ASAN INSTITUTE OF MANAGEMENT

INTRODUCTION TO LOGISTICS

Logistics - Definition, Evolution, Scope, Functions, Objectives, and Importance-Logistics Integration - Customer Service - phases, service attributes, Value added Logistical Services-Supply Chain Management vs Logistics.

LOGISTICS: CONCEPT, DEFINITION, ORIGIN AND EVOLUTION

Logistics management is the part of the supply chain process that plans, implements, and controls the efficient, effective flow and storage of goods, services, and related information from the point of origin to the point of consumption to meet customer requirements.

Logistics management may be defined as follows:

According to the Council of Logistics Management, logistics can be defined as "that part of supply chain process that plans, implements and controls the efficient, effective flow and storage of goods, services and related information from the point of origin to the point of consumption".

Logistics Management is an all-inclusive term that encompasses both planning and execution of four key aspects of logistics, i.e. transportation, distribution, warehousing and purchasing. Another pertinent factor that logistics management takes into account is the flow of goods in forward and reverse order.

Logistics management consists of the process of planning, implementing and controlling the efficient flow of raw-materials, work-in-progress and finished goods and related information- from point of origin to point of consumption; with a view to providing satisfaction to the customer.

Origin and Evolution:

- **Years 30 "Military logistics"**

After the Second World War, the interest of business by the logistics process arises and an analogy is established between military logistics and technical material supply and military logistics is begun to be related to industrial production.

- **Years 50 "Conceptualization of logistics"**

Logistics becomes more important due to the transition that goes through the most developed countries, from an economy characterized by excessive demand to an economy with excess supply, with these being their main characteristics:

- First developments of the total cost of logistics operations.
- It focuses on the concern to satisfy the customer.
- Distribution channels are of particular importance. You want to sell any product anywhere.
- Increase new products, as a result the product lines are originated.

- **60 Years "Outsourcing"**

Logistics took a new approach where "outsourcing" was the most appropriate mechanism to reach customers, since it had as its main objective the subcontracting of other companies because the flow of goods or information was efficient and reached all parts that were within the reach of the company.

- **Years 70 "The concept of trial logistics"**
  - Customer service becomes an indispensable requirement to continue competing with market leaders.
  - Progress in the concept of physical distribution.
  - There are periods of recession and growth in the world economy.
  - Development of the inventory management strategy.
  - The technology for the industrial revolution that occurred during these times began to emerge, and the cost of information technology was reduced to improve the quality, which brought about an improved mechanism for the supply of the goods Or information accurately and precisely at the time the customer made their order, this mechanism is called "Just in Time", that is just in time

- **Since the 80's "Modification of preferences"**
  - The energy crisis of the moment drives the movement towards the improvement of transport and storage.
  - Just in Time's approach was modified by Quick Response (QR) and Efficient Consumer Response (ECR) with the sole purpose of seeking a precise delivery with the exact amount, when and where needed, to meet To the customer.
  - Changes in supply chain preferences where special attention is paid to suppliers,

distributors and customer service, defining the end-user's demand.

- Inventories, total logistics costs are reduced, and delivery times are shorter.
- Logistics operations are energy-intensive: environmental-ecological concern is born.

- **1990 "Promotion of logistics"**

Logistics went on to become a more integrated process in terms of its external and internal environment, in other words, its internal processes within the company were managed according to the relationships that were with its customers and suppliers.

This process of integration causes logistics management to begin with a strategic plan regarding the design of how to reach the final customers, in order to go out and minimize competition, establishing efficient plans for the supply of the products.

- Technology continues to position itself in conventional Logistics processes and Distribution channels
- Outsourcing services
- Demand for logistics services expands

