainable design and layout with focus on increasing logistics efficiency, tech-enabled machinery development partners and a skilled workforce that is the backbone of any industry to meet the set objective.

Aditya Virwani: The growth of e-commerce as a mode of purchase by the consumer across the country has caused a revolution and caused a positive influence on the warehousing business. India is enduring a massive development and demographic transformation igniting a huge wave of consumer demand over the next decade. "Next Generation" warehousing and logistics solution brings an effective solution to the problem. This has been possible for us by being an efficient and fully compliant warehouse management system that helps align their client's pathway towards success.

A modern Grade A warehouse has to be well-positioned and connected closely with the cities. This makes business convenient and benefits our end users.

Rajan Ekambaram: It is essential to understand the role of the warehouse in the supply chain and establish a design basis for the time horizon. The design basis must be in terms of SKU profiles, storage, throughput, order profile, value-added services, packaging, returns, etc., that the warehouse will handle. The design basis and land availability will determine the material handling systems, automation needs, processes and technologies that will be required to design and run the warehouse efficiently. Also, safety is one of the crucial elements most warehouse designs do not consider. It is imperative to build-in engineering controls to ensure a safe working environment for people inside the facility.

Alongside, companies need to fix the overall supply chain and distribution strategy for the foreseeable future. Their distribution strategy will broadly define the warehousing needs to be met – in terms of customers to service, throughput to deliver, inventory levels, value-added services and any other special requirements. Modern warehouses should meet this specific requirement. The level of automation will vary depending on complexity. Imagine a warehouse that has to process 5,000 orders/day, 40,000 order-lines /day with 1 lacs SKU in their portfolio with a warehouse that has to process 200 orders, 3,500 order-lines, 1,500 SKUs in their portfolio – the design, technology deployment and construction will be drastically different.

Raviraj Rodrigues: To have the capability to understand our business model and design warehouses with minimal waste of surface area, optimal LXB ratio (2:1 preferred), developers need to have the capability to build warehouses with minimum height of 10 meters. For yet to construct warehouses, the warehouse should be ready for fit-outs within 12 months from signing the agreement and they should plan for technology enhancements like cable provisions for wireless routers, cameras and they should have the capability to install the latest Fire-safety systems.

The material throughput measured

A smart warehouse is essentially made up of several interconnected technologies all used to run the warehouse more effectively. This ranges from using Robots, RFID, IOT or AI. Occupiers like Amazon or Alibaba in China are using these to substantially reduce time and costs towards delivery.

in terms of CBM unloaded and loaded will define the space requirements, the product handled will define the load bearing capacity of the floor, the vertical height will determine the height of the warehouse, the lighting and power determine the Roof Load Capacity and design, the temperature control will determine the insulation, the Green initiatives will drive the transparent panels on the roof and walls and the Operations staff will determine the provision for Fire safety, Comfort, Utilities and waste management designs.

Alvis Lazarus: I would answer this question taking one step back. In Lean terms, storage is a waste. So, the step 1 is, in the overall supply chain strategy, the decision to have a warehouse is to be validated. This is the prerequisite #1 which is mostly ignored. Then, the industry specific standards are to be read through and be converted to design terms. In most projects, the management team discusses this after leasing the warehouse, which is like jumping into sea and then learning to swim. The standards vary by industry and so does the design, this has to be documented well. Based on business forecast, a quick network planning has to be done and a decision on the inventory has to be finalized through a policy. Basis this, a space planning model is completed. Lastly, consolidate the network plan, standards, space and design rules in a single requirement document and then the search of location / warehouse starts from there.

Basis the study, there are so many factors, which demand attention from the developers and occupiers alike:

- Safety, Compliance & Standards
 - Aligning with all the standards relevant to that industry is a key factor.
- An efficient space planning model is

the most crucial aspect.

- Thorough documentation of process flow, touch points and value adding activities; Value stream map is the opt tool for this.
- Process Time – Balancing process time at each activity is crucial to have seamless warehouse operations. Once these basics are in place, automation comes into play.

BEING TECH-ENABLED

The cost competitiveness of tech products coupled with an increase in scale and a need to run efficient operations for businesses makes a good case for higher technology adoption in the future. There are several warehousing technologies available in the marketplace and basic ones which form the backbone for running warehouse operations are affordable with high ROI today.

Raviraj Rodrigues: We, at Alstom, have deployed technology in every part of the warehouse design and operations. We have deployed semi-automatic doors for truck receiving. We have standardized our dock heights and provided dock-levelers at receipt. We have direct transfer from trucks to receiving bay on guided rails. We have WMS based receipt, put-away and picking. Our warehouses are turning green with transparent panels for ambient lighting, solar panels to support the warehouse power needs, electric MHE to reduce air pollution in the warehouse and we have deployed NFPA13 rated Fire Sprinklers in-rack sprinklers being installed in our new warehouses.

Jasmine Singh: The Indian warehousing sector has seen an exponential growth with respect to quality and investment over the years. Emerging trends and technology in past few years have demanded this sector to move towards a smart and sustainable quality space.

The increased use of IoT, big data, robotics, automation and over the course of time, blockchain, will lead to the country eventually adopting 4PL processes of an entity's entire supply chain, giving leeway for the country to even adopt 5PL processes in the foreseeable future. Using technology in all stages of planning and managing operations has increased the efficiency in this sector leading to a better supply chain management. Being acquainted with automation and robotics, Indian warehousing sector is matching/keeping up with the global canons of warehousing. Through years, technology and positive government policies have been a constant development in this sector which now reflects in the warehousing industry. India's industry leaders/players have anticipated growth from the year 2020 in terms of building warehouses with best in class infrastructure.

Rajesh Jaggi: We have been recognized as the pioneers in the industry due to various reasons, one of them being our adaptability to the dynamic environment. The way warehouses are addressed today is drastically different from how they were 10 years back. A dramatic shift from obsolete godowns to modern tech-enabled warehouses, the industry has come a long way. With the rise in e-commerce across various sectors such as food and beverage, pharmaceuticals, electronics, etc., the demand for dynamic warehouses catering to specific client needs have increased. With our expertise, we have the capability to provide ultra-modern built-to-suit projects or ready spaces based on the requirement of the client.

Aditya Virwani: Technology creates strategic opportunities for organizations to build competitive advantages in various functional areas of management

including logistics and supply chain management. However, the degree of success depends on the selection of the right technology for the application, availability of proper organizational infrastructure, culture and management policies. New technology concepts like fast track technology, PEB, precast and sustainable technology are few innovations leveraged by our facilities. Our tenant base is quite advanced in technological adaptations. At this point, two of our e-commerce clients at various locations are in the process of automation through technology i.e. robots for rack movement, infra-red sensing of racks, etc. This has been possible due to the impeccable design that we stick to while developing the warehouse as well as the infrastructure that we provide which is paralleled to none.

