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IMPORTANCE OF SUPPLY CHAIN & LOGISTICS POST PANDEMIC

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ABSTRACT

Supply chain management enables organizations to regulate and reduce supply chain costs, and also reduce the utilization of major fixed assets such as warehouses and transportation vehicles, while enhancing the speed with which products are delivered to consumers. The fundamental goal of mobility in distribution network management is to increase the total value of each shipment, as evaluated by user satisfaction. This indicates that human resources reduction and efficiency must be coupled in order to maintain a state of customer satisfaction. The main Objective of this research paper is to understand & study the Scenario of logistics before pandemic and after pandemic, before pandemic majority of the transport was dependent upon major suppliers in the market and now the companies are looking for alternatives and make transportation of goods simpler. The other objective is to see how people around the world realised the importance of logistics in their life, as if transportation is not done via proper channels the supply of goods will get affected which will directly affect the consumers.

Post Pandemic we saw how important is logistics in our life, if we don't have proper logistics system the supply chain of products around the world gets affected, industries such as pharma, chip manufactures suffered a lot as ships and planes were not available to ship out the products on time, which led to disruption of the market place, and we still can see its after effects as when the transportation was not available factories stopped manufacturing goods and laid if 1000s of people which later led to shortage of goods worldwide. Based on the study the covid-19 examination of the supply chain ecosystem provides a foundation for further research employing a transformative lens. Earlier people were not aware of the supply chain and its management but during pandemic due to disruption caused in the supply chain leads the unavailability of the products at the market and also the drastic rise in the demand post pandemic realized everyone that supply chain and logistics is very much important for the availability of the products and smooth flow of goods in the market place.

KEYWORDS: ***COVID-19, Supply Chain, Logistics, Pandemic, E-Commerce, Sustainable Logistics, supply chain disruptions, supply chain recovery.***

INTRODUCTION

The increasing E-commerce has had a significant impact on logistics and supply chain management (LSCM), and we're still overwhelmed by its achievements in both developed and developing countries. In the Ecommerce LSCM, there really are two primary types of marketing strategies. Business to consumer (B2C) and business to business (B2B) are the two categories (B2B). A corporate website, under the B2C model, is a venue in which all direct contacts among a business enterprise and a client actually occur. In this scenario, a customer visits the internet and places an order for a catalogue. The business organisation will distribute the merchandise to the consumer after receiving an order. Amazon.com and Flipkart.com, both B2C giants, were successful examples systems. (Chiu, 2010).

LITERATURE REVIEW

A. Logistics System

A logistics system is the journey that natural resources or commodities take from their place of origin to their point of use. The place of origin refers to raw materials that are generated in order to manufacture finished items. The point of use refers to the next phase in the project that involves materials or work-in-progress items to generate completed goods for consumers. The logistics system is composed of the connections between logistical operations including buying, forecasting, manufacturing, warehousing, and transportation. It is critical for boosting the competitiveness of a company's products and services. The logistics program's competitive edge is realised via speed, reliability, creativity, and consumer reaction. A logistics system's goals are to increase efficiency and reduce expenses. (Zhang, 2007)

Companies must lower expenses while improving product quality in ability to answer to client demands and maximise revenues. As a result, a logistics system is used to examine an organization's transportation flow through origin and the point of use, which collects raw materials for production and

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distributes items to customers. While organisations might concentrate on logistics systems to lower expenses and enhancing customer satisfaction, that those are short-term aims for enhancing company's profitability; nevertheless, lengthy achievement should be considered. (Zhang, 2007)

B. Sustainable Development

Sustainable development, as described by the World United nations Environment program, is "advancement that satisfies the requirements of the current while jeopardising skilled workers' ability to fulfil their respective needs." To ensure social, financial, and protection of the environment, the notion of sustainable development entails managing the interaction between environmental problems and economy. Companies should evaluate all 3 of these factors for long-term improvement. The objective of sustainable growth is to enhance financial benefit while decreasing environmental damage and increasing quality of life for people. Sustainable development has a long-term perspective by concentrating on finance, individuals, the society, and the planet. A prominent sustainable approach, Triple Bottom Line, examines the link between business, the ecology, and sustainability capital. (Chaabane, 2007)

