UNIT 1

Logistics and System Concept, Objectives and Role of Logistics



1.0 Unit Overview & Description

The unit is an attempt to give idea how logistics works as a system. It also helps to understand about the different elements in logistics system. It also provide an insight about objective and role of logistics in supply chain. Third party and fourth party logistics along with career and growth in logistics and supply chain is expressed in brief to tell its utility.

Knowledge and Skill Outcomes

The Unit is expected to impart the following knowledge and skill:

- Understand the concept of logistics as a system.
- Exposure to different elements of logistics system.
- Assist to understand the objectives of logistics management & its role in supply chain.
- Understanding to know third party logistics and fourth party logistics.
- Provides exposures about career & growth in supply chain area.

Resource Material

1. Coyle, John J., Edward J. Bardi, and C. John Langley, Jr., The Management of Business Logistics: A Supply Chain Perspective, Mason OH: South-Western Thomson Learning (2013).
2. Donald J. Bowersox and David J. Closs, Logistical Management: The Integrated Supply Chain Process, Tata Mc Graw-Hill Publishing Company Limited, New Delhi (2004).
3. Sople, Vinod V., Logistics Management: The Supply Chain Imperative, Pearson, New Delhi (2010).

Learning Outcomes

Unit I	Logistics and System Concept, Objectives and Role of Logistics	Outcomes
1.1	Introduction.	Explain logistics with certain citations like Mumbai dabbawala.
1.2	Logistics: A system concept.	Discuss logistics as system.
1.3	Logistics functions.	Write down the different elements of logistics.
1.4	Logistics management - Objectives.	Discuss the important objectives of logistics management.
1.5	Role of logistics in supply chain.	What is the role of logistics in supply chain.
1.6	TCI - Indian road freight index.	Understand outsourcing.
1.7	Catalyst for outsourcing trends.	What are the catalyst for outsourcing.
1.8	Benefits of logistics outsourcing.	Discuss benefits of logistics.
1.9	Third party logistics.	Understand 3 PL.
1.10	Fourth party logistics.	Understand 4 PL.
1.11	Career and growth in logistics and supply chain.	Different career options of logistics and supply chain.



Assessment Plan

Unit I	Topic	Assessment Method	Time Plan	Remarks
1.1	Introduction	Exercise: Question & Answer, T & F		
1.2 and 1.3	Logistics: A system concept Logistic functions	Exercise: T & F, Question & Answer, Match the following		
1.4	Logistics management - objectives	Exercise: T & F		
1.5, 1.6, 1.7, 1.8, 1.9, and 1.10	Role of logistics in the supply chain, TCI - Indian road freight index. Catalysts for outsourcing trends, Benefits of logistic outsourcing, 3 PL and 4 PL	Exercise: Question & Answer, T & F		
1.11	Career & growth in logistics & supply chain.	Exercise: T & F		

1.1 Introduction

Logistics Defined

The word Logistics traces its origin to the Greek word logistikos and the Latin word logisticus, meaning the science of computing and calculating. In ancient times, the term was frequently used in connection with the art of moving armies and supplies of food and armaments to the war front. The use of this word can be traced back to the seventeenth century in the French army. But during World War II, logistics gained importance in army operations as a term referencing the movement of supplies, men and equipment across the border. The US army officially used the word "logistics" after World War II. Today logistics has acquired a wider meaning and is used in business to refer to the movement of raw materials from suppliers to the manufacturer and, finally, the movement of finished goods to the consumers.

Logistics is also referred to as a physical distribution. Philip Kotler defines logistics as "Planning, implementing, and controlling the physical flows of materials and finished goods from point of origin to point of use to meet the customers need at a profit." The American Council of Logistics Management defines logistics as "the process of planning, implementing and controlling the efficient, cost effective flow and storage of raw materials, in process inventory, finished goods and related information from point of origin to point of consumption for the purpose of conforming to customers requirements."

Logic in Logistics for 30 Minutes Pizza

Figure 1.1: Pizza from the Angle of Logistics

Ideally, the time taken for registering the order should be one minute. After that the pizza goes to the guy in the "make line". He takes two minutes, and then oven time is five minutes. When the pizza comes out of the oven it is inspected. One minute goes into quality check and packing. Another minute goes in checking the route and confirming the order one last time.

The moment he is leaving, the delivery boy shouts the out-of-the-door time, which is normally between 10 and 12 minutes. Then everybody yells out "drive safe". When he returns he punches the time in. At the end of the day the average delivery time for all his orders is checked. This helps the manager figure out which orders were not delivered in time. The next day, the store manager calls each one of those whose orders got delayed and apologizes.

The essence is process sequencing, just-in-time inventory availability, and time management for the success in this service operation logistics.