Rajan Ekambaram: There are several warehousing technologies available in the marketplace and basic ones which form the backbone for running warehouse operations are affordable with high ROI today. For example, WMS (warehouse management system) and pallet level barcoding & RF scanning technology are widely used in India today. I would be surprised if companies with reasonable scale have not moved away from the paper-based to a system-driven operation. Now, advanced technologies such as ASRS, conveyors, pick by light, sorters, etc., will be required in specific cases. However, in the last 5-8 years, the adoption rate has considerably improved due to increasing volumes, efficiency requirements, and operating cost. We have also seen a lot of start-ups in this field, and international companies are not just setting up

offices but manufacturing in India. With the increase in competition and Make-in-India drive, the cost of such technologies is bound to come down. The cost competitiveness of tech products coupled with an increase in scale and a need to run efficient operations for businesses makes a good case for higher technology adoption in the future.

Alvis Lazarus: I feel it is other way around – demand changes the face of new age warehousing and not the technology. Else why have we waited for years to implement a technology like barcode which has been around for decades? So, the demand comes from the customer in terms of volumes, service and expectations. Volumes drive growth, service and expectations drive more and more new tech requirement in the warehousing space.

Demand for built-to-suit warehouses is undoubtedly on a rise, owing to the full-fledged smooth customer experience that the facility provides. According to a recent JLL report, Built-to-Suit accounts for almost 40% of the warehousing absorption in 2019.



PIC COURTESY: EMBASSY INDUSTRIAL PARKS

RUNNING A LARGE MODERN WAREHOUSE EFFICIENTLY

With the advent of technology and e-commerce in India, the size of warehouses has naturally increased. It has pushed not only developers to look beyond the basic floor plan, but also to consider the levels across which the company operates. Demand for efficient logistics space that facilitates quick movement of goods to consumers have necessitated design of new warehouses that are larger in size and height, thereby driving the need for more modern warehouses in the country.

Alvis Lazarus: No matter how good the technology is that you have, without the following things, it is difficult to run efficient operations:

- **Real time data monitoring** – Tons of tools are available; Most burn their fingers by directly jumping onto more sophisticated software. In my opinion, the basic tools work better and it is good enough.
- **SMART Goals and accountability** – Tools like Hoshin Kanri are used to align the operational targets at each level with the organizational strategy. This alignment is very important for efficient running of the warehouse.
- **Process controls and measurement** – Leveraging the real time data, leading process indicators are important. When I say leading indicators, defect monitoring is a lagging indicator, but a leading indicator would trigger an alert before a defect occurs.

Rajan Ekambaram: For a large modern warehouse to run efficiently, it is essential to plan the intra-logistics efficiently. We have seen several cases where companies are not able to improve warehouse performance or in some instances, even meet the throughput requirements because

of poor design, infrastructure and processes. The lack of planning leads not only to increased cost of operations but poor service to customers and sales loss. So, it is critical to get the warehouse planning right first for a large modern warehouse to run efficiently.

Most companies outsource their warehousing operations, which is the way to go if it's not their core business activity. However, it is crucial to select the right 3rd party logistics provider who understands your requirements to run the warehouse. You can count on one hand, the number of such companies in India today who can run large modern warehouses efficiently. In most cases, companies end up spending a lot of mid-management time in running the day to day along with the 3PL, and you would seldom come across examples where clearly defined service levels are enough to manage a 3PL.

For 3PLs, it is vital to set up programs and training at various levels in their organization on how to run efficient warehousing operations. The needs will vary depending on the industry – the processes in a retail warehouse will be vastly different from those in the automotive aftermarket. Running efficient warehousing operations is not about hiring hands & legs and deploying them in the warehouse to pick or operate an MHE, there should be structured training, skill enhancement and continuous improvement programs to improve overall efficiency.

Aditya Virwani: The warehouse is the key component that impacts the entire value chain, starting from raw material to customer satisfaction. Embassy Industrial Parks intends to help companies and businesses by building and managing quality Grade A industrial, light manufacturing and warehousing

spaces all over the country. This helps the business focus on the trade and not on other dependent factors for growth. Embassy Industrial Parks are built with a commitment to offering a superior experience. We take into consideration factors like strategic land positioning that make business more convenient. We keep an eye on attention to detail and provide globally approved amenities like rest areas for drivers, dormitories, round the clock canteen, first aid centers, 24/7 security coverage an excellent fire-fighting systems, ample parking space for trucks so the flow of the traffic remains unaffected and doesn't hamper workflow.

Jasmine Singh: As consumer preferences have evolved and the need for faster service has grown, demand for last-mile real estate has spiked. Developers are focusing on experimenting with formats and developing last-mile facilities closer to a highly urbanized and dense population centers, thereby allowing companies to cater to faster deliveries. As companies strive for synergy between last mile logistics and brick & mortar stores, the growth of omnichannel retail will continue to drive additional warehouse demand. Urban distribution networks will need to be optimized for last-mile delivery to enhance delivery speed. A key demand theme for the coming year will be the focus on fresh produce/groceries delivery. As the sector witnesses increased traction, we expect players to display interest in cold chain facilities and temperature-controlled warehouses. In order to meet the increasing demand for quality warehousing spaces, most of the Grade B warehouses located in close proximity to leading cities would undergo redevelopments as per occupier specifications. This will provide dual benefits to both: developers who can gain from the rental increase and occupiers who will gain from the improved infrastructure.

Rajesh Jaggi: Grade A warehouses are infrastructurally better equipped than the other types due to efficient material handling, enormous amount of space along with access to latest technology. They have ample clear heights, optimized column spacing, flat and super-flat floors designed to support high cube racking, high dock-

door ratios and extensive concrete truck courts. These warehouses allow abundant creativity in laying out the plant & equipment and they also provide for easier movement within the buildings resulting in optimized turn-around time and lower logistics cost.

TRENDS & BEYOND

The new age warehouse demands strategic implementations, right from floor load, truck movement, loading/unloading to safety measures, technology will play a crucial role in this sector which will enable a modern and dedicated technical solutions for the consumers. Increasing funds of national-international players, improved retail and growing consumption e-commerce has led to developers invest in better technological counterparts to deliver quality. New age automated warehouses will ease the supply chains, increasing accuracy and efficiency.

