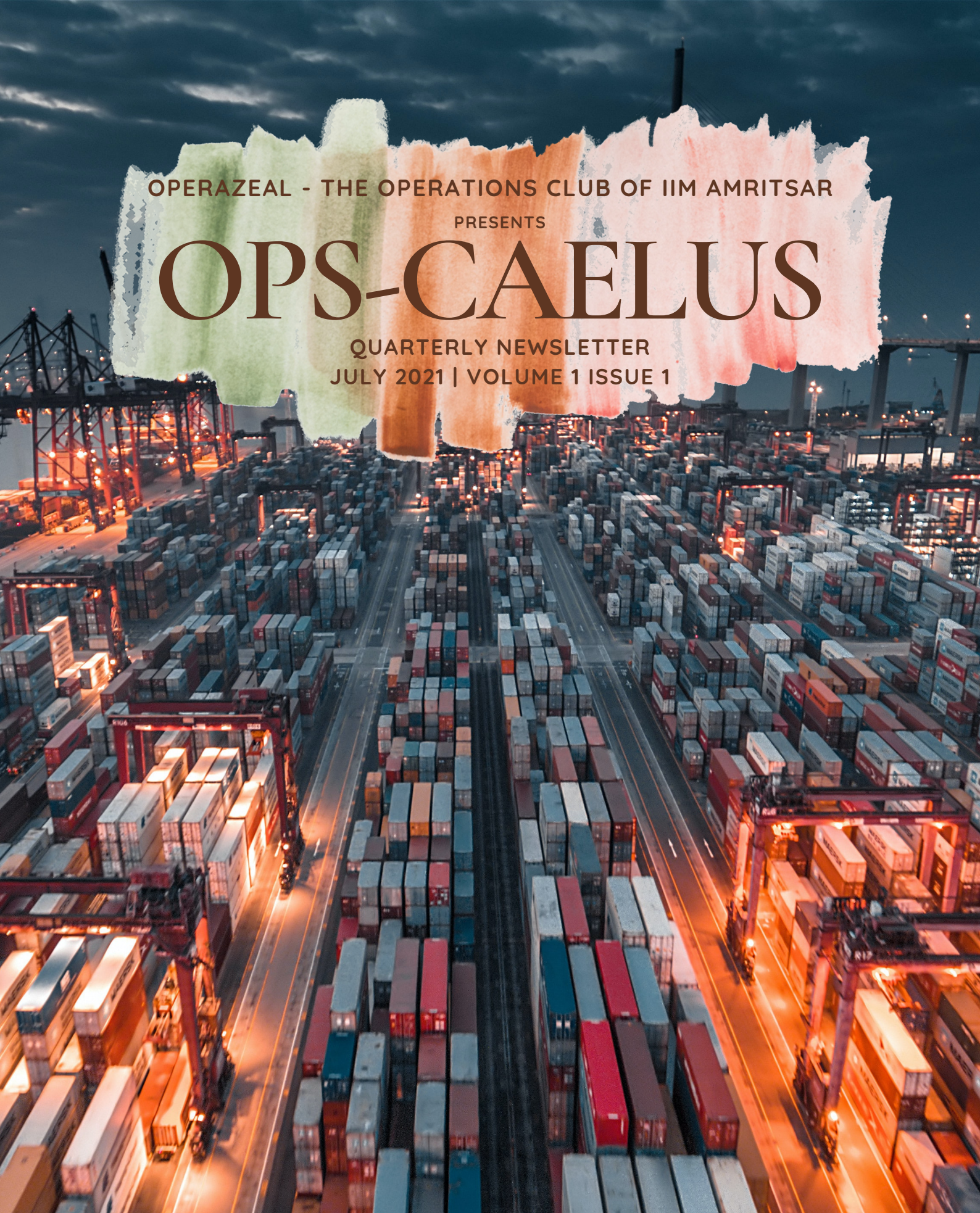


OPERAZEAL - THE OPERATIONS CLUB OF IIM AMRITSAR

PRESENTS

OPS-CAELUS

QUARTERLY NEWSLETTER
JULY 2021 | VOLUME 1 ISSUE 1



**REINVENTING SUPPLY CHAINS FOR
THE POST PANDEMIC WORLD**





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**TEAM
OPERAZEAL**

FOREWORD



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“Intelligence is the ability to adapt to change”. ~STEPHEN HAWKING