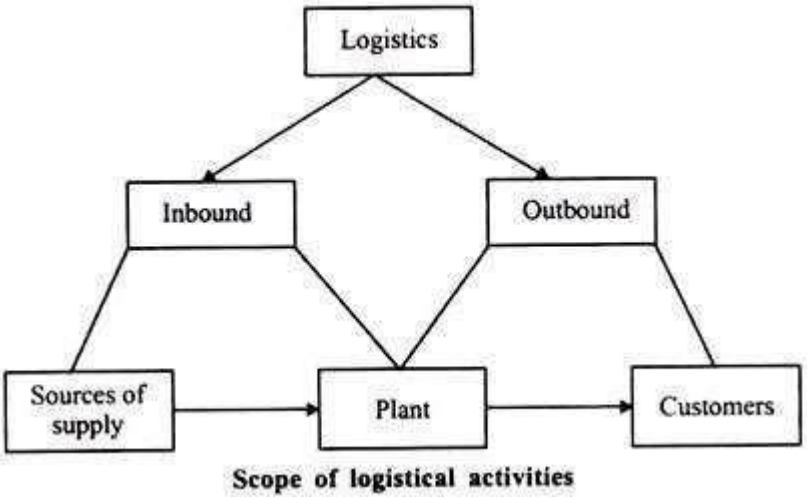
Day by day it is observed that to put into practice a good business logistics management is essential, it has developed over time and is now a basic aspect. A perfectly designed logistics project is the most strategic tool to compete with the demanding current market, achieving customer loyalty.

Classification of Logistical Activities:

Logistics (or Logistical Activities) may be broadly classified into two categories:

I. Inbound logistics; which is concerned with the smooth and cost effective inflow of materials and other inputs (that are needed in the manufacturing process) from suppliers to the plant. For proper management of inbound logistics, the management has to maintain a continuous interface with suppliers (vendors).

II. Outbound logistics (also called physical distribution management or supply chain management); is concerned with the flow of finished goods and other related information from the firm to the customer. For proper management of outbound logistics, the management has to maintain a continuous interface with transport operators and channels of distribution.



Scope of logistical activities

Significance (or Objectives) of Logistics Management:

Logistics management is significant for the following reasons:

(i) Cost Reduction and Profit Maximization:

Logistics management results in cost reduction and profit maximization, primarily due to:

1. Improved material handling
2. Safe, speedy and economical transportation
3. Optimum number and convenient location of warehouses etc.

(ii) Efficient Flow of Manufacturing Operations:

Inbound logistics helps in the efficient flow of manufacturing operations, due to on-time delivery of materials, proper utilization of materials and semi-finished goods in the production process and so on.

(iii) Competitive Edge:

Logistics provide, maintain and sharpen the competitive edge of an enterprise by:

1. Increasing sales through providing better customer service
2. Arranging for rapid and reliable delivery
3. Avoiding errors in order processing; and so on.

(iv) Effective Communication System:

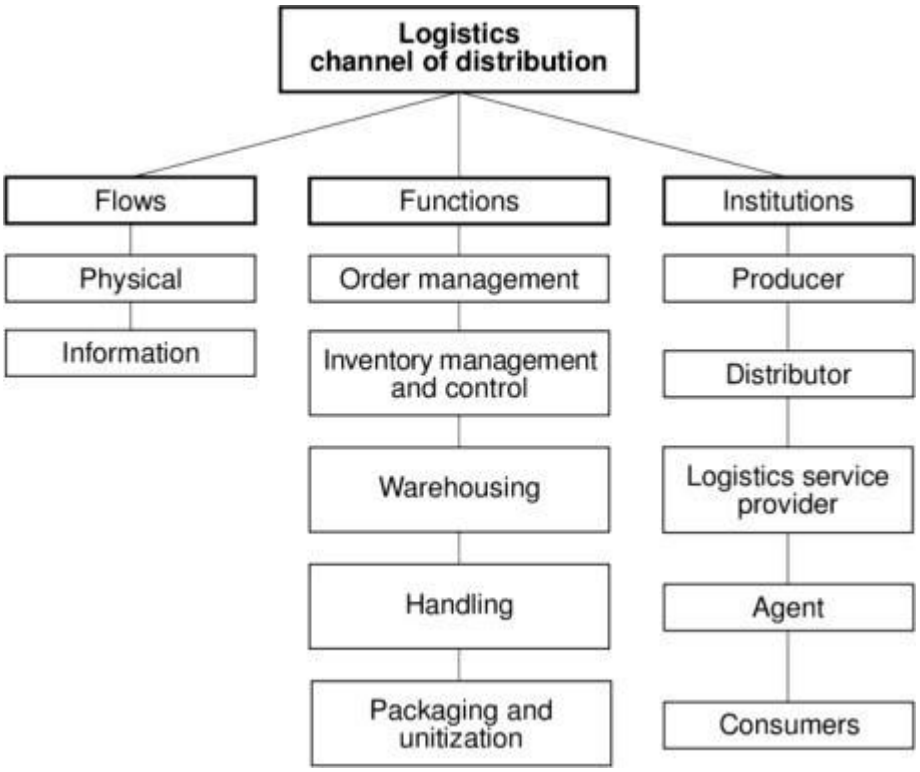
An efficient information system is a must for sound logistics management. As such, logistics management helps in developing effective communication system for continuous interface with suppliers and rapid response to customer enquiries.