Review Question

1. Discuss the definition of logistics as given by American Council of logistics management.



Dabbawalas of Mumbai


Figure 1.2: Dabbawalas in Action

Dabbawalas of Mumbai offer a reliable fool proof logistics system of delivering lunch boxes to over 200,000 office employee every day without mix up of having the wrong tiffin going to the wrong office or arriving late, irrespective of conditions such as rains, strikes, and scorching heat. A team of around 5000 men and women, mostly illiterate, operate in assigned areas in Mumbai, each handling 25-30 dabbas, which is the optimum lot size as more could create confusion and affect promptness, which will lead to customer dissatisfaction. The dabbas are collected from the houses and put in tiffing racks at a network of 96 railway stations all over Mumbai to load into the train for further movement toward delivery points. They use a colour code system on the dabbas to identify the collection and delivery points. After the lunch hour, the system operates in reverse direction,

again displaying accuracy with collection and quality of delivery closer to Six Sigma. This system gives a much cheaper alternative to office workers than having their food in restaurants and food joints. With this logistics system, 400,000 transactions are done daily with the precision of Six Sigma accuracy.

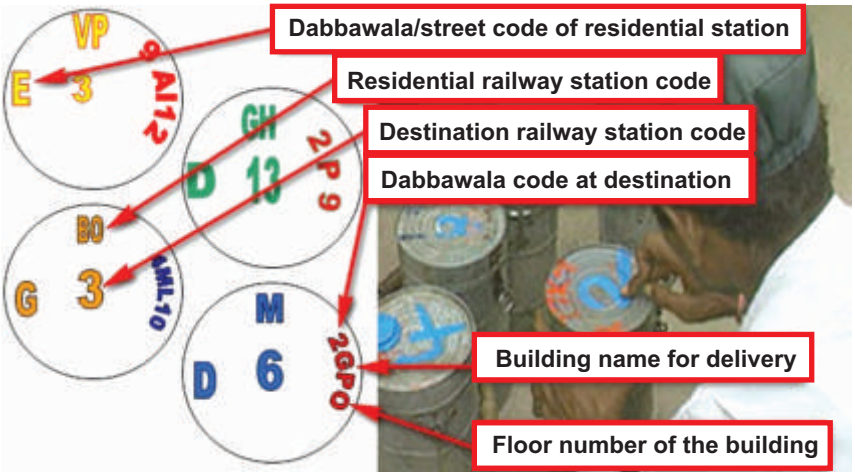

Figure 1.3: Code System of Dabbas

Laundry Service in Five Star Hotels

Figure 1.4: Laundry Service in Five Star Hotels

The laundry service in a five star hotel is a very simple service operation that does not use any sophisticated software tools. At 10 a.m. the housekeeping department collects the laundry from 210 rooms of a 300 room hotel operating at 70 percent occupancy. The laundry is divided into three parts; staff uniforms, room laundry (bed sheets, pillow covers) and guest clothes. Special attention is given to the guest's clothes for same day or express delivery. Every single piece of clothing is allotted an identification code, and the informing is punched into the computer for tracking, processing, and final delivery. The entire laundry is handed over to the laundry service supplier, who collects the laundry in the morning and delivers to the house keeping department in the evening as per the customers requirements.

This is a simple but effective laundry logistics operation of a hotel housekeeping department that leads to customer satisfaction.

Indian Postal Service

Figure 1.4: Indian Postal Service

Indian Postal Service is one of the largest logistics networks in the world today that delivers the letters in the most cost-effective way. The Indian Postal Service operates through a network of 1,52,781 post offices covering 6, 09,030 villages, towns, and cities across the country, delivering 43 million letters every day. They use all transportation modes available in India for movement of postal cargo. The collection of letters from 542,781 letter boxes, followed by sorting, packing, moving, unpacking and again sorting for final delivery is mammoth logistical task that they have performed cost effectively for the past one and a half centuries.

Review Question

I. Write True/False against the statement given:

1. Dabbawalas of Mumbai with its logistics system does 4,00,000 transaction daily.
2. The Indian Postal service operates through a network of 15,515 post offices covering 6,09,030 villages, town and cities across country.
3. Time taken in registering order for pizza is one minute.
4. The laundry in five star hotels is divided into two parts: Staff uniform and guest clothes.

1.2 Logistics- A System Concept

In a manufacturing enterprise, the business process starts with the flow of material from the suppliers to the manufacturing plant and then to the customer through the distribution channel. Traditionally, in the functional organization, the business process consists of discrete activities such as procurement, manufacturing, and distribution under the control of the respective departments. The departments may excel in their respective functions, but as an organization, their performance may be dismal. This might happen because of three reasons: (1) a lack of coordination in their activities, (2) different goals to cherish and (3) no single agency could control them to cherish a common goal.

The concept of logistics is based on the system approach. The flow of material from a supplier to a manufacturing plant and finally to the end customer is viewed as a single chain, ensuring efficiency and effectiveness in sequential activities to achieve the objective of customer satisfaction at a reduced cost. Logistics recognizes that all the activities to material movement across the business process are interdependent and need close coordination. These activities are to be managed as a system and not as functional silos. The functional areas of logistics, termed "Logistics Mix" by Martin Christopher, consist of:

1. **Information Flow**
   - Order Registration
   - Order Checking and Editing
   - Order Processing
   - Coordination
2. **Warehousing**
   - Material Storage
   - Load Unitizing and Material Handling
   - Site Selection and Network Planning
   - Order Picking and Filling
   - Dispatch Documentation
3. **Inventory Control**
   - Material Requirement Planning
   - Inventory Level Decisions for Customer Service Objectives
4. **Packaging**
   - For Handling and Damage Prevention
   - For Communication
   - For Inter Modal Transportation



5. **Transportation**

- Route Planning
- Mode Selection
- Vehicle Scheduling

The objective of logistics is to facilitate the flow of material across the supply chain of an enterprise so as to cost effectively make available the right product at the right place at the right time. Logistics has to achieve the two polemic goals of customer satisfaction and least cost. This is possible only when all the logistics functions are working as a unified system to achieve the common goal.