Jasmine Singh: The warehousing sector has become more transparent and organized over the years, industry leaders are anticipating that the warehousing sector will enable global level specifications, workmanship and facilities, which are essential for maintaining and delivering quality. Coming years will see an incremental growth in the multinational investments and technological advancements in the warehousing sector, which will improve the automation of the warehouse. The positive government policies will help strengthen the warehousing sector by improving land cost and simplifying the clearance processes. Year 2020 in stores e-commerce as one of the major demand accelerators along with boost in international relations and investments will make the warehousing sector expand beyond limits.

Anshul Singhal: A smart warehouse is essentially made up of several interconnected technologies all used to run the warehouse more effectively. This ranges from using Robots, RFID, IOT or AI. Occupiers like Amazon or Alibaba in China are using these to substantially reduce time and costs towards delivery. We, in India, are at the cusp of adopting these smart warehousing measures. With increased consumption growth, demand for lower delivery times and higher labor costs, this trend will find itself, in time, here too. As a developer though and not an

occupier, we are looking at solutions that would help our occupiers in their need for safe, secure and efficiently run facilities that could mark down operation costs and are exploring the use of IOT to understand how this value add is possible.

Raviraj Rodrigues: Supply Chain 4.0 brings with it latest technologies that will get deployed in most warehouses. Specifically IOT based tracking a micro-site level will be deployed across most large warehouses, warehouses will go green and will need to be CO2 neutral through better use of ambient lighting, use of renewable energy solutions, use of robotics for put-away, pick and pack.

Alvis Lazarus: Last decade, WMS with barcode enabled operations stole the show and the future trends are going to be fully automated warehouses, paperless picking (voice picking) and AI / IoT enabled handling systems.

Rajesh Jaggi: The upcoming trends anticipated in the country are as follows:

- **Warehousing spaces in tier-II and tier-III regions:** As the e-commerce industry is expanding in the tier-II and tier-III regions of the country, the demand for warehousing spaces is also at a rise. Hence, an increase in expansion of facilities is to be observed.
- **Services to micro-markets owing to affordable rental fee:** Cost-conscious occupiers tend to set up shop in micro-markets of various regions owing to their strategic locations and affordable rent.
- **Focus on green warehouses:** We are witnessing a focus towards 'Green Warehouses' and integration of sustainable warehouse designs.

Aditya Virwani: A few patterns we shall observe in the business in the next coming years are the usage of the Internet in the country, which is bound to grow in the next 5 years. E-commerce accessibility will expand and reach more cities. In order to meet the demand of the market, the logistics and warehousing sector will also have to be organized & efficient and strategic positioning of the parks would be crucial.

The involvement and interests of global investors and developers

demand quality control and best in class offering. Therefore, the benchmark for warehousing developments in the country will be higher and we will experience a change in industry dynamics. Outsourcing of the logistics activity is the next practical stage of progress for most sectors as taxes have been restructured across the country and the Input Tax Credit is now open to be availed across product and service lines. Industrial and warehousing sector will undergo a key evolutionary leap in the next 5-8 years. We will witness substantial warehouse consolidation by companies in the B2C segment in a few years and we will positively see the upgrade in the offering by the large modern technology-based warehousing operations with effective productivity and the rapid conversion of unorganized godowns to modern logistics and industrial parks.

The warehousing sector is gaining maturity, even smaller and upcoming developers have started providing quality specifications and infrastructure as a standard offering. The benchmark of warehousing space has moved up and has been established. Consolidation will also be common amongst players, where smaller local developers and property owners will sell out to the larger institutional developers in the existing clusters.

Rajan Ekambaram: First, the consumption and therefore, demand for companies and investment climate must pick up in the country. That aside, we will see two kinds of trends in the country as far as warehousing is concerned. One, as we mentioned earlier, build-to-suit automated warehouses as per the needs of the company, mostly within or near factory locations in case of manufacturing firms and large FCs in case of e-commerce firms. Two, logistics parks and multiuser facilities with a vertical height of 10-12m and a minimum of 1 lakh sqft. Such warehouses are flexible and can be offered to companies across industries.

The warehousing sector has become more transparent and organized over the years, industry leaders are anticipating that the warehousing sector will enable global level specifications, workmanship and facilities, which are essential for maintaining and delivering quality.

Smartly SUSTAINABLE

“We manage energy consumption & increase sustainability through EcoStruxure™ Power Deployment. We improve efficiency and security of logistics operations through automation control and IIoT solutions. As part of this program to have optimized supply chain, we have full visibility of our customer value chain, increased end-to-end throughput, and reduced logistics waste,” quips **Javed Ahmad, Senior Vice President – Global Supply Chain, Schneider Electric India, during an exclusive interview...**

What are the advantages of Schneider Electric's Distribution Center? How is it going to impact the overall efficiency?

Distribution Centres (DC) are expected to accommodate a shorter, faster supply chain by supporting shortened product life cycles, and to move products as quickly as possible, so much so that DCs now are also known as “throughput centres.” They are increasingly expected to offer critical supply chain capabilities such as omni-channel capabilities, reverse logistics, return handling, and value-added services ranging from product assembly to product labelling, repacking, and repair.

The Smart DC Program, together with the Smart Factory Program, is central to Schneider Electric's Tailored Sustainable Connected (TSC) 4.0 supply chain strategy. Schneider Electric Smart DCs deploy EcoStruxure solutions to drive end-to-end efficiency for industrial environment and sustainability in the logistics and warehousing environment.

By digitizing the Smart DC with EcoStruxure™ technologies, Schneider Electric aims to achieve increased efficiency across all layers of its operations, with the following key benefits:

- Agile management & process efficiency** – driving faster and better decisions from the teams to improve customer satisfaction and faster service. Deliver targeted outcomes by – Simplification of shop-floor management across 100+ sites by 2020. Deliver ROI in 2 years thanks to agility and efficiency.
- Asset performance management** – predictive analytics for reduced downtime and more efficient operations through real-time analytics, ML implementation, increased asset control, availability and reliability. Targeted outcomes – lower cost, higher productivity, ROI in 6 months on IIoT powered connected assets (IIoT Edge Box).
- Empowered operators** – access to real-time assets and process information, reduced time to repair, process efficiency and reliability.
- Energy efficiency & reliability** – reduced energy consumption and improved power monitoring through real-time insights delivered by EcoStruxure Resource Advisor and



Javed Ahmad has 27 years of international experience in the electrical and electronics manufacturing industry. A thought leader and expert, he has spent a significant time of his career in managing end to end supply chain, transformation and managing complex operations across the globe. Javed started his career as a Supply Chain and Logistics Manager in APC by Schneider Electric, and has moved through roles in India and globally to his current position. He has established 11 global factories, 8 DCs with 3000 employees catering to the need of customers all over the world.

