

Emerging Trends in Logistics and Supply Chain Management

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ABSTRACT

The terms of “logistics” and “supply chain” are usually comparative in academy and industry, since both of them are closely relevant to the product circulation during its whole life cycle, and both have been regarded as the central unit of competitive analysis of model management science.

The advanced translation of the term logistics has its beginning in the military, where it was utilized to depict the exercises identified with the obtainment of ammo, and fundamental supplies for troops situated at the front. Logistics not just incorporates exercises identified with the physical developments of the merchandise yet in addition oversees association with providers and clients. Anyway Logistic administration is a method whereby the requirements of clients are fulfilled through in corporation and coordination of the inventory network. Supply chain Management, as of late, has developed as the premise in numerous enterprises (little or expansive) for making the coordinated connection amongst providers and clients. The principle target of the paper is to decide the different innovation utilized in Logistics and Supply chain management including data innovation, correspondence innovation and programmed ID innovation. Additionally different developments in innovation have made the assignment less demanding and quicker other than being less relentless. With a specific end goal to react to aggressive weights organizations need to know and comprehend the new patterns in logistics and SCM. This paper centers the rising patterns of Logistics and SCM in current situation, and it gives more extensive consciousness of Logistics and SCM ideas.

1. Introduction

The gathering of calculated administration characterizes Logistics as "that piece of inventory network process that designs, actualizes, and controls the proficient, successful, forward and invert stream and capacity of products, benefits, and related data between the purpose of source and the purpose of utilization with a specific end goal to meet client prerequisite". In conventional dialect the same can be characterized as right item, at the opportune place, in correct time, and in right condition. The idea of Supply Chain is anything but another idea around the world, it has expanded consistently since 1980, when organizations started to make their community oriented associations with providers, makers and sellers. In Indian Context, it is a still at beginning stage. Supply chain management traverses all development and capacity of crude materials, Work-in process stock, and completed merchandise from purpose of inception to purpose of utilization. The rising new innovations are making vital open doors for the associations to construct upper hands in different useful territories of administration including logistics and production network administration. Anyway the level of progress relies upon the choice of the correct innovation for the application, accessibility of legitimate hierarchical foundation, culture and administration strategies. In Logistics, data, correspondence and computerization innovations has considerably expanded speed of recognizable proof, information gathering, preparing, examination and transmission, with abnormal state of precision and dependability. Innovation is a way to upgrade business aggressiveness and execution. It assumes a noteworthy part in

achievement of inventory network by improving the general viability and proficiency of the Logistics framework. Keeping in mind the end goal to confront various difficulties and to be at the cutting edge, organizations are required to refresh their abilities and present new advancements in their Logistics and Supply Chain management

2. Objectives

- To Understand the Concept of Logistics and Supply Chain Management.
- To decide the different innovation utilized in Logistics and Supply Chain Management
- To know the trends in Logistics and Supply Chain Management.
- To know the present status of Logistics and Supply Chain Management in India.

3. Concept of Logistics and SCM

3.1 Logistics:

The idea of logistics centers around the item stream, which is the importance by which this word has been interpreted in Chinese. It additionally puts accentuation on the exercises of taking care of item, which incorporate the capacity, transportation, conveyance, and bundling and handling. In spite of the fact that business logistics includes numerous exercises, the customary research of tasks administration on logistics fundamentally identifies with the fields of logistics office, transportation, and stock arranging. The minimization of the

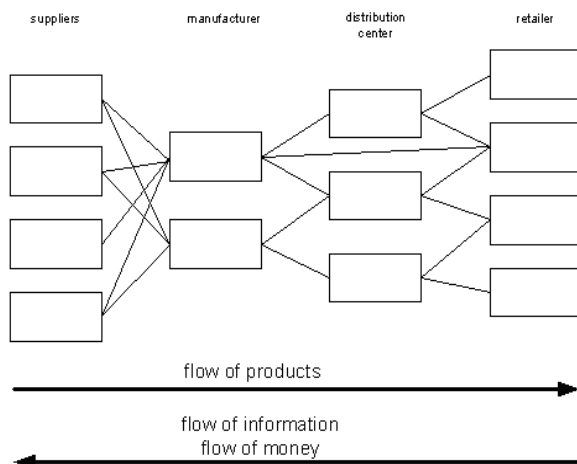
utilization of assets is a typical inspiration in logistics for import and fare.

For instance, Council of Logistics Management (now renamed as Council of Supply Chain Management Professionals) alluded to logistics as “the process of planning, implementing, and controlling the efficient, effective flow and storage of goods, services, and related information from point of origin to point of consumption for the purpose of conforming to customer requirements,” which incorporates inbound, outbound, inside, and outside developments and return of materials for ecological purposes.