The coronavirus pandemic had disrupted supply chains across the globe and forced many companies to shut down their operations temporarily. One year later, as the human population is trying to live with this pandemic, the supply chain managers must also adapt and upgrade their strategies to better align themselves with the ever-changing business environment and uncertainty.

Business continuity planning and risk assessment while designing complex supply chain networks will be vital as we advance. Companies must review their sourcing strategies not only in terms of geography but also in terms of economic and political risk. A multi-sourcing strategy for key components must be considered to reduce the dependence on a single supplier and location. Additionally, supply chains must review and develop the distinguished strategies for each sub-group of materials. It was observed that during the initial phase of the pandemic, a lot of companies struggled significantly from the lack of supply of low-value critical items, such as mouth and nose masks. Companies might want to reconsider their definition of ‘strategic items’ to include low-value items they can’t produce without them.

Business technology integration is a new focus area for global supply chains to integrate the global operations and provide better visibility to all supply chain partners. With the rise of cloud computing, predictive analytics, blockchain, and other disruptive technology innovations, supply chain management is yet to leverage on their benefits entirely. Companies should consider evaluating their supply chain networks based on the following questions:

- Is the right technology being deployed or the right data being collected to better anticipate supply chain risks and prepare for supply chain disruptions in the future?
- Is technology being appropriately used to optimize supply chain networks?
- Are business processes aligned to leverage these disruptive technologies?
- Can we design more flexible & adaptable supply chains? How?

Answering these questions can help companies to develop strategies to build resilient supply chains. However, for the complete transformation of supply chains, business processes, and organizational capabilities must also improve along with technology integration. This multi-echelon transformational challenge requires multi-echelon support across various stakeholders within the company and all supply chain partners. This inaugural issue of Ops-Caelus discusses some thoughts on how certain aspects of supply chain can be improved using some of the ideas discussed above. The newsletter also highlights the Summer Internship experience of IIM Amritsar students and the activities undertaken by the club in the academic year 2020-2021.



A R T I C L E S



TEJASWI AMBRE | MBA 06

Warehouse Automation

“Warehouse Automation” a two-word term, but is anticipated as the future of Logistics.

The market for automated guided vehicles (AGVs) and AMRs will grow by about 35% annually and reach \$13.2 billion by 2026, predicts research.

Furthermore, according to Walker Sand's "The Future of Retail 2019" study, nearly 35% of customers prefer next-day shipping as a key to getting them to buy more online, while 39% say same-day delivery will encourage more people to shop online, and 20% of consumers want delivery in two hours or less. Here's where warehouse automation comes in handy. Here warehouse automation plays its role. It can help in reducing human dependency cost reduction and increasing efficiency leading to customer satisfaction.

The key objective of warehouse automation comes down to minimizing 3Ds- Dirty, Dull, Difficult jobs. Moving parts from within the facility to assembly, transporting finished goods, vehicles to feed products into the picking area, and moving picked parts to shipping docks, everything can be optimized using automation. It provides a more detailed view of where goods are distributed in the supply chain, as well as the ability to visualize the entire supply chain in real-time.

Automation is great, but if the company's infrastructure is outdated, the latest technology is unlikely to work. So, how does a company take advantage of the advantages that modern digital technology has without having to invest in costly new warehouses?

Labor costs constitute 65% operating cost of most warehouse facilities on average. For this companies are investing more in R&D and coming up with many innovative solutions. The latest of those is the SqUID robot. Thanks to machine learning and artificial intelligence techniques.

