

Module - 02

The Role of Distribution in the Supply Chain

Distribution - The steps taken to move and store a product from the supplier stage to the customer stage in SC

Distribution directly affects cost & the customer experience and therefore drives profitability.

Choice of distribution network can achieve supply chain objectives from low cost to high responsiveness.

ex: Walmart, Dell, etc.

* Factors Influencing Distribution Network Design

Distribution network performance evaluated along two dimensions at the high level:

- ① Customer needs that are met
- ② Cost of meeting customer needs.

Distribution network design options must therefore be compared according to their impact on customer service and the cost to provide this level of service.

- Elements of customer service influenced by network structure.

Response time

Product variety

Product availability

Customer experience

Order visibility

Returnability

Elements of supply chain cost

- Inventories.
- Transportation
- Facilities and handling
- Information.

* Design Options for a distribution Network

Managers must make two key decisions when designing a distribution network.

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Chapter - 5

Network design in the Supply chain

1) The role of network design in supply chain

- Facility role
- Facility location
- Capacity allocation
- Market and supply allocation

2) Factors influencing Network design decision

1) Strategic factor

- ↳ offshore facility : low cost for export production
- ↳ source facility : low cost facility for global production
- ↳ server facility : regional production facility
- ↳ contributor facility : " " " with development skills
- ↳ Outpost : built to gain local skills
- ↳ lead facility : facility that leads in development of process technologies.

2) Technological factors

3) Macroeconomic factors

↳ Tariffs & Tax Incentives

↳ Exchange rate & Demand risk.

4) Political factors

↳ Infrastructure

↳ Competitive

↳ Positive Externalities between firms.

↳ Locating to split market

5) Socioeconomic factors

↳ Customer Response time & Local Presence

↳ Logistics & facility Costs.

Chapter - 13

Transportation In Supply Chain

1) Role of transportation

2) Modes of transportation & their performance characteristics.

- ① Air
- ② Package carriers
- ③ Truck
- ④ Rail
- ⑤ Water
- ⑥ Pipeline
- ⑦ Intermodal

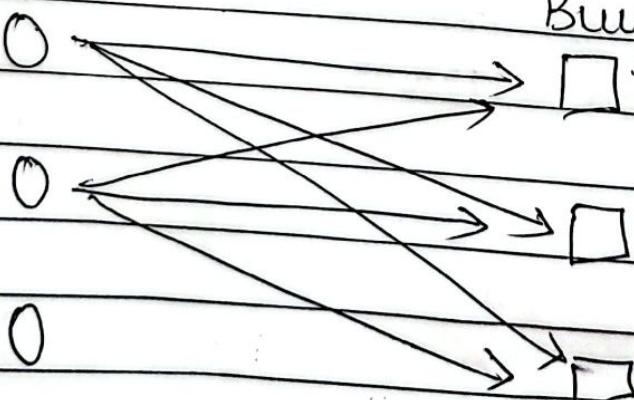
3) Transportation Infrastructure & Policies.