1.3 Logistics Functions

Logistics is a process of movement of goods across the supply chain of a company. However this process consists of various functions that have to be properly managed to bring effectiveness and efficiency to the supply chain of the organization. The major logistical functions are shown.

1.3.1 Order Processing



It is an important task in logistics operations. The purchase order placed by a buyer to a supplier is an important legal document of the transactions between the two parties. This document incorporates the description or technical details of the product to supply, price, delivery period, payment terms, taxes, and other commercial terms as agreed. The Processing of this document is important as it has a direct relationship with the order or the performance cycle time, which indicates the time when the order is received and when the material is received by the customer. The order processing activity consists of the following steps:

- Order checking for any deviations in agreed-upon or negotiated terms
- Prices, payment, and delivery terms
- Checking the availability of materials in stocks
- Production and material scheduling for shortage
- Acknowledging the order indicating deviations, if any

The above process consumes more time if paperwork is involved. If the processing of the order is slow and complicated, it will have a direct effect on the delivery period committed. It may increase the transportation cost in order to deliver the material faster to compensate for the delays in the order processing operation.

Order processing is a routine operation but requires a great deal of planning, training of people involved, and investment in the system to bring efficiency and accuracy to it. In a large organization where thousands of orders are received each day, it becomes impossible

to manually register the order and process the order quickly and correctly. In such a situation, a system capable of handling such voluminous work with minimum or no human involvement is a necessity. In addition, due to competitive pressure, the order fulfillment cycle has to be shortened to have an edge over the rival firms for retaining the customers.

The only solution is to devise an order processing system ensuring efficiency and accuracy, but with minimal investment costs.

1.3.2 Inventory Management

Inventory management is to keep enough inventory stocks to meet customer requirements, and simultaneously its carrying cost should be the lowest. It is basically an exercise of striking a balance between the customer service for not losing market opportunity and the cost to meet the same. The inventory is the greatest culprit in the overall supply chain of a firm because of its huge carrying cost, which indirectly eat away the profits. It consists of the cost of financing the inventory, insurance, storage, losses, damages and pilferages. The average cost of carrying inventory varies from 10 to 25 percent of the total inventory per year depending on the products. In the case of perishable products, it is on the higher side. Even though inventory is a major concern, without it a firm cannot meet the regular and timely product requirements of its customers.

There are two approaches to inventory management: one is cost approach and the other is customer satisfaction. Business firms try to strike a balance between the two. Due to advance communications and computing facilities, some business firms in business markets are operating on a zero inventory level by adopting the JIT technique. But this is possible with co-partnership between the purchaser and the supplier, and they communicate on a real time basis.

1.3.4 Warehousing

Warehousing is the storing of finished goods until they are sold. It plays a vital role in logistics operations of a firm. The effectiveness of an organization marketing depends on the appropriate decision on warehousing. In today's context, warehousing is treated as a switching facility rather than a storage place. It is a major cost centre, and many problems at the customer end are directly a result of improper warehousing management. Warehouse is the key decision area in logistics. The major decisions in warehousing are:

- Warehousing of warehousing
- Number of warehouses
- Size of the Warehouse
- Warehouse layout
- Design of the building
- Ownership of the warehouse

Warehousing is an important component of logistics as it is directly linked to the ability of a

firm to deliver the desired level of customer service. The ownership of a warehouse is private, public, or contractual. Each has advantages associated with it, and a firm has to choose the best options depending on its objectives and the resources available. However, the decision on warehousing requires proper planning and analysis, as well as help from experts in real estate, industrial engineering, and operations research.

1.3.5 Transportation

For movement of goods from the supplier to the buyer, transportation is the most fundamental and important component of logistics. When an order is placed, the transaction is not complete till the goods are physically moved to the customer's place. The physical movement of goods is through various transportation modes. For low unit value products, the transportation cost component is 20 percent of the product cost. In logistics costs, its share varies from 65 to 70 percent in the case of mass-consumed, very low unit-priced products.

Firms choose the mode of transportation depending on the infrastructure of transportation in the country or region, cost is the most important consideration in the selection of a particular mode of transport. However, sometimes urgency of the goods at the end of customer overrides the cost consideration and the goods are sent through the fastest mode, which is an expensive alternative.

The consideration of whether the firm should have its own fleet or go in for outsourcing depends on investment, operating costs, expertise, and reliability. The common modes available are road carriers, railways, airways, ships, pipelines, and ropeways. Depending on the customers requirements and the availability of transportation infrastructure and its reach and cost, firms decide on the mode with an optimum cost under the given product market conditions.

1.3.6 Information

Logistics is basically an information based activity of inventory movement across a supply chain. Hence, an information system plays a vital role in delivering a superior service to the customers. Use of IT tools for information identification, access, storage, analysis, retrieval, and decision support in logistics is helping business firms to enhance their competitiveness.