The shift to hybrid workplaces

A shift in the division of labor between humans and machines, according to the World Economic Forum's 2020 Future of Employment report, could result in the loss of 85 million jobs by 2025. While the Fourth Industrial Revolution is supposed to create more jobs than it eliminates, some old jobs are disappearing faster than new ones emerge, according to the report.

One of the most obvious benefits of warehouse automation, as in any industry, is that it eliminates many of the issues associated with recruiting a human workforce: certain tasks, such as those involving repetitive or dangerous activities, are better suited to robots. Furthermore, robotics can ease some of the pressure on hiring and wage costs in countries where there are labor shortages.

Employees are now facing a double wave of change as a result of the combination of globalization and the pandemic, according to the Future of Jobs survey. 43 % will decrease their workforce size as a result of increased automation. According to the report, by 2025, the workloads of humans and computers would be roughly comparable.

Cloud and WMS:

It's only normal that warehouse management systems (WMS) will follow suit, with public Cloud service spending estimated to grow 18.4 % to \$304.9 billion in 2021 (up from \$257.5 billion last year) and the Cloud accounting for 14.2 percent of overall global enterprise IT spending in 2024 (up from 9.1 % in 2020).

With this in mind, several businesses choose WMS based on its on-premise software distribution model. Fast forward to 2021, and WMS is becoming more reliant on the Cloud. According to Dwight Klappich, research vice president at Gartner, “We're very close to being Cloud-first with WMS, and it's been a long journey when you compare WMS to other supply chain software applications.”

We can confidently attribute data warehouse migration to cloud systems to the Covid-19 pandemic. On-premise data warehouses offer a number of advantages, including better governance, security, and speed. They are not, however, elastic, and determining how to scale the data warehouse for future needs necessitates complex forecasting. During the lockdown, the entire staff was moved to the cloud, including the data center. Also, large enterprise data warehouses, which many believed would never abandon their on-premise data centers, are migrating to the cloud in order to take advantage of today's cloud technology. The most important thing is it takes advantage of elasticity by separating compute and storage. To handle compute or storage needs, a cloud data warehouse scales out its capabilities. Also, they are simple to operate, have a flexible management system, and are cost-effective too!!

SUPPLY CHAIN MANAGEMENT AND THE PANDEMIC



SHIVANSH KHATTRI | MBA 06

After the pandemic subsides, the market is going to be a different place altogether. The supply shock that began in China in February 2020 and which was subsequently followed by a demand shock led to the global economy being crashed. This revealed the shortcomings in manufacturing plans and supply chains of firms all over the world. Shortages of pharmaceuticals, essential medical equipment, and other goods, as well as the US-China trade war, exposed their shortcomings.

Consequently, manufacturers shall be under competitive pressure to increase their domestic production and replan their manufacturing strategies minimizing the dependence on inventory in their global supply chains. The challenge for businesses would be to improve their supply chains while preserving their competitiveness. A major overhaul of the supply chain system with a shifted focus on three main dimensions should be expected in the coming years.

First, regionalization shall be the trend again. Globalization may vanish. At the regional stage, logistics centers will resurface. Product integrators and component suppliers can source, manufacture, and produce from their own places to reduce single-source dependencies and create a versatile and adaptable supply chain.

Secondly, the Supply Chain Stress Test shall be the new protagonist in the post-COVID19 world. The business models demanding new priorities in optimization shall be the new norm. The supply chain shall become the prime driver of businesses.

Lastly, the human dimension shall be back. The human factor is the key to give visibility to "outliers" such as the pandemic. Statistical models discard them from the data which shall make these models useless in the times to come.

Multi-scenario preparation and real-time operations alignment shall be needed. Retailers must also evaluate essential raw material availability and connect it to high-value goods and revenue streams. The main focus area shall be understanding supply-side capacity constraints and quantity and price volatility. Finally, businesses should consider using alternative sources and conducting feasibility studies to assess cost against supply chain convenience.

Consumer businesses should recognize their key suppliers as soon as possible, as well as assess their risks and ability to meet supply demands. Businesses should consider their supplier's ability to supply products with the appropriate quality requirements and timeliness in light of the increase in demand for essentials. This evaluation should involve both material and service providers that could have an impact on the speed and feasibility of their operations.