Javed has a Bachelor's in Engineering from Aligarh Muslim University, an MBA from the University of Rhode Island and has done an Advance Leadership programme from Harvard Business School.

connected meters & Power Tag wireless energy sensors, which has shown potential energy savings of up to 30%.

What was the intent behind this launch?

Digital transformation is emerging as a driver of sweeping change in the world around us. Connectivity has shown the potential to empower millions of people, while providing businesses with unparalleled opportunities for value creation and capture. The digitization of the supply chain is perusing companies and organisations to address the new requirements of the customers, the challenges on the supply side as well as the remaining expectations in efficiency improvement. Digitization brings about a Supply Chain 4.0 which is faster, flexible, accurate and more efficient. This is what led to the launch of Schneider Electric's first Smart DC in India. The Mumbai site demonstrates exactly how digital transformation can be successfully achieved when applied in the logistics environment. We are excited to open this facility as a showcase in the region.

Please share with us your green logistics strategy and how does this launch fit in the scheme of things?

From source to customer, we improve sustainability, efficiency and security of logistics operations. Our green supply chain strategy includes:

- Reach its COP21 goal of carbon neutrality in its expanded ecosystem, by delivering more CO2 savings to its customers than its carbon footprint. Be carbon neutral in its operations by offsetting remaining emissions no later than 2025
- Achieve net-zero operational emissions and reduce scope 3 emissions by 35% by 2030 (vs 2017) as part of its validated 1.5°C SBT target
- Engage with suppliers towards a net-zero supply chain by 2050.

To that aim, Schneider will notably:

- Switch to 100% renewable electricity by 2030
- Double its energy productivity by 2030 against a 2005 baseline
- Deliver CO2 savings to the customers with EcoStruxure™ and quantify these CO2 emissions savings. The Group's target is to enable its customers to save 120 million tons of CO2 from 2018 to 2020 (3-year cumulative).

Through this launch, we are leveraging Schneider Electric's EcoStruxure™ solutions and showcasing these in our DCs. We manage energy consumption & increase sustainability through EcoStruxure™ Power Deployment. We improve sustainability, efficiency and security of logistics operations through automation control and IIoT solutions in our material handling systems. As part of this program to have optimized supply chain we have full visibility to our customer value chain, increased end-to-end throughput, and reduced logistics waste.

What are your views on enhancing sustainability in supply chain?

Schneider Electric is the leader in digital transformation of energy management and automation, and has been recently given two significant environment & ethical indicator rankings at World Economic Forum, Davos. It includes a top place among the Global 100 Most Sustainable Corporations ranking of Clean Capitalism magazine Corporate Knights for the seventh year running,

and a place on the Carbon Disclosure Project (CDP) “A-List” for the ninth consecutive year. The CDP's disclosure and scoring process is seen as the gold standard of corporate environmental transparency, and the go-to source of sustainability information for customers and investors. Schneider Electric was recognized for its actions to cut emissions, mitigating climate risks and contributing to the development of a low-carbon economy.

Our supply chain sustainable ambitions for 2020 includes:

- Clean & Safe – 100% applicable sites with ISO 14001 and ISO 50001 certifications. 100% roll out of EHS site assessments. Best available techniques for new products.
- Carbon Light & Digital – 80% electricity from Renewables. 100%

sites save MWh, 10% CO2 efficiency in transportation.

- Resource Efficient & Digital – 95% waste recovery rate. 200 sites on way to zero waste to landfill. 100% cardboards and pallets for transport packing from recycled or certified sources.

In the words of our CEO, “When it comes to climate change, I'm neither an optimist nor a pessimist. I'm an Activist.”

What are the prerequisites based on which you select a 3PL?

Our partners are our strength. We have a strong process in engaging with our 3PLs. The first level of prerequisites for choosing the right partner are:

- Market position — Operational reputation and technology expertise



A recent IDC FutureScape – Worldwide Manufacturing report reveals that one-third of all manufacturing supply chains will use analytics-driven cognitive capabilities by 2020. It also states that by 2021, 20% of G2000 manufacturers will rely on embedded intelligence, using advanced technologies. This means coping with new cost structures, compliance measures, and supplier capabilities. At the same time, it also means re-orienting internal processes to manage faster turnarounds and drive in efficiencies.



The Smart Distribution Center Program, together with the Smart Factory Program, is central to Schneider Electric's Tailored Sustainable Connected (TSC) 4.0 supply chain strategy. Schneider Electric Smart Distribution Centre (DC) deploys EcoStruxure™ solutions to drive end-to-end efficiency for industrial environment and sustainability in the logistics and warehousing environment. By digitizing the Smart Distribution Center with EcoStruxure™ technologies, Schneider Electric aims to achieve increased efficiency across all layers of its operations.

- Financial risk – Financial assessment
- Business – Contingency plan and Certifications
- Commercial – Pricing, SLAs and account management.

We have the same set of expectations and standards from our partners aligned to our standard global processes. In alignment with that the second level of prerequisites which are equally important to us is the 3PL approach, focus and engagement on

- Safety
- Environment sustainability
- Quality
- Customer centricity

We believe that great people and partners make Schneider a great company.

What are the complexities that arise in managing supply chain? How do you manage that?

Some of the top Supply Chain management challenges for manufacturing companies are impacting both productivity and customer experience. They are:

GLOBALIZATION: Globalization presents several challenges to supply chains. Companies often have manufacturing

operations in countries that offer lower taxes, labour costs, and transportation charges. They also have suppliers worldwide. As a result, SCM has become extremely complex. Supply chain professionals need real-time visibility into the supply chain operation to ensure manufacturing processes remain efficient. When companies sell their products globally, they must adapt to different cultures and preferences. Supply chains also need to change accordingly to ensure efficient order fulfilment.

LACK OF VISIBILITY: The lack of visibility across dependencies in the supply chain is also a challenge for managers in the current global environment. Managers often don't know where various parts for manufacturing of a product are coming from, which means they are unable to determine their true supply chain, undermining supply chain optimization.

TECHNOLOGICAL ADVANCEMENTS: As per the IDC FutureScape – Worldwide Manufacturing report, one-third of all manufacturing supply chains will use analytics-driven cognitive capabilities by 2020. It also states that by 2021, 20% of G2000 manufacturers will

rely on embedded intelligence, using advanced technologies. This means coping with new cost structures, compliance measures, and supplier capabilities. At the same time, it also means re-orienting internal processes to manage faster turnarounds and drive in efficiencies.