Review Questions

I. **Activity:** Visit one of the daily utility big retail store in your city/town and find about the logistics system and write a report.

II. **Question and Answers:**

1. Discuss the various components of logistics system.
2. Explain the order processing as logistic function.

III. Match the following:

(a) Information flow - Material Requirement Planning

(b) Warehousing - Order Picking and Filling

(c) Packaging - Order Registration

(d) Transportation - For Intermodal Transportation

(e) Inventory Control - Route Planning

1.3.7 Logistics for Business Excellence

Logistics is an information based process of material movement from a supplier to the manufacturer and to the customers. Hence, for business excellence, logistics operations need to be integrated on the following two fronts:

1. Integration of logistics into the business
2. Integration of components of logistics

Any business process consists of a set of activities that include raw material procurement, conversion, and the distribution of finished products for selling. To accomplish the objective of making available and the right product at the right place and at the right time with less cost, the help of another process called logistics is needed to take care of the material storage and movement across three stages of a business process. The integration will make the business process run as a chain rather than isolated process elements. The logistics process is a set consisting of a number of activities, including warehousing, material handling, storage, packaging, transportation, and information flow.

For a logistics operation to run smoothly, proper integration among the components of the logistics process is imperative. The efficiency and effectiveness of the entire system depend on how individual elements get coordinated and work as a system and not as functional silos.

In an integrated logistics process, a close coordination between inventory flow and information flow is essential for system efficiency and effectiveness. For a manufacturer, the inventory flow starts after the material is shipped from a supplier to the processing or manufacturing centre and ends with the delivery of the finished product to the customer or usher. In the case of a retailer, the logistics process starts after the material is dispatched from the manufacturer or wholesaler and ends with final delivery to the user. The volume of logistical activities varies with the width of the supply chain, the product category, and the volume of the business.

In a business process, there is continuous value addition at each stage of inventory transportation until, it is finally delivered to the customer. Logistics supports the value creation process and hence it requires continuous attention of the management. For the focused attention, logistics activities can broadly be divided into three areas of business operations wherein the logistics needs are quite different.

1.3.8 Procurement

It is also known as buying or purchasing activity. The material movement from suppliers to the buyer comes under the purview of inbound logistics. The raw material, components, parts, and consumables required for manufacturing operations should be available at the plant at the start of production schedules. The logistics activities include transportation and storage. The focus here is on a timely movement of the goods in an economic load size for transportation. Procurement is concerned with availability of desired material for the manufacturing in the right quantity. To save on the inventory carrying costs, the frequent but small lot sizes are planned. However, with an increased transportation frequency, the freight charges may go up, which may be offset by savings on inventory carrying costs.

1.3.9 Processing

The logistics operation in manufacturing is concerned with movement of in-process or work in progress inventory. Logistics here helps in preparing production scheduling. It is concerned with availability of inventory for the products to be manufactured, the places where they are manufactured, and the timings when they are manufactured. For example, the sub-assemblies for the truck will be manufactured at the decentralized locations from where these have to be brought to the main plant for carrying out the main frock assembly. The process logistics here takes care of the movement of the right parts and components to the respective sub-assembly plants and from there to the main assembly plant as and when required as per the production schedules. Process logistics takes care of the movement of inventory for requirements of the internal customer where the degree of uncertainty is very low because the manufacturing operations are under the control of management.

1.3.10 Distribution

The movement of finished goods from a manufacturing plant to the customer or user comes under the purview of outbound logistics. The availability of material at the point of sale and the time it is required by the customer is vital for an enterprise to encash the opportunity. The material may be required at various places in the distribution channels. The requirement of each of the channel members may be different in terms of quantity, product variety, frequency of delivery, transportation, and so on. The outbound logistics ensures movement of the material as per the requirements at the right place and at the right time, but with the minimum cost.

The logistics activities at three places- procurement, processing, and distribution in a supply chain overlap, but the requirements are different. Hence, the prime goal of the integrated logistics should be to co-ordinate the inventory movement across the supply chain for system effectiveness and efficiency to gain a competitive advantage.

Review Question

1. **Activity:** Visit any important transport company and observe the procedure it follows in getting registered order and planning route for the order and formalities. Discuss the same in your class room.

1.4 Logistics Management - Objectives

The primary objective of a logistics system is to move the inventory in a supply chain effectively and efficiently to extend the desired level of customer service at the least cost. To achieve this, the following subsets of the above broader objective need to be achieved:

1.4.1 Inventory Reduction

Inventory is the biggest culprit in adversely affecting the bottom line of an enterprise. Through a financial accountancy perspective, inventory is an asset and does not cause any appreciable disadvantage even when it is stocked in an excess quantity. Traditionally, firms have carried an excess of inventory for the purpose of extending excellent customer service. However, inventory as an asset requires investment to possess it. The funds invested are blocked and cannot be used for any other productive purpose. Moreover, there is a capital cost associated with it. The carrying cost will be equivalent to the interest on the funds at the bank borrowing rates currently applicable. The carrying cost will be drained on the enterprise profits. Hence, the prime objective of logistics is to maintain the inventory at the minimum level. However, the customer service goal can be managed through small but frequent supplies. A higher transportation cost will be much lower than the inventory carrying cost resulting in better margins.