4) Design Option for a Transportation Network

- ① Direct Shipment Network

Supplier

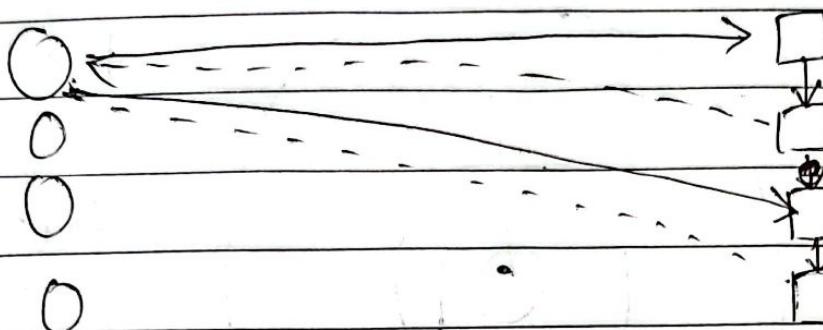
Buyer location



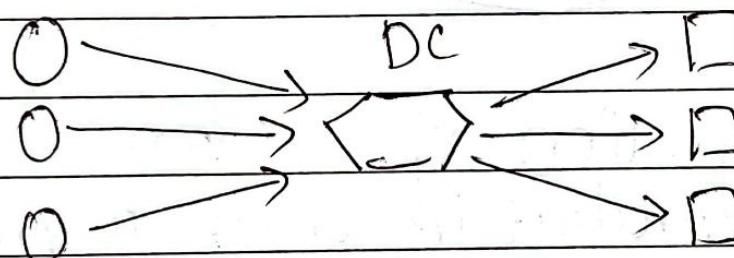
② Direct shipping with Milk Runs

Supplier

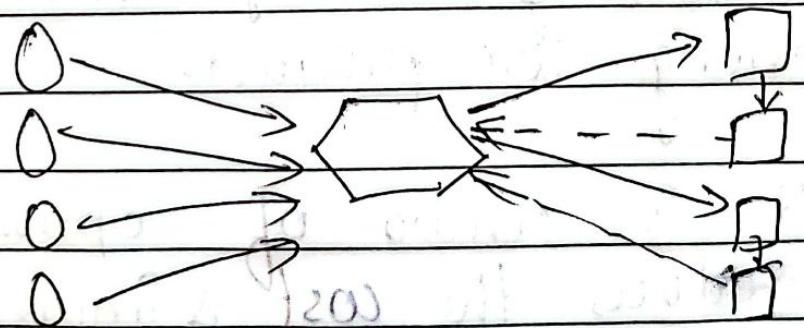
Buyer location



③ All shipments via Central Distribution Centre.

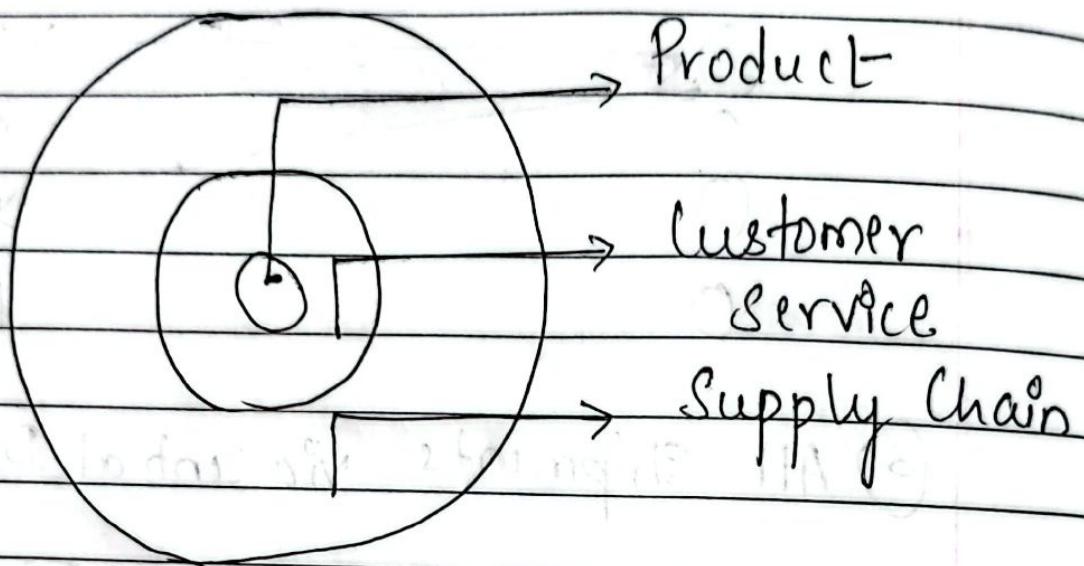


④ Direct shipping via DC using milk run



⑤ Shipping via line haul with cross docking
From big trucks to cross dock at customer point.
from there use (Lanzo) near location.

5) Tailored Network



- integration of SC service with the core product in order to give each customer a value added product.
- It becomes very limited scope among core products.
- It is combo of options that reduces the cost & improves responsive of supply chain.