3.2 Supply Chain Management:

“Supply chain management is defined as the systemic, strategic coordination of the traditional business functions and the tactics across these business functions within a particular company and across businesses within the supply chain, for the purposes of improving the long-term performance of the individual companies and the supply chain as a whole.”

SCM NETWORK



4. Innovations in Logistics and SCM

4.1 Vendor Management Inventory

Vendor-managed inventory (VMI) is one of the most widely discussed partnering initiatives for improving multi-firm supply chain efficiency. Also known as continuous replenishment or supplier-managed inventory, it was popularized in the late 1980's by Wal-Mart and Procter & Gamble. VMI is a distribution channel operating system whereby the inventory at the distributor/retailer is monitored and managed by the manufacturer vendor. It is a family of business model in which buyer of a product provides certain information to the supplier of that product and the supplier takes full responsibility for maintaining an agreed inventory of the material, usually at the buyer's consumption location. It includes several activities including determining appropriate order quantities, managing proper product mixes.

4.2 Bar Coding

Bar coding is a sequence of parallel lines of different thickness with spaces in between. These bars are nothing but the items of information in the codified form, which can be read

with the help of a scanner. Historically bar codes was first used in a supermarkets in USA in 1952. The information printed in bar code include, country code, manufacturer name, product details, date of manufacture, material content etc. These details are required at user end for inventory management. The bar codes are used in diverse industries such as retail, pharmaceutical, consumer goods, electronics, automobiles etc.



4.3 Radio Frequency Identification (RFID)

RFID first appeared in tracking and access applications during 1980. RFID-based systems allows for non contact reading and are effective in manufacturing and other hostile environment where bar codes could not survive. These are used as an alternative to Barcodes to communicate the inventory data to the reader via radio waves. RFID wirelessly exchanges information between a tagged object and a reader. The reason this technology is being increasingly used is due to its extraordinary ability to track almost anything and know where it is at any step of the distribution process. The end result, companies become more efficient increase sales and reduce costs.

4.4 Collaborative Planning Forecasting and Replenishment (CPFR)

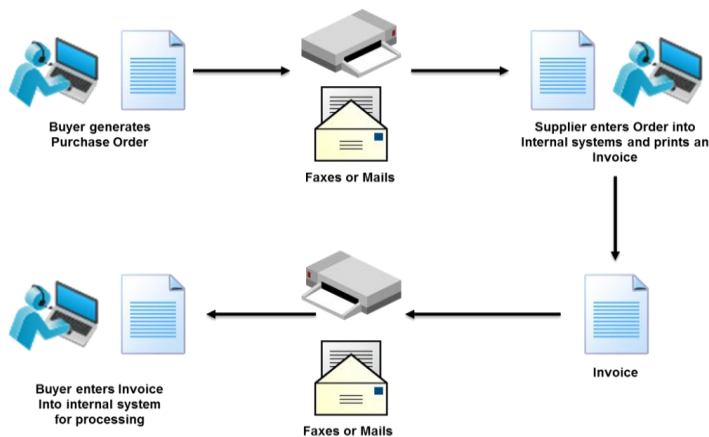
CPFR can be defined as a collaboration where two or more parties in the supply chain jointly plan a number of promotional activities and work on synchronized forecasts, on the basis of which production and replenishment processes are determined. The term CPFR was first introduced in 1995, in connection with a pilot project between Wal-Mart. Warner-Lambert, Benchmarking partners, SAP and Manugistics The objective of CPFR is to better align supply and demand through trading partner data interchange exception based management and structured collaboration in order to eliminate issues and constraints in fulfilling consumer expectations.

4.5 Cross Docking

Cross docking is a system in which the vendor's ship merchandise to a distribution centres in pre packed quantities required by each store. The merchandise is delivered to one side of the distribution centre; the floor ready merchandise is then transferred to the other side of distribution centre for delivery to a store. Cross docking is a process by which products are aptly room the inbound dock to the outbound dock, avoiding the need to store and prepare order replenishment.

4.6 Electronic Data Interchange

It is the structured transmission of data between organizations by electronic means. It is used to transfer electronic documents or business data from one computer system to another computer system. It also be called as electronic document interchange. It is the exchange of business information through standard interfaces by using computers. It interoperated as transmission of business data between organizations in a computerized format that does not require the rekeying information.



4.7 Web Based Tracking

Logistics service providers operating in India are extending the services of web-based tracking of consignments to their clients. AFL, Fed-Ex, Blue Dart and others are providing the status report of the consignment to their clients. The clients can download this report by connecting through the Internet. This information helps in planning the dispatch schedule and also making follow up with clients for payment collections.