Our Smart DC Program serves as a model for other logistics and warehousing players in India to build intelligent distribution networks and further pave the way for the region's logistics industry to become more sustainable and efficient.

How do you foresee the logistical landscape of the country?

Over the last thirty years, logistics has undergone a tremendous change: from a purely operational function that reported to sales or manufacturing, to an independent supply chain management function.

India's aspiration to become a global manufacturing powerhouse and the government's spotlight on 'Make in India' has also made a strong case for nationwide reform of supply chain, thereby prompting several federal and state-based schemes and investment incentives. In the last three years, India's supply chain sector has seen an influx of capital, both foreign and domestic. Firms like Future Supply Solutions have raised almost US\$2 billion (₹130 billion) in investments from domestic and foreign channels.

Following GST implementation, the I&L sector became far more transparent and occupiers were able to reap the benefits of a single tax regime: Almost 70% of occupiers were optimistic about the impact of GST on supply chain / warehousing business and about 80% of our respondents felt that the taxation system has improved after the implementation of the GST.





Sustainability for **SUSTENANCE**

Today we are living in an era where sustainability is just not a mere 'feel good factor or a great CSR tool', it has today become the most important aspect of sustenance. Companies which understand this sooner, will reap long term tangible benefits and gain the first-mover's advantage, while those who still can't get out of their age-old practices will have to face the consequences. The good news is that new-age companies are quick to take cues on eco-awareness and have come all out in implementing sustainability practices in their respective organizations and are inspiring others to follow suit. Here's an insightful version of early adopters and how they are leading the pack...

***Ketan Kulkarni, CMO & Head - Business Development,
Blue Dart Express Ltd.***

Building and managing supply chain operations is a key factor for business success in India. For a company to pursue sustainability, it is critical to link environmental, social, and financial goals within a broader strategy. Companies have become conscious regarding their environmental and societal impact. Organizations are actively taking responsibility and adapting their methods to meet emission norms to have a positive impact on changing weather patterns, their workforce, local communities and the environment. As stakeholders become more aware and conscious, sustainable supply chain operations will, in fact, become an integral part of the strategy. There is a conscious need for organizations to take note of their emissions and work towards reducing them out of true concern for the planet's health and resources. The government has also introduced policies and norms that support us in working towards this. It is important for companies to begin viewing sustainable practices to achieve efficiency which increase profitability. Sustainable practices are no longer seen as a positive aspect but a necessity to continue as a successful entity.

Blue Dart is committed to improving its environmental impact through various measures and the use of environment friendly technology. We firmly believe that the social and environmental performance of a company is as vital as its financial and operational performance. As part of the DPDHL group Blue Dart has a focused approach to this with its carbon reduction program, the target was to hit 30% carbon reduction by 2020 over the 2007 base, we are on track. As a strategic imperative the group is also committed to becoming a zero-emission company by 2050."



Raghavendra Rao, Logistics Team Lead, Kohler Kitchen & Bath India

There are many opportunities that are waiting to unfold for us as industry leaders in the supply chain to leverage and lead our companies towards greener pastures. Some of them are:

Optimize Network: Strategically supply chain network footprint determines how efficiently product flow is managed, from suppliers' suppliers to our customers' customers. Hence there can be opportunities identified through periodic review of Supplier → Manufacturing → Distribution Centre → Fulfilment Centre → Customer network to optimize material flows, which will potentially yield benefits by reduction in freight & carbon footprint overall.

Electric Fleet for Last Mile: Last mile delivery is a significant element of cost as well as fuel consumption in the value chain. With favorable developments across government policies, improvements in charging ecosystem, last mile delivery can now migrate to Electric Vehicle/Fleet. While the range anxiety and load capacity remain to be the areas of attention, EV adoption in pilot mode in limited geographies will be a good start.

Up-size dispatches by order consolidation & route optimization: Most of the B2C transactions are expected to be serviced by next day delivery. However, it is worthwhile to leverage consolidation opportunities and up-size dispatches. One of the ways to achieve this is to quantify the environmental impact for every shipment chosen for rush delivery. This can go a long way in sensitizing customers to make sustainable shipping choices.

Leverage E-Invoicing & E-Way Bill: Warehouse usually generates a large amount of paper waste through print of documents like picklists, invoices, waybills, etc.

With E-Way Bill & E-invoicing (announced to be in effect from 1st April '2020), most of these transactions from warehouses should preferably move to paperless.

Natural Lighting, Insulation Technology: Electricity is one of the critical resources in automated warehouses for material handling requirements. At the same time, modern warehouses enable provisions for natural lighting and specialized insulation to keep temperatures inside the facility controlled even in extreme weather conditions. These steps will keep electricity consumption in control, thereby helping operations to be sustainable.



Bipin Odhekar, Head - Sustainability & Operations Excellence, Marico Ltd

Sustainability is no more a 'nice to have' strategy for businesses. As the world is becoming a global marketplace, all geographies are getting connected and no one can remain isolated. Therefore, any positive or negative impact in supply chain will get prominent attention by all. As we all know, resource optimization is the key challenge for supply chain, all resources like raw materials, packing materials, fuels, etc., are produced by earth with periodic cycle of regeneration. Current industrial revolution and its consumption rate is higher than the Earth's ecological footprint. World is realizing this true fact as it is witnessing the environmental surprises like fire, tsunamis and floods, etc. Slowly progressing communities in sustainability space have alarmed about these changes and a formal recognition of the change came through a political alignment called "Paris agreement". Efforts have started from all dimensions to reduce ill effects on this Earth and supply chain is going to play the most critical role in it. Supply chain teams across all businesses have a great potential to collaborate and develop sustainable business practices all over and make this earth a better place to live.



Mihir Parekh, Vice President & Head - BubbleGUARD, Nilkamal Ltd

In the new world of same-day delivery, a single global market with international shipping contrasted by hyperlocal logistics, supply chains have never been as efficient as they are today. However, transportation and packaging used in this new world are some of the largest contributors to greenhouse gases, paper and plastic waste. Two big shifts we have seen in the market to address this has been the preference of locally manufactured and sourced products – cutting down transportation and imports. The next trend is to eliminate all single use packaging – opting instead for reusable, returnable and recyclable materials.