SUSTAINABLE LOGISTICS

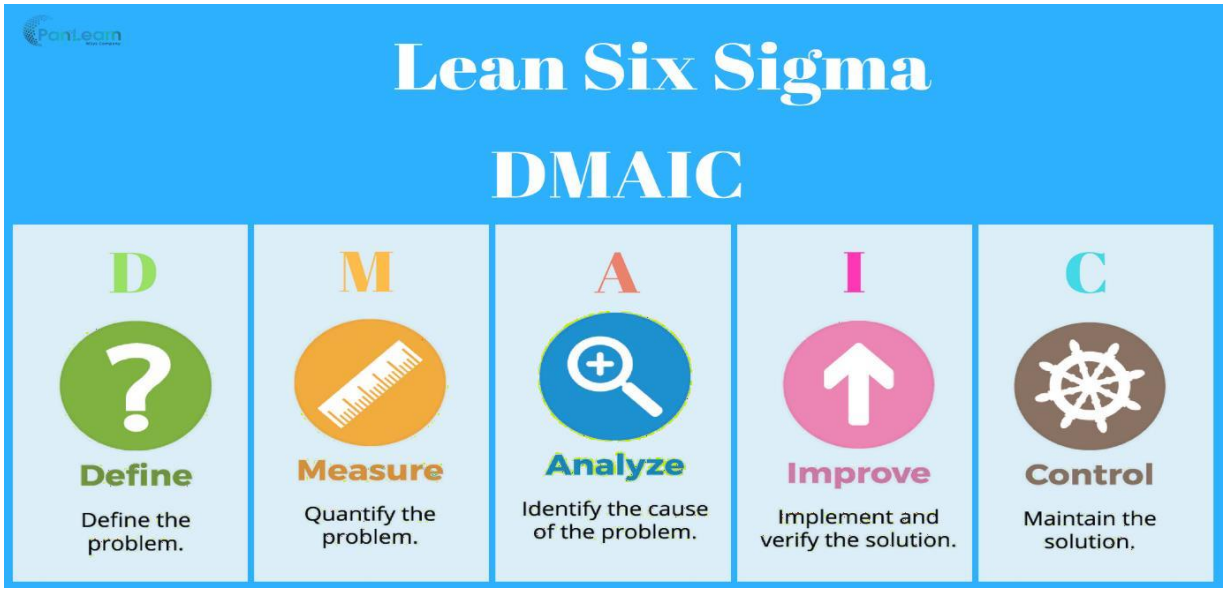
Sustainable logistics is a resource management technique that integrates environmental sustainability and a distribution network. A sustainability supply chain concentrates on logistical activities (such as procurement planning, sourcing, production, storage, and distribution) to decrease a company's expenses, minimize its environmental effect, and address its societal impact. Sustainable logistics provides businesses with financial, ecological, and social welfare such as greater asset utilization, improved customer experience, efficiency improvements, decreased social impacts, and better quality of life. (Reynolds, 2012)

PROBLEM STATEMENT-1 & SOLUTIONS

When covid has struck the world the procedure for the warehouse management and the loaders has been changed due to protocols. The service-based company or the manufacturing company can work with a Man- power of 60% on alternate days, but when it comes to E-commerce transactions due to the high number of transactions that has been rapidly increased due to covid-19 outbreak it is not possible for the warehouse to run with 60% staff compared to transactions happened before and after covid-break.

There were so many incidents were the accuracy for the successful completion of Lat-Mile delivery before covid was 98% and the same has been during but when the waves are passing through the accuracy came to 90-93% this is a very big loss to the industry because when you look at the numbers the level of loss will be high on demand.

For an example assume that you have lost a 15000rs valued product for one delivery hub in a month thrice then you can calculate no of hubs that are present in the country. This is inclining to crore of rupee loss to the companies. This will be a major loss for the company growth and it effects customers satisfaction.



Using DMAIC the we are able to define the problem and the solution if it is possible.

Define the problem

- The problem is loss of revenue due to mishandling of shipments and missing of packages while delivery causing the customer dissatisfaction.
- assuming that you have lost a 15000rs valued product for one delivery hub in a month then you can calculate no of hubs that are present in the country. This is inclining to crore of rupee loss to the companies. This will be a major loss for the company growth and it effects customers satisfaction.

Measure the problem

- The missing of accurate shipments and material in the shipments are causing major loss to the organizations due to this the companies are facing a huge loss.

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- The problem is very high in nature due to this the customer satisfaction is being loss.
- This is a major cause for leakage of revenue.
- This has been coming into the picture after the covid break-out.

