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Logistics Planning & Analysis
Chapter 6
Transportation Management
Objectives

• Understand the role of transportation and its importance in logistics.
• Examine the principles of transportation.
• Able to identify the role of entities in a transportation network.
• Examine the transportation modes and their costs.
• Understand the concept of total transportation cost.
Introduction – Role of Transportation in Logistics

- The role of transportation in logistics operations has changed dramatically over the last three decades.
- Today a wide range of transportation alternatives is available.
- Transportation adds place value to products and services.
- Transportation is essential because no modern firm can operate without providing for the movement of its raw materials and/or finished products.
Transport Functionality

- Transportation is a very visible element of logistics.
- Consumers are accustomed to seeing trucks and trains transporting product or parked at business facilities.
- Few consumers fully understand just how dependent our economic system is upon economical and dependable transportation.
- Transportation enterprises provide two major services:
  - Product Movement.
  - Product Storage.
Transport Principles

• Economies of Scale
  ▪ The cost per unit of weight generally decreases as the size of a shipment increases.

• Economy of Distance
  ▪ This refers to decreased transportation cost per unit of weight as distance increases.
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Transport Participants

Figure 6-1: Relationship among Transportation Participants
Importance of an Effective Transport System

- Without reliable transportation, most commercial activity could not function.
- An efficient and inexpensive transportation system contributes to greater competition in the marketplace, greater economies of scale in production and reduced prices for goods.

Results:
- Greater Competition
- Economies of Scale
- Reduced Prices
Transport Cost Characteristics

- Transportation usually represents the most important single element in logistics costs for most firms.
- Freight movements have been observed to absorb between one-third and two-thirds of total logistics costs.
- The relevant costs are:
  - Variable cost
  - Fixed cost
Cost Characteristics by Mode

• The type of services that a carrier is likely to emphasize is indicated by the nature of the general cost function and by the relationship of the mode to those of other carriers.

• The modes are:
  ▪ Rail
  ▪ Water
  ▪ Air
Carrier Pricing Strategies

• Cost-of-Service
  ▪ The cost-of-service strategy is a build-up approach where the carrier establishes a rate based on the cost of providing the service plus a profit margin.

• Value-of-Service
  ▪ It is an alternative strategy that charges a price based on value as perceived by the shipper rather than the carrier's cost of actually providing the service.
Figure 6-2: Cost Trade-off between Transportation and Inventory Costs as a Function of Transportation Service Characteristics
Conclusion

- Without a well-developed transportation system, logistics could not bring its advantages to the benefits to the economy.
- A good transport system in logistics activities could provide better logistics efficiency, reduce operation cost, and promote service quality.
- Logistics and transport system need to work in tandem to bring out efficiency.