WAREHOUSING & DISTRIBUTION

The Importance & Types of Warehouses.

Warehouses are used to support
- purchasing
- prodn &
- storage activity

The greater the lag between prodn & consumption the larger the qty of inventory required.

Private Warehouses

Warehouses owned by the firm storing the goods.

Private warehouses can enable the firm to better utilize its workforce & expertise (to transph, warehousing & distribution.

Public Warehouses

are for-profit org(s) that contract/lease a wide range of light mnf, warehousing & distribution services. 2 other comp(s)

Services provided by Public Warehouses

① Breakbulk → large qty shipments or broken down so that items can be combined into specific customer orders & then shipped out.

② Repackaging → after breakbulk, items are repackaged for specific customer orders.

③ Assembly → some public warehouses provide final assembly qd to satisfy customer requests & create customized final prod(s)

④ Quality insps → warehouse personnel can perform incoming & outgoing insps.

⑤ Material handling, equipment maintenance & documentation services

⑥ Short-and long-term storage.

RISK POOLING + WAREHOUSE LOCATION.

RISK POOLING

describes the relationship btwn
- the nr of warehouses
- system inventories
- customer service.

∴ Risk Pooling assumes that demand @ the markets served by a warehouse system = negatively correlated (higher-than-average demand in one market area tends 2 be offset by lower-than-average demand in another area).

DIFFERENCES BTWN CENTRALIZED + DECENTRALIZED WAREHOUSING SYSTEMS

① Safety Stock + Average System inventory

- as the firm moves toward a fewer warehouses + more centralized warehousing system, safety stocks ∴ average inventory levels across the system ↓ decreased.

② Responsiveness

- as warehouse centralization increases, ↑ lead times increase, ↑ increasing the risk of late deliveries 2 customers
- reducing the ability of the org 2 respond quickly 2 changes in demand ↓

③ Customer Service to the warehouse

- as centralization increases, ↑ customer service levels provided by the warehouses' suppliers ↑ are likely 2 increase, ↑
- ↓ reducing the likelihood of stockouts for a given level of average system aswi warehouse inventory.

④ Freight costs

- as centralization increases ↑ outbound freight costs increase (@, LTL shipments must travel further 2 reach customers.

⑤ Warehouse System Capital + operating costs

- as centralization ↑ warehouse capital & operating costs ↓ because there are
  - fewer warehouses
  - fewer employees
  - less equipment
  - less maintenance costs.

RISK POOLING AND WAREHOUSE LOCATION

Warehouse location

Types of Location Strategies

① The Market Positioned Strategy

- locates warehouses close 2 customers 2 maximize customer service levels.
- This strategy = recommended when high levels of distribution flexibility and customer service.

② The Product Positioned Strategy

- locates warehouses close 2 sources of supply 2 enable the firm to collect various goods while minimising inbound transportation costs
- This strategy works well when there r large nos of goods purchased from many sources of supply & assortments of goods ordered by customers.

③ The Intermediately Positioned Strategy

- places warehouses midway btwn the sources of supply and the customers.
- This strategy = recommended when distribution service requirements r relatively high & customers order/purchase product assortments from many suppliers.

LEAN WAREHOUSING

LEANER CAPABILITIES

① Greater emphasis on Crossdocking

- warehouse employees receive shipments & mix them quickly into outgoing shipments.
- • fewer goods will be stored
  • average warehouse inventory levels will ↓
  • nr of stockkeeping units will ↑

② Reduced lot sizes + Shipping Quantities.

- inbound and/or outbound shipping qty's are likely 2 be smaller & more frequent containing mixed qty's of goods ∴ requiring more handling.

③ A commitment 2 customers & Service quality.

- warehouse employees must perform warehouse activities so as 2 meet the requirements of their inbound & outbound suppliers + customers.

④ Increased Automation

- 2 improve handling speed & reliability more warehouse activities will become automated:
  - Scanner/barcoding computer tracking systems
  - warehouse management software applications.
  - automated storage & retrieval systems.

⑤ Increased Assembly Operations

- As more firms implement leansystems and mass customisation,
- warehouses will be called upon to:
  1. perform final assembly operations
  2. meet specific customer requirements.

THE IMPACT OF LOGISTICS ON SCM

For global SC's, the logistics function = critical.

- Providing adequate transh + storage
- getting items through customs
- delivering 2 foreign locations in a timely fashion
- logistics pricing

can all impact the ability of a SC 2 serve the foreign market competitively.

In many cases firms are forced 2 use outside agents or 3rd-party logistics providers (3PLs) 2 mov items into foreign locations effectively.

OTHER TRANSPORT INTERMEDIARIES

① Freight Forwarders

- Freight Forwarders consolidate large nrs of small shipments ② fill entire truck trailers or rail cars ③ achieve truckload / car load rates.
- ∴ Freight Forwarders provide valuable ↓$ services 2 both the shipper (lower shipping prices) and the carrier (extra business & higher equipment utilization)
- These comp(s) can also provide
  - documentation services
  - special freight handling
  - customs clearance.

② Transportation Brokers

- Also referred to as load brokers ~~freight brokers~~
- Transp brokers bring shippers + transp companies together.
- Transp brokers r legally authorized to act on the shippers behalf

typically these comp(s) are hired because of their extensive knowledge of the many transp alternatives available

or

simply due 2 many shippers needing transp.

OTHER TRANSPORTATION INTERMEDIARIES

③ Shippers' Associations

→ The American Institute for Shippers' Associations (AISA) defines Shippers' Associations as

"non-profit membership cooperatives which make domestic / international arrangements for the movement of members' cargo"

→ ∴ Their job = 2 consolidate only their members' shipments into full

- carloads
- truckloads or
- container loads

2 achieve volume discounts for the members

2 negotiate for improved terms of service.

→ These associations also benefit the transph comp(s) in that they help 2 better utilize their equipment.

④ Intermodal Marketing Companies (IMC)

- IMCs or comp(s) that act as intermediaries between intermodal railroad comp(s) & shippers.
- They typically purchase large blocks of flatcars for piggyback service & then find shippers 2 fill containers or motor carriers with truckloads 2 load the flatcars.
- Essentially these are transp2 brokers for the rail industry.