1.4.2 Reliable and Consistent Delivery Performance

On-time delivery is crucial to the customer to maintain his production schedule. The customer is not interested in a faster delivery of the material ahead of production schedule. This area of operation is subject to variance. However, proper planning on transportation modes and inventory availability along with a variation factor will reduce the variance. The other objective of logistics should be consistency in delivery performance, this will help to build customer confidence for keeping a long term relationship.

1.4.3 Freight Economy

Freight is a major cost element in logistics cost. This can be reduced by adopting measures such as freight consolidation, transport mode selection, route planning, load unitizing, and long distance shipments.

1.4.4 Minimum Product Damages

Product damages add to the logistics cost. The reason for product damages are improper logistical packaging, frequent consignment handling, absence of load unitizing, and so on. Use of mechanized material handling equipment, load unitization and proper logistical packaging will reduce the product damages.

Review Question

I. From the following statements, write down the True/False against each statements:

1. When an order is placed, the transaction is not complete till the goods are physically moved to the customers place.
2. Information system plays a role in delivering an inferior service to the customers.
3. The primary objective of a logistics system is to move the inventory in a supply chain effectively and efficiently.

1.5 Role of Logistics in the Supply Chain

Logistics basically connects the source of supply with the sources of demand. It bridges the gaps between market demand and the capabilities of supply sources. Logistics helps in bridging these gaps so as to make them invisible at the logistics system such as the warehousing network, transportation network, inventory control system and supporting information system are put into operation with the objective of delivering the right product at the right place and at the right time with the least cost. The logistics system has to fulfill the two primary objectives of customer service and cost while striking a balance between them.

Logistics makes it possible to deliver a product to the customer anywhere, irrespective of its manufacturing location. It is deployed for making a daily shipment of products manufactured once a week / month or otherwise as per market needs. Logistics facilitates either a full truckload or shipment once a week or a part load daily as per the requirement of customers. Thus logistics fills the gap between supply and demand. However, when these gaps tend to be larger and the risk of dilution of service level is high, an integrated system is needed to make the operation seamless for product and information flow. SCM is a process of integration to bridge the gap between supply and demand. Today, we are talking of a virtual supply chain where in the cycle time it is reduced to zero, no warehouses exit, as inventory levels plummet to near zero and freight is cut down to a minimum through networking. This is an ideal situation but attempts should be made to achieve this goal. After trading half the path toward the goal as above, it becomes progressively easier to tread the remaining path and bridge the gap. SCM helps to close this gap by enhancing and then aligning the capabilities through enablers such as technology, collaboration and human resources skills.

The supply chain banks on the relationship with suppliers for performance cycle reduction, quality improvement, freight minimization and reduction in cost of material and transaction. It emphasizes flexibility in manufacturing capability for producing volumes and variety to quickly respond to the market demands, irrespective of time and place limitations. On the distribution side, the supply chain is needed in order to make products available at the point of sale or consumption as and when required, so as to minimize loss of sales due to non-availability of products. This channel remembers requirements, speedier, reliable and

consistent freight movements, load unitization, cross-docking, and freight consolidation. The supply chain tries to understand the demand signals and profiles the target customer base to adjust itself for planning and execution of customer requirement in accordance with the desired service level.

Logistics capabilities supplement supply chain operations. The efficiency and effectiveness of inventory movement across the supply chain is largely dependent on the capability of logistics management. Hence, integration of the supply chain is not possible without the capability and reliability of the logistics operation. Cost reduction and customer service enhancement in the supply chain are not possible without efficient logistics operations such as warehousing, material handling, inventory control, packaging and transportation. In fact, logistics and SCM cannot be separated from each other, since they are part of the same customer service solution. Logistics operation may continue irrespective of whether or not an enterprise follows the supply chain philosophy. Inventory movement needs to take place to bridge the gap between demand and supply chain philosophy. On the other hand, the success of a supply chain is greatly dependent on logistics. However, for the success of both logistics and the supply chain, the following operations need to be taken care of, planned and managed properly:

- Close coordination with suppliers
- Reduce inventory levels
- Speed, reliability, and consistency in inventory movement
- Faster replenishment cycle
- Shorter performance cycle
- Flexible manufacturing cycle
- Asset utilization and productivity
- Innovations for value additions in customer service offerings



In a nutshell, logistics is the key to the success of SCM. The degree of success depends on the level of integration between them using the enablers such as information and communication technology.

