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Supply Chain Optimization in E-commerce

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ABSTRACT: E-commerce has had a marked influence on retail shifts as well as supply chain complexities. The Internet is giving shoppers more possibilities and better access, but this also gives rise to the issue of effectively meeting a large number of small online orders at reasonable prices. Efficiency in the supply chain representability for the e-commerce success. The present essay aims at shedding light on supply chain optimization approaches in ecommerce. The following is a strategic task to create a fast and agile fill-in ability that is capable of operating rapidly a high number of small B2C orders. Measures focus on a wide availability of distribution fulfilment centres in the proximity of customers' end, sophisticated warehouse management systems, technological upgrading, and offering an assortment of delivery choices.

OBJECTIVES

The primary objectives of this study were:
- E-commerce latest trends.
- Landscape of e-commerce in India.
- Various partners involved in e-commerce.
- Issues and Challenges faced by customers during online purchase.
- Recommendation for enhancing the efficiency of supply chain in e-commerce

I. INTRODUCTION

E-commerce, driven by its fast growth, has ushered in a new era of business and supply chain management. With rising online shopping and the ever-growing demand for faster and more efficient delivery services optimizing the supply chain has become the essential component for e-commerce firms to stay in business. Supply chain optimization is the process of making the process and activities around it perform better by reducing cost and enhancing satisfaction of customers. This study will look at the application of several supply chain optimization strategies in the electronic commerce industry.

Due to E-commerce, the traditional retail model has been disrupted and now consumers can enjoy their shopping on whenever and whatever they want: at home or on the road. On the other hand, this doubtless pose various novel barriers for e-commerce companies, especially concerning their supply chains. In contrast with the basic brick-and-mortar stores that normally sell goods to buyers directly, the e-commerce companies must deal with a sophisticated networks containing of suppliers, warehouses, distribution centres, and logistics to make sure that goods get to their destination as soon as possible and in perfect condition.

E-commerce is an ever-changing industry with new trends emerging constantly: -
- AI-powered recommendations: Delivering personalized shopping experience is now possible by applying AI to customer data and browsing details. This way conversion rates and customer satisfaction will be improved.
- Omnichannel personalization: Allowing consistent experience across all touchpoints (website, mobile app, social media). Customers may see product recommendations based on their past purchases on any platform, be it web or mobile.
- Virtual product try-on: Visualize yourself wearing clothes or wearing makeup virtually in a virtual environment before you make a purchase. AR allows the customers to see how a product would feel on them, decreasing the level of purchase anxiety and returns.
- Enhanced product visualization: AR can be used to see furniture inside your own home or how a new appliance would sit in the kitchen to aid you in making smart decisions.

II. LITERATURE REVIEW

Ayan so et al. (2006) proposed a half breed approach consolidating hereditary calculations and fake brain networks for request gauging, exhibiting further developed execution contrasted with conventional strategies. All the more as of late, Zhao et al. (2018) fostered a profound learning model that integrates outer variables, like advancements and weather patterns, to further develop request determining accuracy.

Alizadeh et al. (2015) introduced a multi-item stock control model custom fitted for e-retailers, upgrading stock levels and request amounts while representing request vulnerability and item replacement. Huang and Xu (2019) proposed a two-stage stochastic programming model for multi-echelon stock streamlining in online business supply chains, taking into account vulnerabilities popular, lead times, and transportation costs.

Mehrabian et al. (2019) fostered a blended whole number direct programming model for the coordinated improvement of transportation, stock, and office area choices in web-based business supply chains. Their methodology planned to limit all out costs while meeting client care necessities.

Zeroing in on last-mile conveyance, a huge test in web-based business coordinated factors, Coda et al. (2015) fostered a vehicle steering calculation that considers time windows, driver timetables, and vehicle limit imperatives. Boysen et al. (2019) tended to the truck planning issue in cross-docking terminals, generally utilized in web-based business satisfaction focuses, utilizing a blended number programming model to limit functional expenses and deferrals.

III. RESEARCH METHODOLOGY

This survey follows a descriptive research design specifically focused on understanding consumer preferences and behaviours related to e-commerce supply chains. It aims to capture a snapshot of public opinion on various aspects of online shopping logistics.
- Data collection – survey with a mix of questions
- Gathered Data from – 50 people
- Gather quantitative data
- Analysing responses across different demographics can reveal patterns in consumer preferences.
- Overall, this survey offers valuable insights into consumer preferences regarding e-commerce supply chains.
- E-commerce latest trends

IV. DATA ANALYSIS

- **Age**
The survey shows us, that the largest age grp was (18-25) and (41-60) were 44%, then the age grp (20-60) was 16% and the smallest group was 4% were 60 years old and over. In other words, the majority of the respondents were either young adults (18-25) or middle -aged (41-60).

- **Gender**
The survey on 50 respondents in which more than half, 56%, are male and the remaining 44% are split among female and other gender.

