Role of Logistic Management in Supply Chain Management and Distribution

Dr. Mahesh U. Daru

Associate Professor & HOD, Accountancy, Smt. C.D.J. Rofel Arts &

I.S.R.A.Rofel Commerce College, Vapi (Gujarat) India.

Abstract

Logistics is a critical enabler of connecting supply and demand resulting in a dynamic and a growing economy. With an estimated GDP of Rs.113.2 trillion in 2013-14 and over a 13 per cent spend on logistics, the Indian logistics industry is worth over Rs.14 trillion. (http://www.iimahd.ernet.in/) Delivering logistics solutions is getting increasingly sophisticated both due to customer requirements and supply side innovations especially driven by information technology. Challenges such as cost versus value focus, asset versus non asset-based positioning, business scope and scale, and service level and quality management are critical to the competitive advantage of logistics service providers. This paper outlines how logistic management helped organizations to reduce costs in their supply chains and supply networks. It is related how industries and forms are benefitted through supply chain management and e-business.

Keywords: Logistic Management, Supply Chain Management, Channels of distribution, e- logistic management

Introduction

Logistics is defined as the broad range of activities concerned with effective and efficient movement of semi-finished or finished goods from one business to another and from manufacturers/distributors/retailers to the end consumers. The activities include freight transportation, warehousing, material handling, protective packaging, inventory control; order processing, marketing, forecasting, and customer service. The logistics market is enormous. It amounts to 10-15% of every product produced and is estimated to be at US$ 2 Trillion worldwide.

Logistics management tries to have the “right product”, in the “right quantity”, at the “right place”, at the “right time”, with the “right cost” Logistics management has two basic targets: Quality of Service and Low Cost. According to the Council of Logistics Management (CLM) “Logistics is the process of planning, implementing and controlling the efficient and effective flow of goods, services and related information from point of origin to point of consumption in order to meet customer requirements”.

Therefore we can say that Logistics management means = Supply + Materials management + Distribution

Supply Chain Management (SCM) is the process of planning, implementing, and controlling the operations of the supply chain as efficiently as possible. A retail supply chain may pose a few challenges like “linking the consumer in the supply chain planning process, managing product life cycles, promotional planning, planning for seasonal products, determining cost-effective supply channels, forecasting (CPFR) and scheduling in a volatile economic environment and many more”. (Wipro Technologies, 2007).

The process of Supply Chain Management includes the movement and storage of all raw materials, current inventory, and the finished commodities from point-of-origin to point-of-consumption. The Supply Chain Management process embraces all related aspects including planning and management of all activities involved in sourcing, procurement, conversion, and logistics management activities. It also involves effective integration of supply and demand management, both within and between companies.

The process of Supply Chain Management is all-inclusive, comprehensive, complex and needs to address issues like: Distribution Strategy: Centralized versus decentralized, direct shipment, Cross docking, pull or push strategies, third party logistics; Distribution Network Configuration: Supplier location, number of suppliers, production facilities, distribution centers, warehouses and customers; Inventory

Management; Cash-Flow and streamlined information process i.e. integration of systems and processes through the supply chain which includes information like demand signals, forecasts, inventory and transportation etc to be shared. (Wikipedia, 2007).

In order to stay within the league of competitors and successfully compete in the global market, it is important for the organizations that they rely on "effective" supply chains and networks. In simple words, distribution can be described as a commercial activity of transporting and selling goods from a producer to a consumer. A distributor actually serves as a middle man between the manufacturer and retailer. Today, a distribution channel may constitute one or all of the following:

- Direct selling, via email or internet.
- An agent who sells on behalf of the producer
- A distributor (or wholesaler)who sells to the retailer
- A retailer who sells goods to its customers