1.6 Transport Corporation of India- Indian Road Freight Index: The Route Map for Tracking Freight Rates

Transport Corporation of India (TCI) is known as one of the leading multi-modal integrated supply chain solutions provider in India. TCI enjoys an extensive set up of 1100 branch offices, 5700 work force and over two lakh satisfied customers because of its customer centric approach and world class resources, which they have developed over past five decades. TCI believes in continuously upgrading and establishing innovation for industry benchmarks. TCI has also introduced a pioneering service by the name of Indian Road

freight Index (IRFI) in 1998, which can be defined as an index of weighted average lorry freight rates across different routes, similar to that of stock market index the freight rates are very dynamic in the existing overland lorry freight industry, dominated by small regional operators. The existing market is very sensitive to issues such as supply demand of trucks, seasonal fluctuation, fuel price hikes, off-loading of major shipment, etc,. Lacks of comprehensive information regarding freight rates and the density of freight Lorries on certain routes etc. are the major lacuna in the existing system. Therefore, prediction of the ongoing trend in the freight rates, the emerging trend in the lorry availability for a given period of time and analysis of the freight rates become very difficult. As a result, freight rates for different routes on required dates are not available readily, which in turn hampers the analysis of the freight rates and movement of the shipment for both local and national levels. Wide fluctuations of freight rates are caused because of lack of such comprehensive data, thereby leading to non-optimization rates very difficult. No studies have been carried out on rates structure and therefore no databases are available on the rates and volume of material transported through each routes. TCI initiated this service to bring in benchmarks, the best practices and standardization of supply chain solutions in this sector in India, based on global practices.

RFI is a tool which helps in making comprehensive analysis of route wise and data wise freight trends, and also helps in forecasting the freight trends and freight rates for the near future.

1.6.1 Outsourcing

To survive in today's competitive markets, companies are focusing on their core competencies and adopting outsourcing as a strategic solution to improve quality of service and reduce cost of important as well as non-core processes. Using the strategic partnership of third-party logistics service providers, in integrated logistics, the companies world over have reported gains such as reduction in logistics costs, logistics assets and order cycle time. Today, it is an accepted trend in the industry to form a collaborative relationship with the logistics service provider for knowledge based supply chain integration that rests on IT as the backbone.

1.7 Catalysts for Outsourcing Trends

Today business organizations across the world are struggling to compete not only for growth but mere survival. The factors responsible for this are the liberalized economies of countries across the world, globalization of businesses and recessionary trends in the markets. Moreover, the customer has become more demanding and is locking more for value-added services from prospective suppliers, as he wants value for the money he is spending. In such a situation, business organization across the world, after reviewing their business processes, are increasingly realizing that cost cutting and differentiation in value delivery system are solutions to the current problem. This can be achieved through outsourcing the

non-core operations to experts in the field and concentrating on core business areas. The expert can do the job both cost effectively and efficiently. Hence, a growing trend observable in the industry today is a "hollowing out" of corporations. In other words, the large companies are increasingly outsourcing non-core business process and gaining operating efficiencies and effectiveness by engaging the services of experts in that particular field.

1.8 Benefits of Logistics Outsourcing

In a logistics operation considerable quantities of materials are required to be transported and stored at various locations. Raw materials and components are to be moved over long distances from vendor supply points to production centers. Starting from outsourcing of IT and HR Functions, Indian corporations have come a long way and understood the value and benefits they get from outsourcing such functions, wherein they feel they do not have the required expertise. Logistics is one of the operations in which the majority of Indian business corporations do not have expertise. Hence, after the liberalization of Indian economy in 1991, when the heat of competition was being felt, outsourcing became a corporate mantra for building competitiveness. In the developed countries, logistics outsourcing is treated as a strategic solution to improve quality of service and reduce the cost of important non-core processes. Therefore, such processes are outsourced to logistic service providers having a core competency in their area of logistics. The storage service relates to materials that have to be stored for some time as raw materials and later as finished goods.

Finished goods have to be transported to the point of consumption. As the production and consumption cycles never match, storage becomes inevitable. But the stored inventories have to be judiciously controlled for their carrying cost that is a drain on the company's profits. In such cases, the logistics service provider takes care of all hassles and ensures the availability of right product at the right place and at the right time. Logistics operation is a specialized functional area and the majority of marketing and manufacturing organizations have no expertise in it. Hence, the need to outsource operations to the expert in the field has to be taken seriously. The opportunity cost, which the traditional distribution system carries due to lost time in dealing with multiple vendors, transports, C&F agents, freight forwarders, octroi authority and customs agents, is a major hurdle in the company's overall competence. To overcome this hurdle and bring effectiveness and efficiency to the distributing system, outsourcing becomes necessary. The critical reasons why companies outsource logistics activities are:

- To focus on core competencies
- Resource constraints
- Cost saving resulting from better management of the supply chain
- Cross-pollination of better available practices
- Wider geographical coverage

In highly competitive markets, logistics outsourcing provides the operational flexibilities to meet the changing needs of the customers. Logistics services can also be customized for major markets or key accounts. As organizing the logistics infrastructure is the service provider's responsibility, the outsourcers need not have to worry about the assets becoming outdated. The switching over to a new logistics partner is possible due to the changing needs of customers. The requirement of funds for investment in transportation fleet, warehouses, handling equipment and storage arrangement is absolutely eliminated and the responsibility falls on the service provider to create infrastructure. The human resource requirement is minimized and is limited only to co-ordinating and monitoring the service provider's activities. Therefore, leading firms hire the services of experts using best practices in the outsourced area, and there hired, services are available at lesser cost.