Tailored transportation

① TT by customer density & distance

② TT by size of customer

↳ Transportation cost based on total route

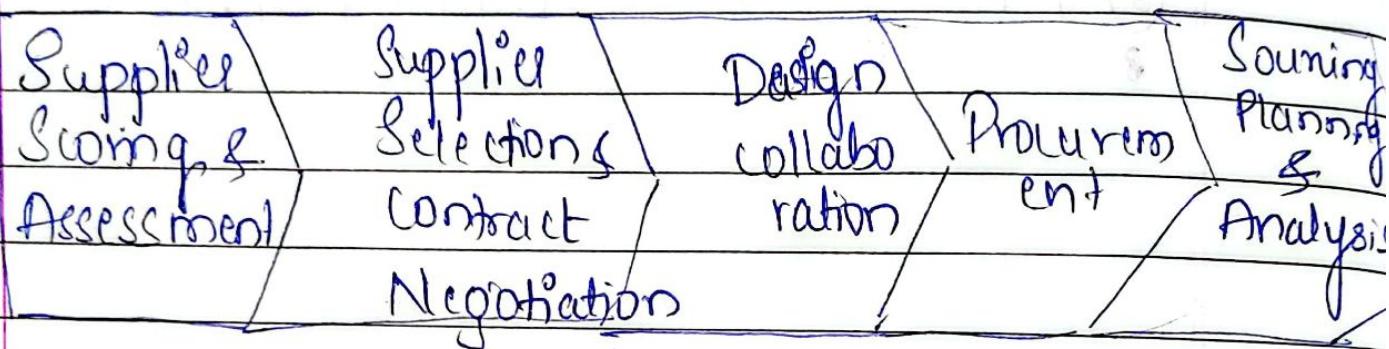
↳ Delivery cost based on no. of delivery

③ TT by product demand & value

Module - 03

Chapter 14 - Sourcing Decisions in a Supply Chain

1) The Role of Sourcing in a Supply Chain



2) In-house or outsource

- 1) Capacity
- 2) Inventory
- 3) Transportation aggregation by transportation intermediaries
- 4) Transportation aggregation by storage
- 5) Warehousing aggregation.
- 6) Procurement aggregation.
- 7) Information aggregation.
- 8) Receivable aggregation.
- 9) Relationship aggregation.
- 10) Lower cost & higher quality

2.2) Risk of using a third-party

- 1) The Process is broken
 - 2) Underestimation of the cost of coordination.
 - 3) Reduced customer / supplier contact.
 - 4) Loss of internal capability & growth in 3rd party.
 - 5) Leakage of sensitive data & information
 - 6) Ineffective Contracts.
- Company with ^{with vendor}
with other transporter
- 3) 3rd Party & 4th party logistics.
 - 4) Supplier Sourcing & Assessment
 - 5) Supplier Selection - Auctions & Negotiation

Auctions

- Sealed bid first price auction
- English auctions.
- Dutch auctions
- Second price auctions.

Negotiation

Direct Negotiation - Refers to exclusive negotiation between an agency & a supplier / supporter without first undergoing a genuine competitive process.

16/11/22 [71, 51, 53, 78, 57, 43, 92, 30, 49, 72, 63, 39, 11, 96, 50, 86, 55, 22, 108, 79, 66, 73, 102, 003, 116, 114, 117, 118, 28, 016, 017, 009, 84, 32, 56] attendance 16/11/2022

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6) Design Collaboration:

- 50 - 70% of cost in a manufacturing is through procurement & 80% of the cost of a product part is fixed in design phase.
- It is important to employ design for logistics & for manufacturability.
- results in cost, improved quality, decrease time to market.
- effective design coordinator.

→ Procurement

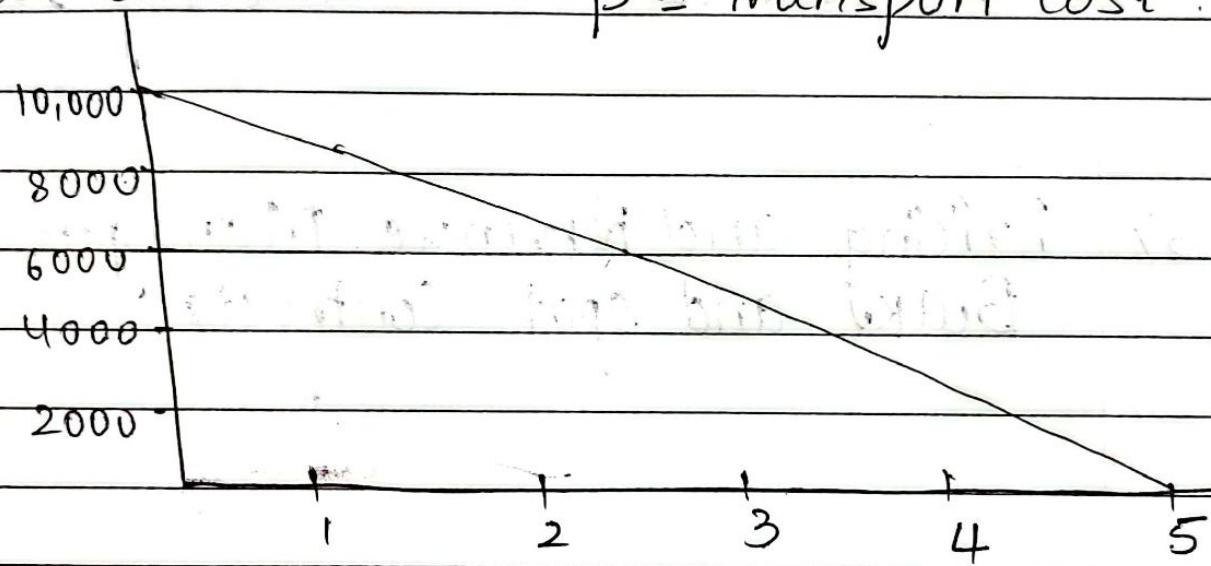
- It is the acquisition of goods & commodities by a company, organisation, institution or a person.
- Procurement in supply chain is the process in which supplier sends product in response to order placed by buyer.