Objectives of Logistics Management

1. **Rapid Response:** Rapid response is concerned with a firm's ability to satisfy customer's requirement in a timely manner. Instead of stocking the goods and supplying on demand, orders are executed on shipment-to-shipment basis. Here IT helps to postpone the logistical operations to the latest possible time and then execute rapid delivery as when needed by customer.
2. **Minimum Variance:** Variance is any unexpected event that disrupts system. Logistical operations are disrupted by events like delays in order receipt, disruption in manufacturing, goods damaged at customer's location and delivery to an incorrect location etc. Traditional solution to deal with variance was to keep safety stock or use high cost transportation. Such practices were expensive and risky and thus have been replaced by information technology to achieve positive logistics control.
3. **Minimum Inventory:** The objective of minimum inventory involves asset commitment and inventory turnover. Asset commitment is the financial value of inventory developed throughout the logical system and inventory turnover is the rate of inventory usage over time. The objective is to reduce the inventory without sacrificing customer satisfaction.
4. **Movement Consolidation:** One of the most significant logistical costs is transportation. Transportation cost depends on type of product, size of shipment and distance. Movement consolidation means grouping small shipments together in order to reduce transportation cost.

5. **Quality Improvement:** Logistics is a prime part of developing and maintaining continuous TQM improvement. If the quality of product fails, logistics will have to ship the product out of customer's premises and repeat the logistical function again. This adds to cost and customer dissatisfaction.
6. **Life-Cycle Support:** Life cycle support is also called cradle-to-cradle logistical support. It means going beyond reverse logistics and recycling to include the possibility of after sale services, product recalls and product disposal. This means that firms must consider how to make a product and its package (cradle) and the how to remake and reuse them (to cradle). E.g. Cold drink industries use their glass bottle again and again whereas the cans are reused in making pf paper dishes.

Types of Logistics

1. Reverse Logistics

Reverse logistics is also known as Product Recall. It may be defined as a process of moving goods from their place of use, back to their place of manufacture for re-processing, refilling, repair, and recycling or waste disposal.

Drivers in Reverse Logistics

The success of reverse logistics depends upon the efficiency of following subsystems: Product Location: For product recall it is necessary to identify the product location in the physical distribution system of the firm. It is difficult in case of consumer goods but easier in case of industrial goods.

- Product Collection System: After the product location is identified, product collection is to be done through company's field force or third party.
- Recycling / Disposal Centers: This may be company's plant, warehouse or any other location. Called back products must be inspected before recycling or disposal etc.
- Documentation System: Proper documents should be maintained at each level, this would help in tracing the product location.

2.) Inbound Logistics

- All the activities related to the material movement till the dispatch of the products out of the factory gate are called as inbound logistics activities.
- Creation of value in the products depends upon availability of inputs on time. Making available these inputs on time at minimum cost is the essence of Inbound Logistics.

- Activities of a procurement performance cycle come under the scope of Inbound Logistics. They are transportation during procurement operation, storage, handling and overall management of inventory of inputs.

3.) Outbound Logistics All the activities in which the value added goods are to be made available in the market for customers are called as outbound logistics activities.

- Success of the firm depends upon the supply of products to the customer on time. Supplying the products of firm at marketplace at minimum cost is the essence of Outbound Logistics.
- Activities of distribution performance cycle come under the scope of Outbound Logistics. They are order management, transportation, warehousing, packaging, handling etc.

4.) Third-Party Logistics

In order to keep the costs of inbound and outbound logistics activities under control, an outside agency appointed to perform these logistics functions is called "Third Party Logistics".

5.) Forth-Party Logistics (4PL)

Forth Party Logistics is a complete outsourcing of manufacturing and logistics functions including selection of Third Party service provider.

It is difficult to define E-logistics comprehensively because the potential impact of e-business on logistics and supply chain management is not yet fully understood. One possible definition is that **E-logistics**

E-logistics simply mean processes necessary to transfer the goods sold over the Internet to the customers (Auramo et al., 2001). Another more sophisticated aspect is that E-logistics are a wide-ranging topic related to supply chain integration that has the effect of eliminating intermediaries (such as wholesalers or retailers) and also fosters the emergence of new players like logisticians, whose role is to adapt traditional logistics chains to take into account the requirements of e-business.If we look wider, E-logistics mean doing e-business inside of the TLC between companies (B2B) and outside of it, between the TLC and customers (B2C) over the Internet. This whole integration of e-business ensures that the TLC from outside looks like one company, even though it is composed of many. If we want to implement E-logistic philosophy in all companies inside the TLC, we must renovate their business processes. Renovated processes are the basis for implementing E-logistics through logistic processes and necessary for the results that will show improvement through the added value chain.