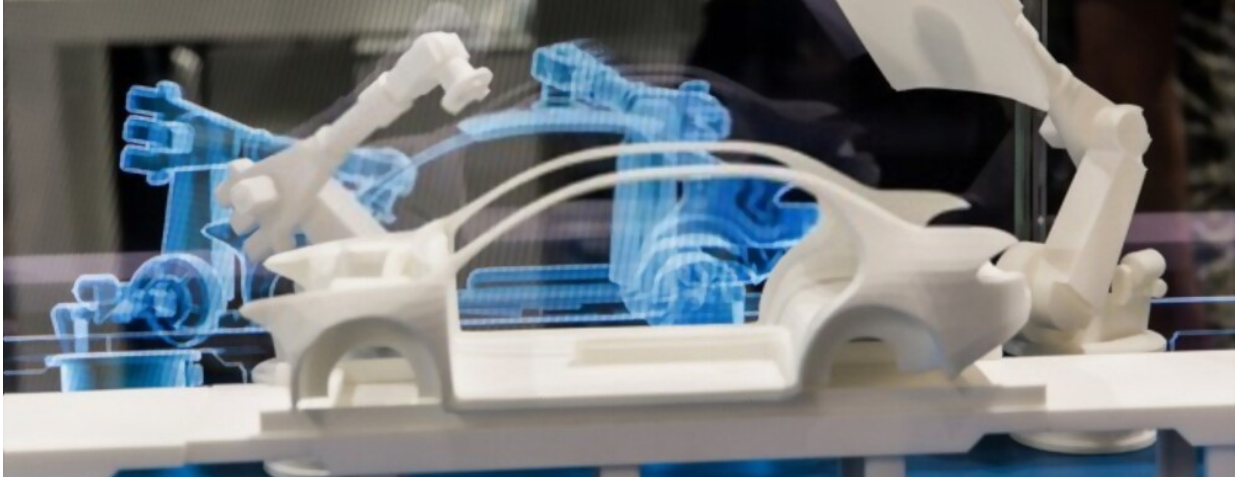
In case there is a variety of products going through the supply chain of a firm, there should be an examination of the product mix to set business goals. This is especially important in cases where goods share raw materials, manufacturing infrastructure, retail space, teams, and other resources. Prioritization is the need of the hour due to constraints such as the restricted supply of raw materials, multiple teams working with lower-than-normal headcount, and so on.

As a consequence, it's important to keep track of inventory levels and increase visibility into all incoming items. Retailers should also strive to gain insight into the supplier's production plans, shipment information, and so on—to better understand and predict any material flow disturbances. Another area to consider is ensuring smooth material handling and sufficient manpower availability. Ensuring adequate manpower availability as well as smooth material handling, are some areas that need to be reviewed and plugged.

COVID-19 has highlighted the shortcomings of the production environment, and in order to adapt to the new normal, supply chains ought to be fundamentally rethought. The priorities should include being localized, transforming the supply chain as a key business engine, and restoring the human asset. Adapting and transforming is the key to the success of an agile business.

DIGITAL TWINS -EMERGING TRENDS IN SUPPLY CHAIN DIGITALIZATION

We all have been fascinated by sci-fi movies since our childhood, be it Iron Man managing his suit with just a few touches on a virtual screen or be it talking to a holograph. Coming to the real world, supply chains are now building on this idea to have a digital image of the goods and services.



What is a digital twin?

Any physical asset, process, and system are replicated into a digital clone. With the use of artificial intelligence, machine learning, blockchain technology, the Internet of Things (IoT), etc., real-time data is collected. This data can thus be analyzed on a real-time basis to make better decisions.

With COVID-19 disrupting all the major supply chains globally, it has become evident that real-time data availability is a critical competitive advantage. According to a study by Ernst & Young, end-to-end visibility was the number one factor cited in creating a successful supply chain.