Chapter - 15

1) Pricing & Revenue Management to multiple customer services

$$d = 10000 - 2000p$$

d = demand p = transport cost



- Dynamic pricing (on time pricing)
(sweater) ↗ (fashion apparel)
- Overbooking

2) Pricing and revenue Management for seasonal demand.

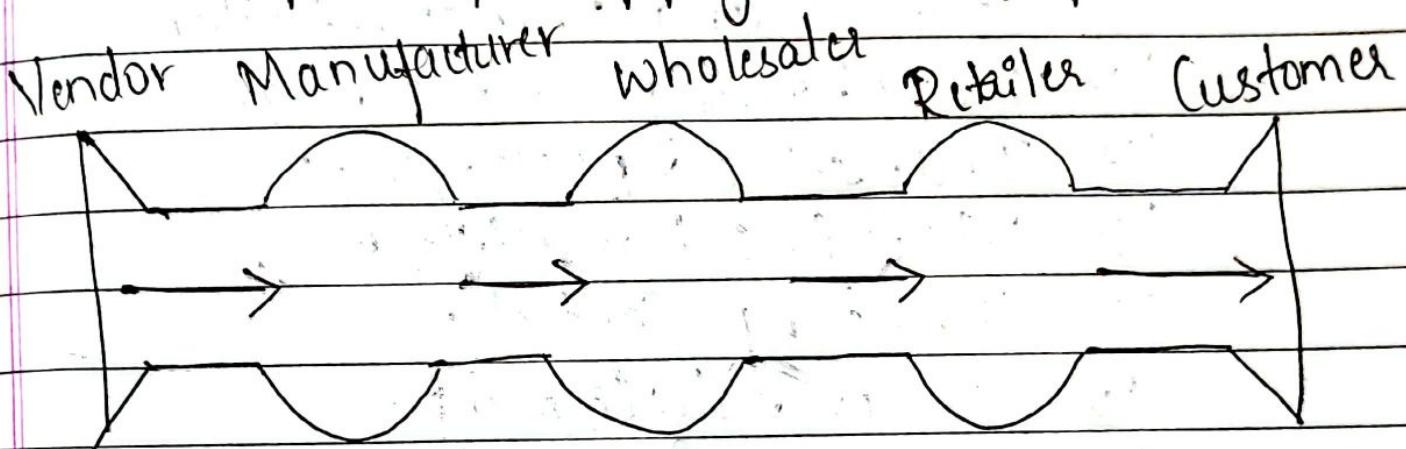
Seasonal items like fruits, fish, winter cosmetics, fashion apparel etc. exhibits different demand pattern at various times during season.

3) Pricing and Revenue Management for Bulk and spot Contracts.

Module - 04

ix Dimensions of Logistics.

Contemporary Supply chain pipeline.



GDP - Gross domestic product.

ext Logistics Interfaces with other Areas.

ROA - return on assets.

ROA - revenue - expenses / assets.
or

ROA - gross profit / assets.