(v) Sound Inventory Management:

Sound inventory management is a by-product of logistics management. A major headache of production management, financial management etc. is how to ensure sound inventory management; which headache is cured by logistics management.

FUNCTIONS OF LOGISTICS:

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.



- **Order Processing:** Customers' orders are very important in logistics management. Order processing includes activities for receiving, handling, filing, recording of orders. Herein, management has to ensure that order processing is accurate, reliable and fast. Further, management has to minimize the time between receipt of orders and date of dispatch of the consignment to ensure speedy processing of the order. Delays in execution of orders can become serious grounds for customer dissatisfaction; which must be avoided at all costs.
- **Inventory Management:** The basic objective of inventory management is to

minimize the amount of working capital blocked in inventories; and at the same time to provide a continuous flow of materials to match production requirements; and to provide timely supplies of goods to meet customers' demands.

- **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's marketing depends on the appropriate decision on warehousing. In today's context, warehousing is treated as switching facility rather than a storage of improper warehousing management. Warehousing is the key decision area in logistics.

The major decisions in warehousing are:

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

- **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 completed till the goods are physically moved to the customer's place. The physical movement of goods is through various transportation modes. 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 good at the customer end overrides the cost consideration, and goods are sent through the fastest mode, which is an expensive alternative.
- **Material Handling and storage system:** The speed of the inventory movement across the supply chain depends on the material handling methods. An improper method of material handling will add to the product damages and delays in deliveries and incidental overheads. Mechanization and automation in material handling enhance the logistics system productivity. Other considerations for selection of a material handling system are the volumes to be handled, the speed required for material movement and the level of service to be offered to the customer. The storage system is important for

maximum space utilization (floor and cubic) in the given size of a warehouse. The material handling system should support the storage system for speedy movement (storage and retrieval) of goods in and out of the warehouse.

- **Logistical Packaging:** Logistical or industrial packaging is a critical element in the physical distribution of a product, which influences the efficiency of the logistical system. It differs from product packaging, which is based on marketing objectives. However, logistical packaging plays an important role in damage protection, case in material handling and storage space economy. The utilization of load has a major bearing on logistical packaging with regard to the packaging cost.
- **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 which is vital among the functions of logistics is helping business firms to enhance their competitiveness.

INTEGRATED LOGISTICS MANAGEMENT

The movement of raw materials and components to a manufacturing company must be managed. So must the movement of finished goods from the manufacturing plant to further processing, to the retail, or to the final consumer. The management of this movement is called **integrated logistics management**.

Integrated Logistics is defined as, "the process of anticipating customer needs and wants; acquiring the capital, materials, people, technologies and information necessary to meet those needs and wants optimizing the goods-or-service-producing a network to fulfill customer requests; and utilizing the network to fulfill customer request in a timely way." **Integrated logistics** is a service-oriented process. It incorporates actions that help move the product from the raw material source to the final customer.

Variables affecting the Evaluation and Growth of Integrated Logistic:

- The first was the growth of the consumer awareness and the marketing concept. Product line expanded to meet the rising demand for more selections. This

product line expansion put great presser on distribution channels to move more products and keep cost down, especially in transportation and inventory.

- A second factor was the introduction of the computer. Computer experts and integrated logistic manager quickly found a multitude of computer application for logistic. This application offered still greater efficiency in transportation routing and scheduling, inventory control, warehouse layout and design, and every aspect of integrated logistic. In fact computers allowed integrated logistic managed to modal integrated logistic system and then analyse the effect of proposed change. This application greatly advance the system's approach

- The third variable leading to the growth of integrated logistics was the worldwide economy in the 1970s and 1980s. Global recession and rising interest rates caused many firms to refocus attention on reducing cost advantage; many firms were forced to revaluate overall transportation needs. Also, rising interest rates turned attention to maintaining minimum inventory levels because of the cost of capital

- Globalization of business and the development of world trade blocks are a fourth factor influencing the growth of integrated logistics. Integrated logistic can provide firms with a cost advantage. Furthermore, trading blocks in Europe. Southeast Asia, Asia, Africa and the Americans (European Union, association of Southeast Asian nations and the Asian- pacific economic cooperation, southern African development community, North American free trade agreement and now the free trade agreement of the Americas) require integrated logistics to tie the participating countries into single marketplaces.