Steps to build a digital twin supply chain- A life sciences example

A company XYZ sources API (Active Pharmaceutical Ingredients) from China and has its packaging facilities in Europe and the US. The company has eight manufacturing sites, 38 global distribution centers, and 41 markets to cater to. All these entities are modeled in a digital twin with them as nodes.

Post this step, different scenarios are anticipated and clubbed into categories. For company XYZ, the four scenarios are majorly possible:

1. Initial setup disruption: Considering all the manufacturing and distribution stages, all the points of transfers can be checked in real-time for inventory right-sizing, coupling, etc.
2. Critical supplier disruption: If an API supplier shuts down, then the digital twin helps us understand the impact of backstream and upstream operations.
3. Tier 2 supplier disruption: In case of a tier 2 supplier unable to supply, losses can be minimized faster as with the help of digital twin a real-time data would be available for the second supplier to compensate for the shortage.
4. Logistics disruption: With COVID-19 impacting the transport services the most, track of each shipment helps identify the operation cycles and optimize them.

The solutions for disruptions hence identified are put in for a cost-benefit analysis for the company XYZ and disruptions are ranked based on the risk they pose to the organization. Digital twins seek to impart transparency and communication throughout the organization, yet only a few organizations have implemented digital twins in the supply chain. A prominent example in the industry of implementing digital twins is DHL Supply Chain. DHL has created a digital twin of one of the biggest Tetra Pak warehouses in the world. The digital twin is supplied with real-time data in the physical warehouse of Singapore. It has a smart storage solution that tracks and simulates the physical condition and individual stock levels in real-time. The implementation of a digital twin has made the supply chain agile, optimized, and cost-efficient.

- By Team OperaZeal

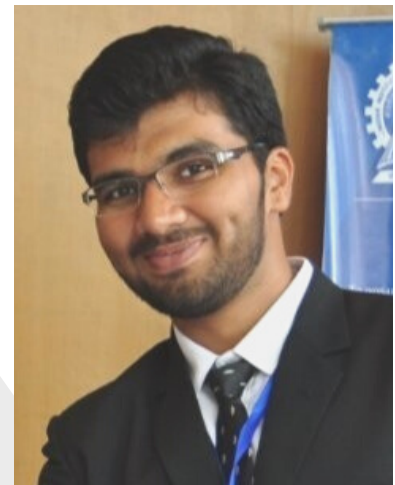
TESTIMONIALS

Summer Internship



The ongoing COVID-19 pandemic has altered every facet of our lives, down to their very roots. But the primal instinct of human nature to keep going on in the face of adversities has led people and firms to adapt and evolve rather quickly. Riding the swelling wave of digitalization, L&T has embraced the 'new normal' by seamlessly onboarding 60 interns in various business units over a digital platform. The experience has been novel in many ways and has given me a glimpse of the future of work-life. Any reservations that I had about the effectiveness of working remotely were quickly dispelled by the proactive involvement of my mentors and a very efficient HR team. I'm truly grateful to be a part of the savvy L&T community.

My internship with L&T has highlighted a major issue in the face of Force Majeure risks like the COVID-19 pandemic, that businesses worldwide can never be too prepared to account for events like these. The economic impact of the disease and the subsequent lockdown has pulled the economy back by decades, and stalled ongoing projects indefinitely. This will be a huge burden on the companies in terms of cost overruns. During the course of this internship, I've gained an insight into the contingencies and resilience levels that firms globally must incorporate in order to deal with such disruptions.