4.8 Automated Guided Vehicle System (AGVS)

The system makes use of magnetic or optical guidance system. The magnetic system uses energized wire laid on the warehouse floor for guiding the material handling equipment. In AGVS operator is eliminated. The new generation AVGS are guided with video and do not follow the fixed path. AGVS can perform all the material handling operation without any human involvement. Robot coupled with AGVS is used to pick up exact material requirement for a customer order.

4.9 Enterprise Resource Planning (ERP)

ERP is integrated software, encompassing all the business operations and bring about significant change in the way people work. ERP is a business solution that addresses to certain identified business issues. ERP is very expensive and complex exercise which require sufficient amount of planning. In India major ERP in use is SAP, Oracle which has been developed by foreign companies to suit the business environment prevailing in those countries. However, some Indian companies like Ramco Systems developed ERP to suit Indian business environment.

5. Impact of Technology on Functions of Logistics and Supply Chain Management

- **Procurement:** In the initial period the procurement process in the organization was done by a separate department on the basis of least price from the supplier. In the next generation with the advent of IT the e-procurement is done where online auctions are conducted and strategic relations are forged with good suppliers by long term contracts and relationships.
- **Planning:** In the initial period before the advent of IT, production and distribution planning was done based on historical data. There was not much linkage with business planning and production changed with varying demand. However with the advent of IT planning approach include **collaborative planning, forecasting and replenishment (CPRF)**. It involves long term commitment to information sharing for collaborative planning purposes like joint business planning (SKUs, brands) and financial planning.(sales, inventory, safety stock, pricing, fill rate).
- **Web-based collaboration:** The web-based collaboration application enables to share and collaborate with supply chain partners on forecasts, replenishment and promotions plans to deliver the highest level of customer service and profitability.
- **Scheduling** –In the initial period the scheduling was done to improve asset utilization and reduce manufacturing costs. However with the advent of IT strong linkage is established between supply chain partners and customers. As such scheduling is done to serve the customer at the right time.
- **Inventory management** –In the initial period every department tried to minimize the inventory by transferring it to the next level of the supply chain. Thus the total inventory cost in the supply chain was high as there was no transparency of the inventory held in the supply chain. However with the advent of IT, techniques such as **collaborative replenishment and vendor managed inventory** were followed where manufacturer takes the responsibility to replenish the distributor inventory, resulting in inventory control and access to demand information.
- **Logistics and warehouse management** – In the initial period logistics was more manual intensive and there was no visibility of the movement of goods. However due to the advent of IT and technologies like RFID and GPS complete visibility in movement of goods is assured resulting into efficient logistic and warehouse management.
- **Customer service** –In the initial period customer service was only **reactive**. The complaints or information was difficult to reach the concerned department and was time consuming process. However with the advent of IT, customer service is more **proactive** as it reaches the customer through internet and takes continuous feedback from them.

6. Current Status of Logistics and Supply Chain Management in India

The country's logistics industry which is worth around USD 160 billion is likely to touch USD 215 billion in the next two years with the implementation of GST. "With the implementation of GST, the Indian logistics market is expected to reach about USD 215 billion in 2020, growing at a CAGR of 10.5 per cent. The Indian logistics industry which provides employment to more than 22 million people has grown at a compound annual growth rate (CAGR) of 7.8 per cent during the last five years. The Global Ranking of the World Bank's 2016 Logistics Performance Index shows that India jumped to 35th rank in 2016 from 54th rank in 2014 in terms of overall logistics performance.

The introduction of the Goods and Services Tax (GST), liberalizing foreign direct investment (FDI) rules, and increased government spending has helped spur growth in the sector. India's aspiration to become a global manufacturing powerhouse and the government spotlight on 'Make in India' also compels nationwide supply chain reform, 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 (Rs 130 billion) in investments from domestic and foreign channels. Plans to improve regional connectivity through road,

rail, and inland waterways are already ongoing. In fact, India's 2018 budget saw the highest fiscal allocation for infrastructure spend, at about US\$95 billion (Rs 6 trillion).

7. Conclusions

"Technology" is vehicle to enhance supply chain competitiveness and performance by enhancing the overall effectiveness and efficiency of logistics system. Hence choosing the right technology for various logistics activities or sub-processes is very crucial to any business to gain competitive advantage in today's competitive market. With the focus on customer service, companies have moved away for a supply driven business towards a demand driven business. Companies are also constantly searching for ways to reduce inventory and holding cost. The increase in speed has forced companies to search for ways to reduce product cycle time and move product quickly and cost effectively. With this the concept of Supply chain has emerged to be one of the important sectors across worldwide. It is so considered because of the time utility factor concerned with it. Supply Chain Management with I.T. services has completely changed the outlook of how companies manage their supply Chain and how they maintain their collaborative relationships with their suppliers and satisfy the needs of their customers.

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