Single-use plastic has been widely discussed but a bigger issue is single-use paper packaging which is used by most companies. The

packaging is susceptible to tearing and humidity resulting in damaged contents. It is also a huge waste of resources because carton boxes need large amounts of trees and water to produce. MNCs have become frontrunners in this aspect – by switching wooden for plastic pallets, paper for plastic cartons and replacing single use film packaging with multi-use plastic wraps. Reusable packaging results in huge long-term savings and a much lower carbon footprint. Western countries have already enforced legislations to make this change and companies in India should start acting proactively before they are blindsided by a change in laws. These sustainable practices not only ensure sustainability of the environment but also long-term sustainability of the business.



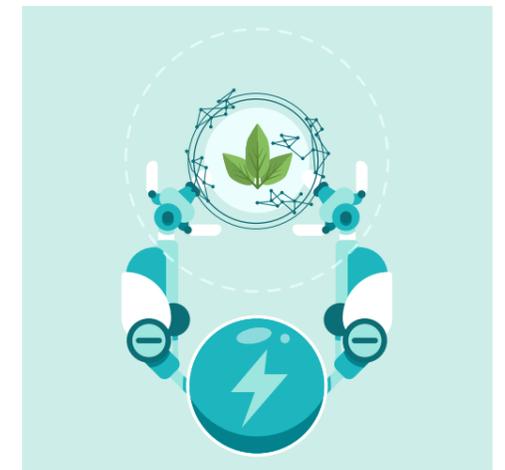
Prof. Seema Unnikrishnan, Professor and Programme Coordinator of the Post graduate programme in Industrial Safety and Environmental Management, NITIE

Indian Industry is moving towards sustainability in supply chain as it is essential for their existence. Working with suppliers to improve sustainability can help companies conserve natural resources and reduce carbon emissions. Industries are integrating sustainability from the Product Design stage to manufacturing to distribution to recovery processes at the end of life.

One of the ways to manage sustainability in supply chain is by measuring the carbon footprint of the major aspects of supply chain.

Carbon Footprint is defined as the total greenhouse gas emissions caused directly and indirectly by an individual, organization, event or product. More and more companies are carrying out the carbon footprint of Scope 1, Scope 2, Scope 3 emissions. They are realizing that Scope 3 emissions are the maximum and many times, it is due to the supply chain: all indirect emissions that occur in the value chain of the reporting company, including both upstream and downstream emissions are Scope 3 emissions.

Sustainability is also gaining momentum due to various Industry collaborations like Together for Sustainability and Pharma Supply Chain Initiative [PSCI]. For example, the pharmaceutical Industry has introduced the Pharma Supply chain Initiative [PSCI] with 34 pharma units as members. This encourages the inclusion of PSCI Principles in the company's responsible procurement or green buying program helping to influence and promotes senior leader awareness and engagement in responsible procurement.



Grooming IN STYLE

“We are one of the oldest organizations in the grooming industry, driven by innovation, technology and meeting customers’ requirements over decades. While designing a product, globalization is the alpha parameter; gauging the need, a product gets localization touch, which drives through the flow of regional demands,” shares **Ponraj Periswami, Head – Supply Chain Management at an MNC.**



In his current role, **Ponraj Periswami** is responsible for end-to-end supply chain, which includes demand forecasting, supply planning, procurement, vendor development, imports, exports, freight purchase, inventory management, secondary distribution, warehouse management, bonded warehouse, and reverse logistics. He has over two decades of experience in supply chain management. During this journey, he has served companies such as Cole Parmer, RK Foodland, Johnson Diversey, Mahindra & Mahindra Ltd., to name a few. Ponraj has an MBA in Supply Chain Management.

How different and complex is the supply chain for the personal grooming space opposed to your earlier stints in Healthcare and Industrial?

Every industry has its own dynamics and complexity as personal grooming has its own dynamics. Innovation and adaptability of technology is part of every industry and so here too. For males, it’s no more just about a hair cut or beard trimming or shaving, it has gone beyond that; and it has become more of a style statement for men. Surprisingly some of the brands have a category for pets, which includes trimmers, accessories, shampoos and so on. In terms of supply chain complexity, it’s more of positioning of new SKUs with features and price point. Continuous improvement is one of the key factors for new SKUs being added in the product basket. The challenging factors are counterfeits in the market, locally assembled poor quality parts and sub-standard spare parts, unawareness over usage of right tools and methods for desired application.

What are the USPs of grooming segment?

I believe, we are one of the oldest organizations in the grooming industry, which has been driven by innovation, technology and meeting customers’ requirements over decades. Training and

enhancing the skills of every groomer and professional is one of the key USPs along with product performance. While designing a product, globalization is the alpha parameter; gauging the need, a product gets the localization touch, which drives through the flow of regional demands.

Do you have omni-channel retail strategy? How do you foresee the scenario shaping up in the age of e-commerce?

I believe, in India, it’s going to be the way forward for most of the consumer-driven industries. Price point and innovative product is going to be highly in demand and every brand in the race has been using multiple platforms like e-commerce as well as their own websites. Social media has become one of the crucial channels, which compliments the omni-channel drive.

In your stints with MNCs, how do you align India operations with the global entities? Please give examples.

Supply chain management is the backbone for any Indian operation be it manufacturers, traders or kitters. However, for economy of scale, every organization has to look towards ‘Make in India’ drive and the same should be long-term plan for sustainable growth.

Are there any peculiar challenges in

managing a complex SCM network in India and overseas as most of the products must be imported as well? How do you manage inbound supply chain in that case?

In supply chain, network or geography of sourcing or final delivery to customer is the peculiar challenge, since it’s a consumer driven market and witnesses high demand fluctuations due to seasonality, festive cycle and climate too. Moreover, for manufacturing, RM/PM has longer lead-time. The overall culminated impact on the product availability either ways has trigger over business and in such scenarios, maintaining customer delight through innovative products and services becomes the most delegate element of the business. Currently, most of the organizations are focusing on demand-driven projections or predictions rather than typical sales projections. Sales-based projections strengthen the process and gets the organization more closure to accurate planning and execution.

How did you overcome supply chain challenges when you were in Healthcare and Industrial sectors?

Healthcare supply chain is quite complex and unique at the same time as it involves monitoring the acquisition of products and their path from origin to destination. But some of the supplies

are a matter of life and death. Let me share with you a few vital challenges in healthcare:

- ▶ Overnight shipping over-situational demand
- ▶ Hidden cost involved in the healthcare segment
- ▶ Shortage of medicines
- ▶ Shortage of data or information
- ▶ Real-time system integration
- ▶ Advisors’ choice over a particular brand medicine.