YOGESH RELEKAR, PGP 05
INTERN: LARSEN & TOUBRO
FINAL PLACEMENT: HCL
TECHNOLOGIES



GAYATHRI VISWANADH G

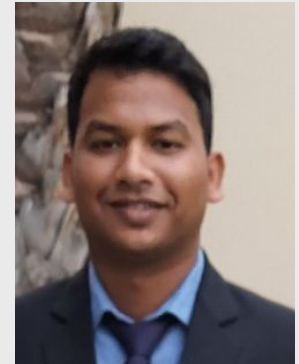
PGP 05

INTERN: MODI NATURALS

FINAL PLACEMENT: HAPPAY

While the virus set out in deep rooting itself into the country, we set out to virtually intern for almost the first time. I was an Operations intern at Modi Naturals Pvt. Ltd. I was very fortunate to work under the most amazing people who constantly supported us while understanding the virtual boundaries during the internship period. The knowledge I gained during my internship, strengthened my concepts and were extremely helpful during the final placement interviews. Any domain requires the discipline to learn. The only eligibility criteria for you is to be an ignited and passionate individual. Everything else follows.

My internship as Operations Intern at Larsen and Toubro Ltd has given me the opportunity to see so much more about the operations management domain than I am able to learn in the classroom. It was a wonderful opportunity to learn and get a better understanding of the company's culture and values. Some of the other things that I have valued most about my internship include, the nice and supportive working environment, crucial guidance from project guides and great support from the project teams. I also benefitted from attending the training programs and seminars that were conducted to enhance our technical knowledge. The internship, though virtual, was a worthwhile experience and I feel that it has prepared me well for my professional career.



GIRISH SAWANT

PGP 05

INTERN: LNT

**FINAL PLACEMENT: GOA
CIVIL SERVICE**

The summer internship is a crucial and exciting part of the MBA journey and I was fortunate to bag an internship in the Logistics domain of the Dalmia Bharat Group. Having no work experience, I was nervous about delivering on the expectations from me especially due to the work-from-home scenario. My project was based on the improvement of service level, which involved a detailed analysis of the current working process in the organization. The role of my mentor was instrumental in the learning process. Discussions with various stakeholders involved helped me in developing a holistic understanding of the current practices and gave me cues of what was needed to be done. Analyzing and deriving meaningful insights from the data provided, researching industry best practices, and performing competitors analysis aided me to identify the gaps, apply the concepts learned in class and come up with pragmatic recommendations.



ANUSHA RAMAVATH

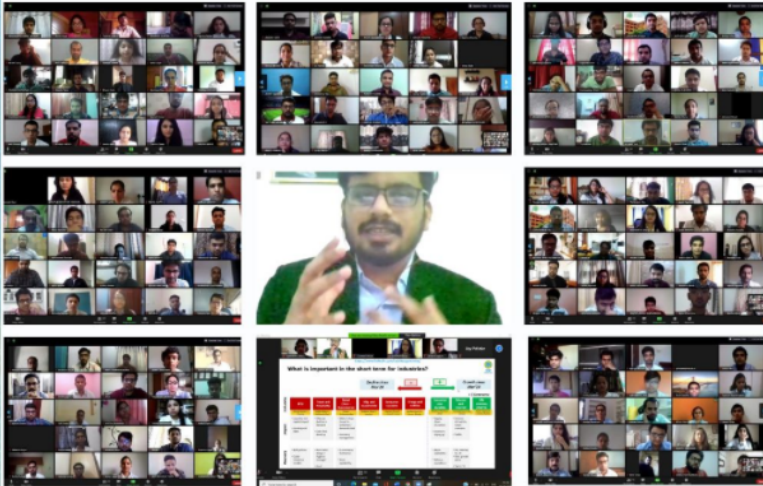
MBA 06

**INTERN: DALMIA
BHARAT**

EVENTS

INDUCTION OF MBA 06

Team OperaZeal had successfully conducted the induction program for MBA 06 batch and formally welcomed them to IIM Amritsar. The functions and role of the club at the institute were appraised, along with the various events the club conducts throughout the year. The main highlight of the event was a fun and interactive video quiz, Ops-Quiz Beat, which was very engaging and enjoyed a lot by the students.



OPS-CONNECT 1

OperaZeal successfully conducted Ops-Connect, an industry interaction series where we invite industry stalwarts to share their experiences and address students' queries. The first guest was Mr. Vikas Patel, an alumnus of NITIE currently working as a Strategy & Business Design Manager with Deloitte. Mr. Vikas delivered a comprehensive presentation with a sector-wise analysis of industries, including the rate expected by the sectors to recover, recovery steps, and many such insights. He also emphasized the soft and core skills that will be required in the Post Pandemic World for managers as well as workers. Overall the lecture was focused on how the students can be ready for the New Normal as future managers and the importance of structured thought processes in analyzing problems.