Analyse the problem

- This is major cause of this problem was the shift of staff during the covid times at Fulfilment centres.
- Before the covid out break there was a requirement of permanent staff at the location and operated to the fullest, but after the covid out-break every time they used a temporary recruiting concept, Due to this there was no legal assistance as this was given to a 3rd party logistics.
- There was no proper information who was in the shift as this is a 3rd party requirement process.

Improve

- This is possible only through milk run and regular Six-sided verification of the shipments while offloading and receiving the shipments at last-mile delivery station.
- Although there may be several alternative solutions to almost the same issue, only the greatest or leading three must be used.
- Preferably, these suggested solutions should not demand such huge investment expenditures, and they should be validated before implementation so that potential efficiency can be verified and time is not wasted on alternatives that take a lot of work for little gain.
- To ensure that the proper choice is taken, the team may use "PDCA" or Plan Do Check Act compact loops, which may assist develop concepts and gathering vital stakeholder feedback.

Control

- This should be a continuous process in the case of logistics because this is the major effecting part for the logistics industry.
- This phase focuses on preventing complacent while the project goes well enough and objectives are now being accomplished, as well as taking appropriate measures whenever the program veers off course or the environment is changing. This stage is a scaled-down form of management system.
- All through project, the group has indeed been constructing architecture, and during the Control Phase, they begin to describe exactly how they intend to transmit this framework on to the workers that operate inside the system.

CLIENT REQUIREMENT

Objective	Jan	Feb	Goal	Result	Status
Reduction of the DPMO	345238	551020	10000	33333	x
Increase in the sigma level	0.4	0	2,3	1,8	X
Reduction in the coefficient of variation (%)	44	36	11,5	14	X
Reduction in the average time (min)	27	34	25	24	</
Coupling/ decoupling (min)	12	12	0	0	</

Despite the fact that some of the objectives were not met, all of the results improved. The project team chose to undertake a fresh test using the new solution -'Single Route,' which resulted from the merging of routes A and B, because the waiting period for just a load of absolute was too long. And that there was a minor decrease in mean route duration and variation of time from 14% to 16%, as well as a decrease in the number of routes lasting more than 30 minutes (3 routes), a favourable effect was discovered. The time spent in the warehouses among two route trips decreased from a mean of thirty min to 60 seconds as a together once was attained more rapidly due to more locations serviced just on trip.

The automated pay system for recording the moment of leave and admission into the warehouses was kept for control purposes. Three following months its go phase, 7 of the 190 trips were longer than 30 minutes, suggesting a fault rate of 3.6%. The routes took an average of 24.4 minutes to complete. These findings indicated that the new process had reached a state of equilibrium.

As a result of the enhanced quality, the inventory level in stores was lowered. The consolidation of two pathways into a specific route resulted in reduction of two operators each day as well as the deletion of one propulsion device hired from an outside firm. These cost-cutting measures led in a savings of approximately 100,000€ per year.

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CONCLUSION

In order to overcome the situation that comes with this kind of problems the organizations have to establish a structure to monitor the process and then the problem can be reduced in this frame. The logistician places a high value on variation reduction and defect reduction since controlling inventories, customer confidence, and sales are all about controlling variability. Six Sigma is all about identifying the causes of faults and variability and devising ways to eliminate them and reach as near to 'Zero Defects' as feasible. It is a basic, efficient, procedure, and systematic approach to creating improvements that has a sharp divide of duty and a goal of achieving significant outcomes. It should be viewed as a long-term programme of continuous progress. The DMAIC approach is the "backbone" technique used in Six Sigma development attempts. Its adoption in the project detailed in this article resulted in an annual financial gain to the firm of roughly 100 000€.This technique works well in conjunction with the Lean methodology. A company's attitude and plan might include an emphasise attained via variability minimization.