E-logistics Tools	Description
e-ordering	Via Web, e-market, auction, collaborative system, etc.
EDI Requirements	Optional – dependent on contract requirement
Activated order/Shipment number	Usually an imperative requirement. Various Generators
Activation of Logistics services - order/pick/pack -despatch -transport, etc.	Activation of a specific set or single operation from warehouse, transport operator, delivery agent etc through shipper, broker, customs agent, and/or sub-contractor or own fleet
Barcode or RFID scan	Optional – dependent on requirement
Track and Trace capability	Optional – dependent on requirement
Call Centre CRM ability	Optional – dependent on requirement
Automatic Logistic Performance calculator	A rare but powerful tool. Can save many hours per week in evaluating if functionality is available.
Client Accounting	Commonly an e-market and portal offering,
Quarterly reporting	Specified financials/service performance or customers, etc.

Global logistics

The expansion of the global marketplace puts the concept of global logistics into the limelight. Logistics experts must now manage all of the aforementioned logistics activities within a world-wide arena spanning a multitude of countries, languages, cultures, governments, and regulations. Along with this expansion of the marketplace comes the need for global channel intermediaries. Today's global logistics manager would be familiar with the role of each of the following:

- Foreign freight forwarders—handlers of a myriad of foreign freight services: rate quotes, vessel chartering, booking of vessel space, handling of documentation and cargo insurance, tracing and expediting, arranging inland transportation and providing translation services.
- Export management companies—suppliers of expertise to those wishing to sell products overseas but lacking the necessary resources.
- Export trading companies—locaters of overseas buyers. They also handle export documentation, transportation and the meeting of foreign government requirements.

- Customs house brokers—overseers of the movement of goods through customs. They also ensure that accompanying documents are complete and accurate.
- Ship brokers—sales representatives for ship owners and purchasing representatives for the shipper.
- Ship agents—local representative of the ship operator that handles the ship's arrival, berthing, clearance, loading and unloading.
- Export packers—suppliers of export packaging services.
- Port authorities—owner and operator of the port. They provide wharf, dock, and other terminal facilities at port locations.

Current Scenario in Logistics Management

Liberalization opens our door to competition. Global business has long supply & distribution lines. Today's customers are aware, demanding and less brand loyal. Due to competition, Product life cycles are shrinking and our markets are shifting from sellers to buyers. Many consumer products are moving into commodities market. In India, large distances separate production and consumption centers. Essential commodities have to travel from Food Corporation Warehouses to consumers through PDS. Still Logistics performance in India has not been impressive. Fruits and vegetables are grown at various places but do not enjoy access to market. Logistics functions are same domestically and globally but differ in four D's i.e. distance, documents, diversity in culture and demand of customer. In the global logistics distances are longer, documentation is more extensive, and customer demand varies to satisfy cultural differences within both, countries and regions. Developing strategies to respond to the 4 D environment is the global challenge for logistics management.

- **Economic Growth**: After WW-II there was a growth in industrial sector of developed countries and their manufacturing and logistics productivity increased. This forces the firm to expand their marketing into developing nations. Such expansion requires the integration of global manufacturing with marketing through logistics.
- Supply Chain Perspective: Firms traditionally sought logistical control as many essential activities as possible internally, which resulted in private warehouses and transportation. Such privatization increased the capital and assets to support logistics operations resulting in decline of Return on Investment and hence the concept of outsourcing and supply chain emerged during 1980s.
- **Regionalization:** Traditionally trade and transportation across the political borders of countries requires political formalities, which adds to the logistics cost without any value addition to the

consumer. Regionalization in the form of trade associations such as EU, NAFTA and SAARC etc. removed such barriers and facilitates global logistics.

- **Technology:** Mass communication and information technology exposed international consumers to foreign products, thus stimulating convergence of global needs and preferences. This promotes global marketing and global logistics.
- **Transportation** Deregulation: Initially there have been restrictions for international transportation ownership and operating rights e.g. foreign carriers could not operate domestically, steamship lines could not own land based transport like motor or rail carriers etc. but such restrictions have been removed in most of the countries.