OPS-TALK 1

OperaZeal successfully conducted the first session of Ops-Talk series of the season. The first speaker of the event, Keshav Arora of the PGP 05 batch, spoke about the concept of Digital Twin in the Supply Chain. Digital twins are a digital replica of physical assets, systems, processes, and devices. The batch was exposed to different areas of Operations management such as

Green supply chain, Workforce management, Inventory management, and many more emerging concepts. The second speaker, Amit Chandekar of MBA 06 batch, enlightened the audience about the working of a warehouse. Having more than a year's experience at Reliance Retail, Amit gave insights and shared his learning about warehouse operations in distribution centers. More than fifty plus audience from both the batches had joined to listen to them.

KPMG LEAN SIX SIGMA WORKSHOP

Team OperaZeal organized a 25 hour long Lean Six Sigma Competency Development workshop in collaboration with KPMG. Six Sigma is a set of techniques and tools for He stressed its importance and need in the current COVID-19 scenario. process improvement. It gives an added advantage for those who aspire to make a career in the Operations domain. The workshop was a resounding success as all the ninety students who appeared for the Green Belt Certification Exam conducted by KPMG cleared it with flying colors.

OPS-CONNECT 2

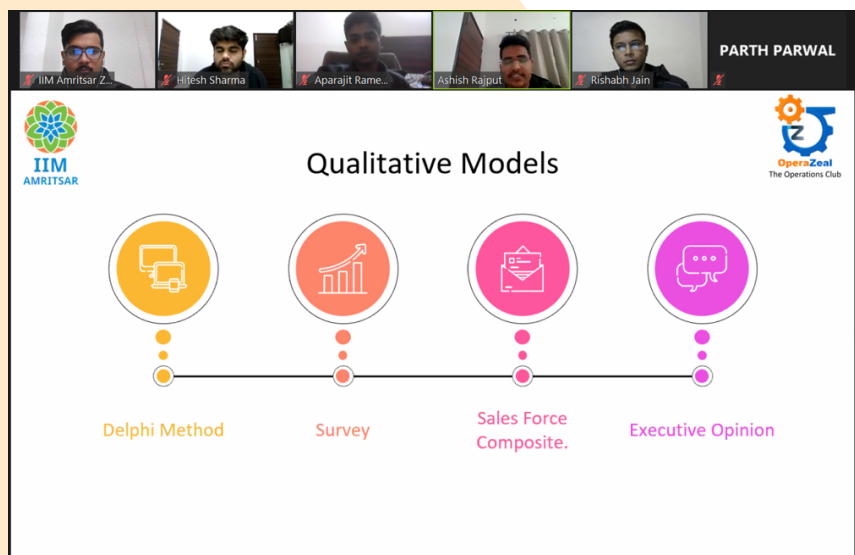
In the second episode of Ops-Connect, OperaZeal, in collaboration with the Prep Club, hosted Mr. Prasoon Mallik, an alumnus of IIM Amritsar batch of 2019 who was working as a Demand planner with boAt. Prasoon interacted with students at length and answered questions ranging from preparing for the Summer internships in the Operations domain to the changing workplace dynamics of the future. He re-lived his college moments and talked about the courses and the professors.

OPS-QUIZ

Three rounds of the annual quiz series, Ops-Quiz was conducted from November to February. Students from both batches enthusiastically participated to compete while they learned something about operations and even won cash prizes! The event revolved around basic operations and supply chain concepts and tested the participant's knowledge of the current trends and news in the domain. Ankit Goyal, Smriti Goyal and Urvesh Patel bagged the first, second and third prizes respectively.