1.9 Third Party Logistics

The trend of using a strategic partnership in integrated logistics has now become an accepted practice in the industry. These partners are called "third party service providers" or 3PL (short for third party logistics) firms. These firms are external to the company and provide one or more aspects of their entire logistics service product portfolio. These logistics services can be provided on a stand alone or an integrated basis. The stand alone operator is called a "wholesaler", who extends only one type of service in which it has expertise. It may be any of such services as warehousing, transportation, inventory management, packaging and so forth. However, the one who provides the total logistic services and offers entire solutions to customer problems is called the "integrator". The trends in the industry show a preference for integrated logistics solution providers, as the solution to several logistics problems can be handled from a single source.



A **third-party logistics provider** (abbreviated **3PL**, or sometimes **TPL**) is a firm that provides service to its customers of outsourced (or "third party") logistics services for part, or all of their supply chain management functions. Third party logistics providers typically specialize in integrated operation, warehousing and transportation services that can be scaled and customized to customers needs based on market conditions and the demands and delivery service requirements for their products and materials. Often, these services go beyond logistics and included value-added services related to the production or procurement of goods, i.e., services that integrate parts of the supply chain. Then the provider is called third-party supply chain management provider (3PSCM) or supply chain management service provider (SCMSP).

Third Party Logistics System is a process which targets a particular function in the management. It may be like warehousing, transportation, raw material provider, etc.

According to the Council of Supply Chain Management Professionals, 3PL is defined as "a firm that provides multiple logistics services for use by customers. Preferably, these services are integrated, or bundled together, by the provider. Among the services 3PLs provide are transportation, warehousing, cross-docking, inventory management, packaging, and freight forwarding."

Types of 3PL Providers

Third-party logistics providers include freight forwarders, courier companies, as well as other companies integrating & offering subcontracted logistics and transportation services.

- **Standard 3PL Provider:** This is the most basic form of a 3PL provider. They would perform activities such as pick and pack, warehousing and distribution (business) the most basic functions of logistics. For a majority of these firms, the 3PL function is not their main activity.
- **Service Developer:** This type of 3PL provider will offer their customers advanced value-added services such as: tracking and tracing, cross-docking, specific packaging, or providing a unique security system. A solid IT foundation and a focus on economies of scale and scope will enable this type of 3PL provider to perform these types of tasks.
- **The Customer Adapter:** This type of 3PL provider comes in at the request of the customer and essentially takes over complete control of the company's logistics activities. The 3PL provider improves the logistics dramatically, but do not develop a new service. The customer base for this type of 3PL provider is typically quite small.
- **The Customer Developer:** This is the highest level that a 3PL provider can attain with respect to its processes and activities. This occurs when the 3PL provider integrates itself with the customer and takes over their entire logistics function. These providers will have few customers, but will perform extensive and detailed tasks for them.



Initially, corporations were outsourcing only warehousing and transportation to 3PL firms, but as their confidence levels went up and benefits started accruing, the 3PL firms were invited to provide services in the areas of traffic management, multi-modal transportation, freight consolidation, cross-docking, freight auditing, payment collections, and so on. More and more companies began using 3PL services as a source of strategic advantage with a view to of achieving broader business objectives in addition to cost saving and cycle time reduction. Some of the broader objectives the corporations have in mind when going in for 3PL services are:

- Reduction in risk and liability
- Value-added services to customer
- Wider market coverage

1.10 Fourth-Party Logistics

IT industry is playing a major role in logistics and supply chain management. Today, the integration of logistics, which is a complex exercise, is totally dependent on the support of IT. Third-party logistics suppliers are providing logistics solutions to their clients, based on their experience and domain knowledge that they have acquired and developed over the years in the logistics business. However, a new trend has emerged wherein the IT firms are

providing logistics solutions built around domain knowledge provided by third-party logistics companies. This new breed of companies is the fourth-party logistics service providers or 4PLfirms.

4PL - A firm coined by the Anderson Consulting Company is the next significant evolution in logistics management. It is slowly gaining ground internationally. According to Anderson Consultants, "4PL assembles and manages the resources, capabilities and technology of its own organization with those of complementary service providers to deliver a comprehensive supply chain solution." However, the dividing line between 3PL and 4PL is very thin. The leading 3PL companies in the United States believe that 4PL is a hype created by management and IT consultancy firms to appropriate the best part of the logistics business that has been built by 3PL companies through relentless effort over the years. The genesis of 4PL lies in forming a collaborative relationship among various logistics service providers based on IT as the backbone. A network arrangement of this kind can be termed as 4PL, provided it fulfils the following requirements:

- Covers the entire supply chain of the customer.
- Collaboration between two or more logistics service providers on a resource sharing basis to extend logistic solutions to a common customer.
- Alliances to be led by integrator with IT-based and not asset-based service provider.
- Flexible arrangement.



For example, a 4PL company of fast moving consumer goods (FMCG) Indian manufacturer operating in the Indian and overseas markets, which needs to integrate its entire logistics operations handled by different 3PL firms in different geographical areas assigned to them, shall design and operate one single central information system instead of the different systems in different areas by each 3PL firms. A 4PL firm fulfils all the different needs of the client from a single source instead of getting into multiple 3PL alliances to achieve through multiple sources objectives.