Barriers to Global Logistics

- **Marketing Barriers**: This includes (i) entry restrictions by placing legal or physical barriers on importing (ii) poor information regarding market size, demographics and competition (iii) pricing fluctuation and tariff barriers.
- **Competition:** Different rules in different countries concerning competitive governance also serve as global logistics barriers.
- **Financial Barriers**: This includes (i) difficulties in forecasting in the global environment (ii) institutional infrastructure barriers result from differences in services offered by banks, insurance firms, legal counselors etc.
- **Distribution Channels**: Lack of infrastructural standardization such as differences in transportation and material handling equipment, warehouse and port facilities, communication system etc. also serves as global logistics barriers.

Conclusion

The growing importance of logistics as a coordinating mechanism among multiple partners of the supply chain and. ultimately, as a source of value and competitive advantage. As competition shifts from head-to-head competition between firms to competition between supply chains, competitive success will depend increasingly on the ability to coordinate and integrate the production activities at geographically dispersed and organizationally distinct locations. The “new” logistics or c-logistics will play a fundamentally important role in the future of businesses.

References

- Christopher, M.,1998, "Logistic and supply chain management", Financial Time Prentice Hall, 2nd ed, Great Britain
- Coyle, John J., Edward J. Bardi, and C. John Langley, Jr. (2003) The Management of Business Logistics: A Supply Chain Perspective. Mason, OH: South-Western Thomson Learning,
- essays.tripod.com/e_logistics_distribution_and_supply_chain_management.html
- http://university- essays.tripod.com/e_logistics_distribution_and_supply_chain_management.html
- http://www.bms.co.in/elements-of-logistics-management-notes/
- http://www.bms.co.in/explain-the-objectives-of-logistics/
- http://www.docstoc.com/docs/13899702/Logistics-project
- http://www.researchgate.net/profile/Stephan_Wagner7/publication/263312500_Getting_Innovation_from_Suppliers/links/53e333570cf2b9d0d8330026.pdf
- http://www.researchgate.net/publication/234773303_E-logistics_slovenian_transport_logistics_cluster_creation
- http://www.researchgate.net/publication/239918915_Research_Agenda_for_E-business_Logistics_Supply_Network_View
- http://www.slideshare.net/BabasabPatil/a-project-report-on-domestic-transportation-in-india-at-expeditors-benglore
- http://www.slideshare.net/vskills/certified-international-logistics-professional-samplematerial
- http://www.ukessays.com/essays/information-technology/examining-the-mechanism-of-e-logistics-information-technology-essay.php
- http://www.ukessays.com/essays/information-technology/examining-the-mechanism-of-e-logistics-information-technology-essay.php
- https://www.scribd.com/doc/3594594/1-LOGISTICS-OVERVIEW-A
- https://www.scribd.com/doc/76150335/Elements-of-Logistics-Management-Notes
- Lambert, D.M., Stock, J.R. and Ellram, L.M., 1998, "Fundamentals of Logistics Management", Boston, MA: Irwin/McGraw-Hill, Chapter 14
- Rusthon, A., & Oxley, J., & Croucher, P., (2000) ."The handbook of logistics and distribution management", second edition, Kogan Page, 2000
- SCOR Version 5.0 (2001) Handbook, Supply Chain Council, Inc. 2001

- Sevening, C., "Methodboken", Lorentz Förlag, Staffanstorp 1996 Svensson, G., (2002) "A conceptual framework of vulnerability in firms' inbound and outbound logistics flows" International Journal of Physical Distribution & Logistics Management, Vol.32 No.2, 2002,pp.110-134
- Wikipedia: The Free Encyclopedia (2007) "Supply Chain Management" Available from: http://en.wikipedia.org/wiki/ Supply_chain_management
- Wipro Technologies (2007) "Distribution, Supply Chain Management" Available from: http://wipro.org/webpages/itservices /industries/distribution/scm.htm
- Yadav, Pooja, Zhang, Liang-Jie, Chang, Henry research IBM (2007) "ELPIF: An E-Logistics Processes Integration Framework Based on Web Services" Available from: http://www.research.ibm.com/people /b/bth/OOWS2001/zhang.pdf. http://university-