OPS-TALK 2

This peer learning monthly event was conducted in November on the topic Lean Six Sigma. Mutha Abhishek Santosh and Deep Bahadur Thapa of the MBA 06 batch both Lean Six Sigma Green Belt Certified holders delivered the talk to over 50 enthusiasts who found the session enlightening and rich with learning. This also gave the certificate holders a chance to revise the concepts and brush up their learnings. Students also claimed that this session helped them prepare for the ongoing Placement Interviews.



EVENTS

OPS-CONNECT 3

In the third episode of OperaZeal's guest lecture series, which was conducted on 26 November 2020, we hosted Mr. Umesh Joshi to deliver a lecture on the topic "Improving Top Line and Bottom Line by Sales & Operations Planning Maturity." Mr. Umesh Joshi is currently the Associate Director of Perfetti Van Melle and has experience of over 21 years in the fields of Production, Purchasing, Planning, Logistics, and Warehousing. He has also been a part of premier companies such as Britannia Industries Ltd, ITC Ltd, Bajaj Auto Ltd., and Murugappa group. An interactive Q&A session followed the lecture.

OPS-TALK 3

In the third episode of the Ops-Talk series, the speakers were Rishabh Jain from PGP 05 and Ashish Rajput from MBA 06 batch. They delivered a talk on Building resilient supply chains and Forecasting, respectively. It was an enriching session where major disruptions in the supply chain, sector-wise analysis, and pillars of resilience were explained comprehensively. Qualitative and quantitative methods in Forecasting were also described in brief.

AARUNYA 5.0

Team OperaZeal successfully conducted two events, Ops-Samadhan and Ops-Simulation

as part of AArunya 5.0, the annual flagship national level Management, Cultural and Sports Fest of IIM Amritsar. Ops-Samadhan, was a case study competition conducted in three rounds which included an online quiz, case analysis submission, and presentation before the jury. Students from various B-schools had participated enthusiastically. The second event, Ops-Simulation, had two rounds, consisting of an online quiz and the simulation game - TL2PM. Participants experienced the role of a project manager and completed projects while managing cost and time. The top three winning teams were awarded prizes worth ₹19,000 in each event.



OPS-THEMATIC

During the time of 5th edition of Sankshetra - the Annual Operations and Strategy Conclave, OperaZeal conducted Ops-Thematic, a Talk and Quiz event on the Operations theme of the conclave - "Reinventing Supply Chains for the Post-Pandemic World". The speakers for the event were Abinaya N and Varun Nair of MBA 06 batch. They had also presented to the guests and audience on the D-Day. The event was conducted so that students could learn and get acquainted with the Operations theme of Sankshetra to enable them to better understand the discussion and ask relevant questions to the panelists. The event concluded with a Quiz whose winner Shivam Koul of MBA06 batch received a prize money of ₹1000.

SANKSHETRA 2020-2021

Industry Interaction Cell successfully organized the fourth edition of its Annual Operations and Strategy Conclave: Sankshetra on January 9 and 10, 2021, in VC mode. The theme for the Operations panel discussion was 'Reinventing Supply Chains for the Post Pandemic World', and for the Strategy panel discussion was 'Evolving Strategy and Consulting Amidst Changing Socioeconomic Outlook.' The Operations panel included experts in the domain of Supply Chain Management from organizations like Kellogg Company, Bateel International, and Raymond Apparel Limited. The panelists accentuated the need to move from brick and mortar to IT-enabled organizations to ensure the global scalability of supply chains.

They discussed the impact of the pandemic on global supply chains across various industries and how automation and digitization can transform an organization's supply chain. The Strategy panel included veterans in the field of Strategy and Consulting from esteemed organizations like IBM India Pvt. Ltd., Axis Bank, and Reliance Jio, to name a few. The panelists discussed various strategy and consulting approaches, including the importance of modularity to test solutions quickly and iterate. They emphasized the need to build robust systems to tackle unforeseen circumstances by increasing tolerance for failure. They also shared their thoughts on how the role of a consultant includes looking at both sides of the business - the idea front and the resource front.

Team OperaZeal



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