3) Logistical Activities

The logistics definitions discussed earlier indicates activities for logistics manager may be responsible:

- ↳ Traffic and transportation
- ↳ Warehousing and storage
- ↳ Industrial packaging
- ↳ Materials handling
- ↳ Inventory control
- ↳ Order fulfillment
- ↳ Demand forecasting
- ↳ Production planning
- ↳ Purchasing
- ↳ Customer services levels
- ↳ Plant and warehouse site location
- ↳ Return goods handling
- ↳ Parts and services support
- ↳ Salvage and scrap disposal

Scope of Activities

- ↳ Transportation
- ↳ Storage
- ↳ Packaging
- ↳ Materials Handling
- ↳ Order fulfillment
- ↳ Forecasting
- ↳ Production Planning
- ↳ Purchasing
- ↳ Customer Service
- ↳ Site Location
- ↳ Other activities.

5)

Approaches to Analyzing logistics systems :-

↳ Materials Management versus physical distribution.

- ① Balanced Systems.
- ② Heavy Inbound.
- ③ Heavy outbound.
- ④ Reverse Systems

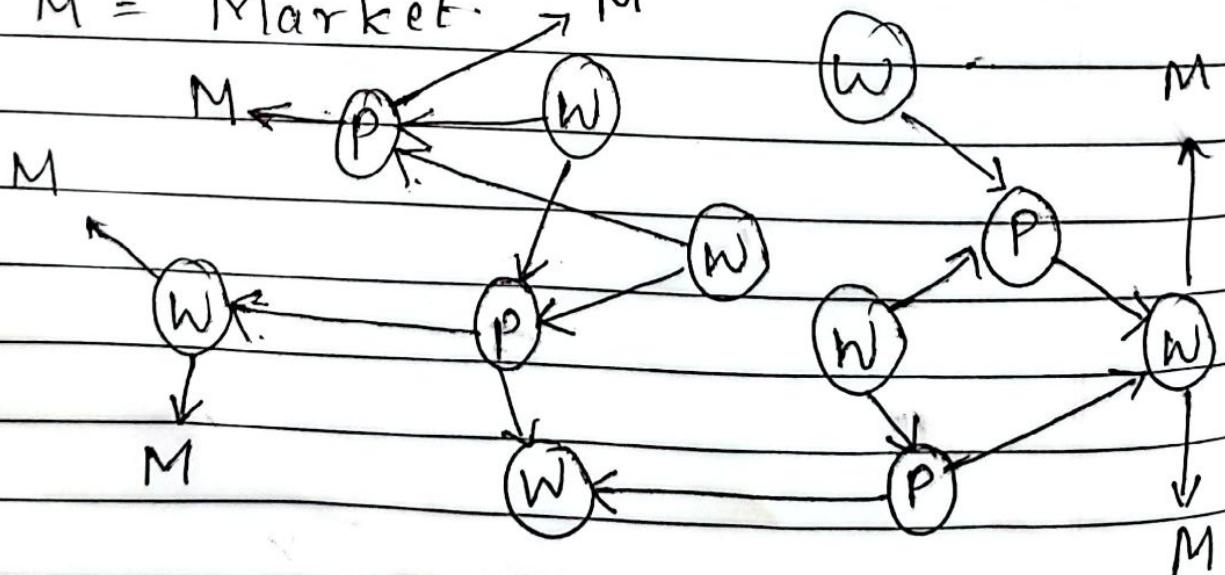
↳ Cost centres.

↳ Nodes versus Links.

W = Warehouse.

P = Plant

M = Market



Nodes & Links in logistics system!

6) Logistics Channel :-

- ↳ A simple Logistics channels
- ↳ A Multi-Echelon Logistics. Channels
- ↳ A Complex logistics channels.