Towards the solutions side, we have the only option of having transparency, which drives the integration of real-time information using AI, IOT and ML right from the hospital to patient. On the industrial end, it’s more of Just-in-Time (JIT) based supplies to ensure the production line is up and running to deliver maximum yield as planned. However, the known challenges are demand variability, delayed response time, lack of visibility of demand and supply status, lack of collaboration between manufacturing and suppliers, etc. In both the sectors, we would see that the solution is to get your suppliers and partners involved in the business and have high-level transparency over business through the upgradation of technology or capital investments or training and development of employees. Ultimately, we need to be closer to our customer because he is the reason for our existence.

How do you build and maintain partnerships with your vendors as well as partners in expanding your base?

Transparency in the business is the only available master key for the industry. Hence, we see our suppliers and vendors as more of business partners rather than just suppliers. We are witnessing the EDIs, supplier portals, VMIs and blanket orders are the few examples available currently in the industry. Moreover, the strength of each supplier and geography is also one of the vital components while considering suppliers or vendors and in the expansion and positioning plan.

How do you predict demand and maintain demand-supply equilibrium?

In customer industry, it’s one of the toughest elements in the business. Hence organizations are moving towards more demand-driven parameters. These



Transparency in the business is the only available master key for the industry. Hence, we see our suppliers and vendors as more of business partners rather than just suppliers. Moreover, strength of each supplier and geography is also one of the vital components while considering the supplier or vendor selection and the expansion and positioning plan.

days, technology tools such as artificial intelligence, machine learning and blockchain are getting more involved to bring down the variability, probability and so on. However, human intelligence and touch are the final lid over the subject to concreate decision making.

What have been some of the most challenging projects helmed by you in your career?

I would like to call out couple of examples here – one was setting up temperature-controlled warehouse, right from identifying the geographic location to operationalizing it and serving pan-India customers. Second most challenging project managed by me was distribution network mapping for one of the confectionery companies. Both these projects led to immense learning and interactions with multiple industry stalwarts.

What would be your supply chain mantra to co-exist and build a stronger future for the company and the country?

I always kept my supply chain mantra simple basis these three key pillars – **Efficiency**, which is First time right and Being agile; **Systems & Process**, which should be sustainable, repeatable and measurable; and **Cost optimization**, which drives the operation excellence and sustainable cost.

Please share with us the role of supply chain for India in the near future...

Supply chain is one of the most exciting fields in the current regime,

which is existing in every sphere of our life irrespective of the industry, segment, business and so on, either in the form of services or products. A classic example is our mother or wife at home and the way they manage the inventory, space, low shelf life items, cash flow and running cost. This is the best example I would love to share. As we are a growing nation with such vast geography and complexity in demand, culture and language, supply chain is getting tougher and asking for more skilled people rather than just transporters or handlers. It’s no more just a point-to-point delivery or holding stocks, it’s ultimately all about ensuring CUSTOMER DELIGHT.

How do you foresee the Indian economy growing from here on?

India has high potential of growth as we have the youngest human resource generation, and our adaptability towards culture and technology is a bit quicker. In the last two decades, India has changed the way it used to do business or even normal lifestyle. Going ahead, initiatives such as Make in India with world-class products and at competitive price will strengthen our global positioning.

Trending **GLOBALLY**

Mercedes-Benz Cars drives 'Ambition2039' in supply chain



On the road to sustainable mobility, Mercedes-Benz is increasingly focusing on procurement: together with start-up Circular, Mercedes-Benz is conducting a pilot project for transparency on CO2 emissions in the cobalt supply chain as part of STARTUP AUTOBAHN. The project partners use blockchain technology to track the emissions of climate-relevant gases as well as the amount of secondary material along the complex supply chains of battery cell manufacturers. In addition, the data network documents whether the Daimler sustainability standards are passed on throughout the entire supply chain.

With 'Ambition2039', Mercedes-Benz Cars aims for a carbon neutral new passenger car fleet in less than 20 years. This transformation requires detailed knowledge of all climate relevant processes associated with the entire vehicle value chain. That is why in a first step, Mercedes-Benz is creating transparency of CO2 emissions and the use of secondary material in the supply chain. In relation to this as part of STARTUP AUTOBAHN, the company has started a pilot project with a key battery cell manufacturer and Circular, a start-up specializing in blockchain technology.

The project partners first focus on cobalt, which enters the supply chain from recycling facilities. A blockchain-based system maps the production flow of the materials as well as the associated CO2 emissions. In the long term, Mercedes-Benz is pursuing the goal of a circular economy and is working to close material cycles. For this purpose, the mapping of the material flow also records the amount of recycled material in the supply chain. Furthermore, the network also displays whether Daimler's sustainability requirements in terms of working conditions, human rights, environmental protection, safety, business ethics and compliance are passed on to all companies involved. Daimler calls on its direct suppliers to comply with these standards and requirements and also carry the provisions into upstream value chains and to monitor their compliance. With the pilot project, Mercedes-Benz is driving transparency in the supply chain beyond the direct contractual partners.

Markus Schäfer, Member of the Board of Management of Daimler AG and Mercedes-Benz AG, responsible for Group Research and Mercedes-Benz Cars Development, Procurement and Supplier Quality, said, "With Ambition2039, Mercedes-Benz Cars has set itself high goals. We can only get there in close cooperation with our suppliers. The key is transparency: It is our aspiration to make all processes transparent and traceable. We are the first manufacturer to use blockchain technology to map CO2 emissions in the global battery cell supply chain. In doing so, we are laying the cornerstone for effective improvements – for the environment and for our businesses."

Suppliers and partners play a key role in the implementation of the sustainability business strategy of Mercedes-Benz since they significantly contribute to value creation. The aim is to take into stronger consideration CO2 savings and the environmentally sustainable handling of resources as it pertains to procurement. In parallel with the recording of emissions data, Mercedes-Benz Cars is conducting workshops with suppliers in order to identify effective CO2 reduction measures. The focus of the commitment is initially on materials whose production is particularly CO2 intensive. In addition to battery cells, this also includes steel and aluminium. As a first milestone, Mercedes-Benz will source battery cells from carbon-neutral production for the first time as part of a sustainability partnership with a battery cell supplier.

Amazon develops a new electric vehicle to curb emissions

Amazon recently ordered 100,000 electric delivery vehicles—the largest-ever order of electric delivery vehicles—from Rivian, a producer of emissions-free electric vehicles. The vehicles are the next generation of Amazon delivery vans—electric-powered vehicles that will hit the roads beginning in 2021. The order is part of The Climate Pledge, Amazon's commitment to meet the Paris Agreement 10 years early. The pledge also calls on signatories to become net zero carbon across their businesses by 2040, a decade ahead of the Paris Accord's goal of 2050.