- The final factor affecting integrated logistics is the growth of just-in-time manufacturing (JIT), supply management, transportation, and electronic data interchange (EDI) in the 1980s and 1990s. As manufacturers adopted total quality management (TQM), JIT, and EDI, **integrated logistics management** has come to the forefront. Effective TQM and JIT require optimizing the inbound and outbound transportation and more efficient inventory management.

Activities related to integrated logistics:

- Physical distribution.
- Materials management.
- Logistics engineering.
- Business logistics.
- Logistics management.
- Integrated logistics management.
- Distribution management.
- Supply chain management.

Although the activities include under each term vary, they share one key ingredient: "The concept of a continuous uninterrupted flow of the product."

1. Evolution of Logistics

Q: How has logistics evolved over time?

A:

- **1950s-60s:** Focused on transportation and warehousing.
- **1970s-80s:** Introduction of inventory management and distribution strategies.
- **1990s:** Rise of supply chain management (SCM) and Just-in-Time (JIT) logistics.
- **2000s-Present:** Digital transformation (IoT, AI, automation), e-commerce logistics, and sustainability in logistics.

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2. Nature and Importance of Logistics

Q: What is the nature and importance of logistics in business?

A:

Nature:

- Logistics involves planning, implementing, and controlling the efficient flow of goods, services, and information.
- It integrates transportation, warehousing, inventory, and order fulfillment.

Importance:

- Ensures timely delivery, reducing lead times.
- Lowers operational costs through optimized routes and inventory.
- Enhances customer satisfaction with reliable service.
- Supports global trade and supply chain efficiency.

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3. Components of Logistics Management

Q: What are the key components of logistics management?
A:

1. **Transportation** – Road, rail, air, sea, and multimodal transport.
2. **Warehousing** – Storage, handling, and distribution centers.
3. **Inventory Management** – Stock control, demand forecasting.
4. **Order Processing** – Efficient order fulfillment.
5. **Packaging & Material Handling** – Safe and cost-effective packaging.
6. **Information Systems** – Tracking, ERP, and logistics software.

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4. Competitive Advantages of Logistics

Q: How does logistics provide a competitive advantage?
A:

- **Cost Efficiency** – Reduces transportation and storage costs.
- **Speed & Reliability** – Faster deliveries improve customer satisfaction.
- **Global Reach** – Enables international trade and market expansion.
- **Flexibility** – Adapts to demand fluctuations (e.g., seasonal peaks).

- **Sustainability** – Green logistics reduces environmental impact.

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5. Functions of Logistics Management

Q: What are the primary functions of logistics management?

A:

1. **Demand Forecasting** – Predicting customer needs.
2. **Procurement Logistics** – Sourcing raw materials.
3. **Production Logistics** – Managing WIP and assembly lines.
4. **Distribution Logistics** – Delivering finished goods to customers.
5. **Reverse Logistics** – Handling returns and recycling.

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6. Principles of Logistics Management

Q: What are the key principles of logistics management?

A:

1. **Customer Focus** – Meeting delivery expectations.
2. **Cost Optimization** – Minimizing logistics expenses.
3. **Efficiency** – Streamlining processes (e.g., route planning).
4. **Integration** – Aligning logistics with supply chain strategies.
5. **Technology Adoption** – Using AI, IoT, and automation.

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7. Logistics Network

Q: What is a logistics network, and why is it important?

A:

- A logistics network consists of suppliers, warehouses, transportation, and distribution centers.

- **Importance:**
  - Ensures smooth product flow from suppliers to customers.
  - Reduces delays and costs through optimized routes.
  - Enhances scalability for business growth.

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8. Integrated Logistics System (ILS)

Q: What is an Integrated Logistics System, and how does it work?

A:

- ILS combines all logistics functions (transport, warehousing, inventory) into a unified system.
- **Key Features:**
  - Real-time tracking (GPS, RFID).
  - Automated order processing.
  - Data-driven decision-making.
- **Benefits:**
  - Reduces inefficiencies.
  - Improves coordination between suppliers and retailers.
  - Enhances visibility across the supply chain.