Unlike the traditional methods that focus on reduction in operational cost and asset transfer, 4PL works in the following four ways:

1. Increases revenue
2. Reduces cost
3. Reduces working capital
4. Reduces fixed capital

4PL is an emerging trend and there are very few 4PL firms operating across the world. A complex model, 4PL offers greater benefits in terms of economies of scale. Recently, Hewlett Packard (HP) has appointed Circle International (CI) as their 4PL partner in the Asia Pacific region. CI operates from their central hub located in Singapore, where it buys and

stocks HP's inventory requirement in the region. The network of warehouse hubs, spread across the countries in the region, takes care of the distribution. The local HP office in the country draws its inventory requirements by buying from the CI local hub. HP does not block its funds in inventory. Thus 4PL provides logistic services by blocking its own money in someone else's products and components.

Review Questions

I. Question and Answer:

1. Write down the important objectives of logistics management.

II. Activity:

1. Visit third party logistics providers working in your town / city to observe its functioning and discuss in the class room.
2. Explain in brief the important differences between 3 PL and 4 PL providers.

1.11 Career & Growth in Logistics and Supply Chain

Logistics and Supply Chain Management has become prominent and acknowledged as critical factor in establishing competitive advantage in several developed countries. Expansion of international trade and globalization strategy of many companies has increased importance of Logistics and Supply Chain Management. Aggregate cost of Logistics and Supply Chain can account for upto 30% of total landed cost of goods. Giving careful attention to Logistics and Supply Chain Management results in reduction in costs and thus better performance for companies Logistics and Supply Chain Management Industry directly or indirectly contributes estimated 25% to most countries GDP and employs several million people.



Logistics and Supply Chain Management Involve

Effective day to day management of:

- Transport
- Storage and Warehousing
- Inventory/Stock Control
- Purchasing
- Packaging
- Manufacturing Management

Logistics and Supply Chain Management integrates with and is essential to many areas of business operations such as retailing, production management, quality control, importing and exporting, project management, forecasting etc.

Challenges for Logistics and Supply Chain

The top five challenges are:

1. Lack of Skilled and Trained Manpower
2. Customer Expectations
3. Pressure of Cost Control
4. Planning and Risk Management
5. Communication with Suppliers/ Partners

Attracting Talent

- Demand for qualified personnel in Logistics and Supply Chain Management far exceeds supply.
- Need to break perception that the sector is only "trucks and sheds". The sector provides variety of career pathways with progression opportunities through to senior management.
- Workforce and working patterns keep changing and thus need to target demographics which are entering workforce in large numbers, such as women and youth.
- Today only approx 20% of Logistics and Supply Chain Management professionals are women.

Career Opportunities and Potential Employers

Companies today realize the critically important role that supply chain plays in the financial performance of the organization. Companies are looking for supply chain professionals that can transform their supply chain into a source of competitive advantage. In today's global economy, companies like Dell, Nokia, Proctor & Gamble, Toyota, and Wal-Mart consider SCM to be a key factor in their success. SCM makes it possible to build and deliver products better, faster, and cheaper. Supply chain managers are the "glue" that connects the different parts of the organization.

Businesses realize that being competitive in the 21st century requires leading edge thinking around supply chain management and logistics. Companies large and small are looking for talented individuals with a strong mix of education, potential, and motivation to manage and lead their global supply chains. You will find SCM career opportunities in a variety of organizations such as manufacturing and production companies, service providers, retailers, transportation companies, third party logistics firms (3PL), government agencies, and consulting firms. The array of companies needing supply chain expertise is nearly endless. Successful firms such as Disney, Hewlett-Packard, Boeing, FedEx, Nike, Nestle, and Best Buy are just a few examples of companies that actively hire SCM graduates.

Figure 1.5: Potential Employers for Supply Chain and logistics

Review Question

I. From the following statements, write down True/False against each statement:

1. Logistics and supply chain management involve effective day to day management of transport.
2. Demand for qualified personnel in logistics and supply chain management does not exceeds supply.
3. Companies large and small are looking for talented individuals with a strong mix of education, potential and motivation to manage and lead their global supply chains.



1.12 Summary

This unit provides introduction to some of the best practices provided in logistics industry. It also discusses logistics system and its various elements. Further, the unit also provides a brief introduction of the role of logistics in supply chain, third party logistics, its types and fourth party logistics. It also briefly outlines the career and opportunities in the field of logistics and supply chain.

1.13 Exercise

1. Define the term logistics as discussed by Philip Kotler.
2. What is logistics -a system concept? Discuss.

3. Explain important elements of logistics system?
4. Write down the important system of information flow and warehousing.
5. Discuss the main objectives of logistics management.
6. Explain the role of logistics in supply chain.
7. What is third party logistics explain its types.
8. Examine the career opportunities in the field of logistics and supply chain.

1.14 Practical

1. Taking the case of Dabbawalas of Mumbai discuss the following points in the class room.
   a) Evolution
   b) Preparation of lunch boxes.
   c) Man power & its management.
   d) Identification of dabbas for its consumer & its confirmation.
   e) Warehousing of dabbas.
   f) Information of lunch box delivery man.
   g) Collection of boxes after its delivery.
   h) Uninterrupted supply in odd weather and season.
2. Visit a nearby company in your town / city and prepare a note on its customer information flow for its demand to be processed.
3. Visit a business unit / company nearest to your town / city and prepare a note on logistics system concept adoption activity.