"We are trying to build the most sustainable transportation fleet in the world," said Ross Rachev, director of Amazon's global fleet and products. "It also needs to be the most functional, the highest performing, the safest."

The vehicles will reduce carbon emissions, raise the bar for driver safety, and optimize technology and design elements

Nestlé creates market for food-grade recycled plastics

Nestlé is set to invest up to CHF 2 billion to lead the shift from virgin plastics to food-grade recycled plastics and accelerate the development of innovative sustainable packaging solutions. Building on its 2018 commitment to make 100% of its packaging recyclable or reusable by 2025, Nestlé will reduce its use of virgin plastics by one third in the same period whilst working with others to advance the circular economy and endeavor to clean up plastic waste from oceans, lakes and rivers.

Food quality and safety are paramount, and packaging plays a major role in assuring this. Most plastics are difficult to recycle for food packaging, leading to a limited supply of food-grade recycled plastics. To create a market, Nestlé is therefore committed to sourcing up to 2 million metric tons of food-grade recycled plastics and allocating more than CHF 1.5 billion to pay a premium for these materials between now and 2025. Nestlé will seek operational efficiencies to keep this initiative earnings neutral.

Packaging innovation, including new materials, refill systems and recycling solutions, is another key challenge on the path towards a waste-free future. In addition to its significant inhouse research through the Nestlé Institute of Packaging Sciences, the company will launch a CHF 250 million sustainable packaging venture fund to invest in start-up companies that focus on these areas.

These two initiatives come in addition to Nestlé's major ongoing efforts in research, sourcing and manufacturing to make its packaging recyclable or reusable and contribute to its goal to achieve zero net greenhouse gas emissions by 2050. As part of the company's packaging commitment and to increase transparency, Nestlé will continue to outline further initiatives and provide regular progress updates.



"No plastic should end up in landfill or as litter," said Mark Schneider, CEO of Nestlé. "Making recycled plastics safe for food is an enormous challenge for our industry. That is why in addition to minimizing plastics use and collecting waste, we want to close the loop and make more plastics infinitely recyclable. We are taking bold steps to create a wider market for food-grade recycled plastics and boost innovation in the packaging industry. We welcome others to join us on this journey."

"We are pleased to see Nestlé commit a CHF 2 billion investment toward creating a circular economy for plastics, alongside a reduction of its use of virgin plastic in packaging by one third by 2025. By eliminating the plastics, we don't need, innovating in areas like reuse models and new materials, and circulating the plastics we do need — also in more challenging food grade applications — we can create an economy where plastic never becomes waste. Achieving the commitments announced today will significantly contribute towards realizing this vision," said Andrew Morlet, CEO, Ellen MacArthur Foundation.

to create a best-in-class driver experience. Manufactured at Rivian's plant in Normal, Illinois, they'll come in three size variants and support multiple battery sizes so they can be optimized for specific delivery routes.

Dave Clark, Amazon's senior vice president of worldwide operations, looks forward to the vehicle program's ripple effect. "We created The Climate Pledge and are investing in 100,000 Rivian electric delivery vans to demonstrate that there is a large and growing market for green technologies," he said. "It's important that large companies like Amazon stimulate investment in the development of low-carbon products and services that will be required to help companies of all sizes decarbonize their operations and support a thriving, low-carbon economy."

Each vehicle is designed to include a suite of advanced



safety technology and industry-leading features, including automated emergency braking, front wheel and all-wheel drive options, lane keep assist, a pedestrian warning system, traffic design recognition, and an automatic warning system that detects and alerts distracted driver behavior.

The design incorporates Amazon's technology to offer drivers a seamless delivery experience. That includes a digital instrument cluster and central display screen integrated with Amazon's logistics management, along with routing and package delivery technology systems to make it easier for the drivers to focus on operating the vehicle. The system removes the need for extra devices that provide address and mapping information. Integrating Amazon Alexa will make it easy for drivers to ask for help or use simple voice commands in the cargo bay when sorting packages without having to manually enter commands or consult handheld devices.

CELERITY

THE TWO GOOD AWARDS

30-under-30 Supply Chain Superstars

40-under-40 Supply Chain Super Achievers

We are back to choose and honour the Best of the Best in the Supply Chain and Logistics industry.

After the successful launch of these individual awards last year for the first time, this year too, awards will be given out to those exceptional executives who have taken radical initiatives and are making positive impressions in their company, their industry as well as their domain.

The 30-under-30 Supply Chain Superstars Awards are for the younger gen who are below 30 years of age and are blazing the path. Please visit www.30Under30.in for details regarding the categories, nomination process etc.

The 40-under-40 Supply Chain Super Achievers Awards are for the more seasoned, who are below 40 years of age and are disrupting the supply chain and logistics space. Please visit www.40under40.in for more details.

Meet the Grand Jury

They will decide the Supply Chain Superstars and the Super Achievers 2020



Prof. Ashok Pundir, NITIE



Royston Fernandes
GM- Global Analytics,
J&J



Akhil Srivastava
Director BU South
Asia - AB InBev



Ravikant Parvataneni
CEO, Crimson & Co



Raviraj Rodrigues
Director-Supply
Chain, Alstom



Ranjan Sharma
CIO & Head SCM,
Bestseller



**THIS
COULD
BE
YOURS!**

Nominations across all categories are open till 30th May 2020. Visit WWW.SUPPLYCHAINTRIBE.COM and click on the relevant tabs or visit www.30Under30.in or www.40under40.in. For further queries, call us on 7977105913 or write to us at tech@celerityin.com.



COMPLETE DISTRIBUTION AND MANUFACTURING **INTRALOGISTICS** SOLUTIONS

ENLIVENING 10000+ WAREHOUSES WITH OUR INTRALOGISTICS SOLUTIONS

- Compliance with **international racking standards**
- **Earthquake resistant** racking for all seismic zones
- **Component Identification** System to track from raw material to installation
- **Quick turnaround** time from order booking to installation
- **Rack safety audit, relocation & consolidation services** to ensure seamless operations

25+ MN SQFT OF 3PL PROJECTS COMPLETED

EURO CODE
CERTIFICATION



Scan the QR code to know more

APPLICATIONS

3PL | Automotive | Cold Store | E-commerce | F&B | Manufacturing | Pharma | Record Management | Retail

www.godrejstoragesolutions.com
Toll-free No: 1800-419-7060

Godrej | STORAGE SOLUTIONS