- **Which e-commerce platform do you use frequently?**

The largest segment, (36%) indicates that "Flipkart " was the most common response, than the second-largest segment, (30%), represents those who considered "Myntra " is the most common platform used frequently. The third segment (18%) corresponds to responds who say "Amazon", while the smallest (16%) indicates those who consider "Nykaa" as a response.

- **Have you encountered issues with product availability or stock-outs?**
The survey shows that 58% answered "Sometimes", as their response, that they have encountered issues with product availability or stock-outs, followed by 24% answered "Rarely ", then the third segment shows 10% answered "often ", and the rest 4% responses were "Always" and "Never".

- **What is the most common issue you face during online shopping?**

This survey illustrates the most common issues customers face during online shopping , 50 respondents. The largest segment , representing 36% of respondents who say Poor customer service . 24% responses was there are Delivery Delay , further 22% responded for Payment Issues and the smallest segment 18% responses chosen was Misleading Product Information.

- **Have you ever received a damaged or defective product from an online order?**

The pie chart reveals that the majority of respondents (64%) either never or rarely received damaged or defective products from online orders. However, a notable 30% did experience this issue occasionally or frequently. Additionally, a small percentage (6%) cited poor customer service as a factor contributing to receiving damaged or defective products.

- **Have you ever felt that the product images or descriptions on an e-commerce website were misleading or inaccurate?**

The survey results indicate that a significant portion of respondents (60%) either never or rarely encountered misleading or inaccurate product images or descriptions on e-commerce websites. However, a considerable number of respondents (34%) did experience such issues occasionally or frequently. A small percentage (6%) cited poor customer service as a factor contributing to misleading or inaccurate product information.

- **To address payment-related issues, which solution would you prefer?**

Out Of the 50 people surveyed, the largest segment coloured yellow (38%) say "Transparent information about payment security measures" , then followed by the second largest segments coloured red(24%) respond on "Option to use digital wallets or mobile payments" , followed by the third segment coloured in blue(24%) say "More secure payment gateways and encryption" and the smallest part collared green(14%) responded for "Additional authentication".

- **After experiencing delays in product delivery, how likely are you to make another purchase from the same e-commerce platform?**

The survey results indicate that shipment delays had a varying impact on respondents' likelihood of making future purchases from the same platform. While a sizeable portion (44%) had a neutral stance, a combined 44% were either very likely or likely to purchase again despite delays. Conversely, a smaller percentage (12%) were unlikely to return, with an unspecified few being very unlikely to revisit the platform if faced with delivery delays.

- **What improvement would you like to see in the product delivery process?**

The largest segment (44%) indicates a desire for "Better tracking" capabilities during delivery. The two equally sized segments (26% each) represent preferences for "Faster shipping" and "Improved Packaging". The smallest segment covers other (2% each).

- **Which aspect of the order fulfilment process needs the most improvement?**

The largest segment, at 42%, indicates that "Logistics and Transportation is considered the area needing the greatest improvement according to the highest number of respondents. The second-largest segment, at 34%, shows that a significant portion of participants believe "Inventory Management" needs to be enhanced for better order fulfillment. The smallest segment, at 24%, represents those who think "Warehouse Operation" is the aspect requiring the most improvement in the order fulfillment process.

V. CONCLUSION

Supply chain optimization plays a crucial role in e-commerce operations by increasing operational efficiency, reducing costs, and enhancing customer satisfaction. By leveraging data analytics, optimization techniques, and technology, e-commerce companies can streamline processes like demand forecasting, inventory management, warehouse optimization, transportation optimization, supplier management, and reverse logistics.

However, effective supply chain optimization requires addressing challenges such as data management and integration, changing customer expectations, sustainability considerations, and talent development. Adopting appropriate technologies, using a data-driven approach, and continuously adapting to market dynamics and customer needs are essential.

The results of a survey conducted with 50 participants regarding their online shopping experiences and preferences. The charts cover various aspects, including age and gender demographics, preferred e-commerce platforms, issues faced during online shopping (such as product availability, delivery delays, misleading information, and payment-related concerns), experiences with damaged or defective products, and desired improvements in the order fulfilment process. The data reveals insights into the challenges faced by online shoppers and their expectations for better customer service, transparent information, secure payment options, improved logistics, inventory management, and overall enhancement of the order fulfilment process.

REFERENCES

1. https://docs.google.com/forms/d/e/1FAIpQLScAGfoQYyBvYVWzch8jXF2kzPqEuXcH6H9zY48z_9zvmCvESQ/viewform?usp=sf_link
2. https://www.ibm.com/topics/supply-chain-optimization
3. https://www.infosysbpm.com/blogs/supply-chain/e-commerce-supply-chain-optimization.html
4. https://www.bigcommerce.com/articles/ecommerce/ecommerce-trends/
5. https://wareiq.com/resources/blogs/e-commerce-delivery-partners/
6. https://www.sclogistics.com/ecommerce-supply-chain-optimization/
7. https://www.researchgate.net/publication/254455737_Method_of_supply_chain_optimization_in_E-commerce

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