PROBLEM STATEMENT-2 & SOLUTIONS:

Previous towards the COVID-19 epidemic, transportation businesses focused on linked & efficient distribution networks in order to fill bottlenecks by enhancing performance of the supply chain. The outbreak, though, has subjected most logistical industries to major supply chain interruptions because to heretofore unknown distribution network weaknesses. In brightness of this, we systematically reviewed academic articles on SCDs and public transit disturbance in overall, and outbreaks in special, and discovered that there is so little research and studies, especially in the context of freight forwarders, and suggested legislative proposals by proposing a model of rigorous shipping and innovative distribution network for slightly quicker distribution network healing. We analysed the substantial available studies on SCDs, transportation awareness, and ALS via literature review. Several Indian enterprises had experienced significant interruptions in supply chain management as a result of limited shippers capability, constrained circulating, port restrictions, and sluggish customs inspections, involving effect on shipping and logistics data, slowdowns, and container suspensions. This has damaged manufacturing and shipping containers, as well as logistics services, generating bottlenecks and difficulties for end users. Companies are undertaking considerable efforts to recover from SCDs when limitations are eliminated; yet, the SCR is still gradual due to insufficient utilisation of strong TI and ALS. This required an assessment of the prioritised firms' current logistics and ALS. As a result, we proposed a new approach to dealing with SCDs by utilising strong intelligent transportation systems and ALS. With a dependable system and logistical options, items can be supplied to customers very efficiently. A variety of conditions and inter - and intra contributed to shipping disruptions in distribution network. For example, poor climate hampered shipping and harmed supply networks. An disruption, such as the COVID-19 pandemic, therefore, poses a major risk to support sustainable movement and causes conceptual. COVID-19 has had an impact on shipping supply chain management in a number of ways all across air, rail, road, and marine sectors. As an outcome, there are indeed a range of possible supplier harm as a result of mobility interruption, requiring the detection of potential risks posed by shipping interruption via creative Dynamic capabilities and rigorous strategies to mitigate via operational risk management in order to restore from a company downturn. Organizations should develop an efficient mitigating and response plan in the case of logistically difficulties. The impact of COVID-19-induced shipping disruptions on SCDs, on either hand, has utilisation consideration. In visible region of all this, people conducted a literature review on distribution networks, SCDs, and SCM in connection to outbreaks like COVID-19 to recognise open issues and, as just an outcome, suggested prevention measures including a transportation and distribution recovery process and allowed to prescribe short- and lengthy attempts to measure for companies to restore quicker from liner shipping interruptions.

The COVID-19-induced shutdown metrics have seriously hindered transportation movement, as well as hinders international trade and brought attention to a fires in the supply chain management. Freight transportation constraints have affected item movement substantially. Lockdown restrictions prohibited first- and last-mile travel along with integrated multimodal movements for a period, so they were eventually lifted. These limitations have led in severe vessel tonnage reductions and technology constraints, hurting both trade and investment. India's aviation truck traffic declined by roughly 17–20 percent in 2020–2021, owing to policy capacity constraints to alleviate the effects of the COVID-19 outbreak. Although a 45 percent decline in air carrier quantities from April to September 2020, the quantity of shipping goods has returned quicker after April 2020. Investment opportunities in logistics and distribution need significant expenditures advance of any expected interruptions, such as the COVID-19. When there is a disruption, the companies must pay for the directly and indirectly transportation costs associated with the alternate energy channel plan. The alternative shipping route plan must take into account the usage of assets as well as the possibility of a breakdown. Likewise, if a firm's usual roads and highways is disrupted, an alternative mode can be used to lessen the risk of a lead time disruption. Study also looks into how "alternative mobility" may assist in the case of delays in public transit. We explored the optimal "multi-objective" provider route dilemma in the case of a shipping delay having done significant investigation.

CONCLUSION

The COVID-19 outbreak led to a massive number of SCDs owing to previously unreported supply chain weaknesses caused by policy financial restraints, such as transportation delays worldwide, even in India, that had a serious effect here on businesses' always be. Numerous Indian firms also experienced severe interruptions in logistics operations, including one with a functional assessment on shipping and delivery statistics, huge waits, and shipment terminations, as a result of severely reduced payload capacity, physical limitations, hub shutdowns, and difficulties in frequent borders —. It really has led to substantial delays and diversion to ultimate customers in commodity manufacturing, transit shipments, and capacity to acquire. Companies can use the proposed framework of robust transportation and ALS for

speedier SCR in an economic meltdown, such as the COVID-19 outbreak. The administration has lately abolished the majority of the limitations, and companies had made substantial attempts to recovery rapidly after Turn facilitates; but, limited usage of powerful Tl & ALS has allowed the firms' SCR to be delayed. This needs a priority evaluation of contemporary business mobility and ALS in order to accomplish a speedier SCR. As a consequence, my suggested technique, which employs powerful iot technologies and ALS, might be extensively applied to treat SCDs. Companies also must assess the advantages and disadvantages of applying the proposed strategy, and even the efficiency of shipping and logistical assets.

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