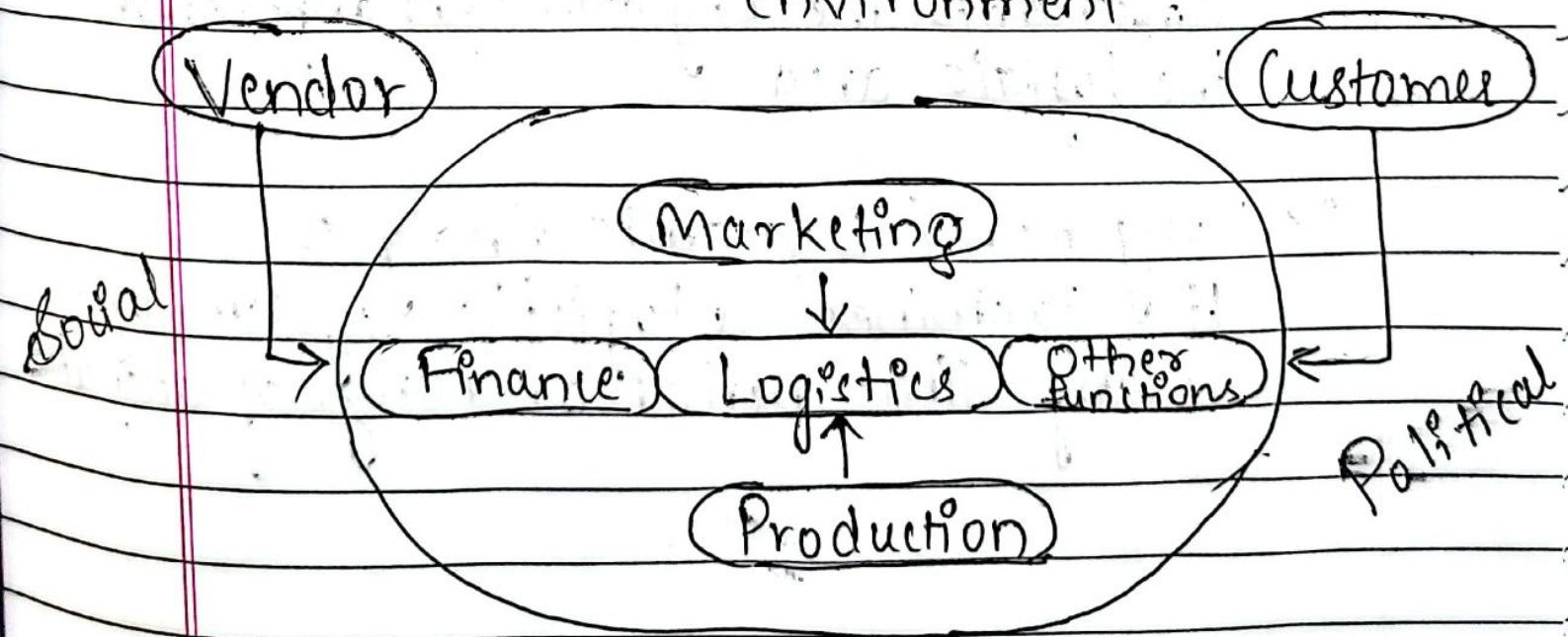
7) Logistics and systems Analysis.

Concept of a system.

Cost perspective.

↳ Level of Optimality.

Levels of Optimality in Economic Environment



8) Techniques of Logistics System Analysis

1) Short run / static Analysis.

One general approach to total cost analysis for logistics is known as short run analysis. In this specific point in time or level(s) of production is chosen and cost are developed for various logistic cost centres described previously.

Multiple short run analysis would be considered and then the system with lowest overall cost would be selected as long as it was consistent with the constraints the organisation imposed on the logistic area.

2) Long Run / Dynamic Analysis.

It examines a logistic system over a long time period or range of output.

a) Factors affecting the cost & importance of logistics

1) Competitive Relationships.

Competition is narrowly interpreted only in forms of price issue is certainly important. In many markets, customer service can be a very important form of competition.

↳ Order Cycle - The order cycle length directly affects inventory requirement is a well accepted principle of logistics management. In another way shorter the cycle, the less inventory.

↳ Substitutability - Substitutability very often affects the importance of customer service. In other words, if a product is similar to other product, consumers may be willing to substitute a competitive product if a stockout occurs.

all expenses associated with ordering, holding & managing inventory or stock levels.

→ Inventory Cost - by increasing inventory cost, firms can usually reduce the cost of lost sales.

→ Transportation Effect - A similar relationship exists with transportation as companies can usually trade off increased transportation cost against decreased lost sale cost.

2) Product Relationships

→ Dollar Value - A no. of product aspects have a direct bearing on logistics cost. The dollar value affects the inventory, warehousing, transportation cost, packaging cost, and even handling cost.

→ Density - Another factor that affects logistics cost is density, which refers to the weight / space ratio. An item is lightweight compared to space it occupies.

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- ↳ Susceptibility to Damage - The third product factor affecting logistics cost is susceptibility to damage. The greater the risk of damage, the higher the transportation & warehousing.
- ↳ Special Handling - The fourth factor, related to damage susceptibility but somewhat distinct, is special handling requirement for product. Some product may require specially sized transportation units, refrigeration, heating, which generally increase the logistics cost.