

## Logistics Final Study Guide

- Logistics Utilities
  - Economic Utility- value or usefulness of a product in fulfilling a customer need/want
  - Possession utility- the value or usefulness that comes from a customer being able to take possession of a product.
  - Form utility- a product's being in a form that can be used by the customer and is of value to the customer.
  - Place utility- having products available where they are needed by customers (products moved from points of lesser value to points of greater value).
  - Time utility- having a product when it is needed by a customer
- Council of Supply Chain Management Professionals defines logistics as that part of supply chain management that plans, implements, and controls the efficient, effective forward and reverse flow and storage of goods, services, and related information between the point of origin and the point of consumption in order to meet customer requirements.
- Logistics has gained importance for the following reasons
  - A reduction in economic regulation: more flexibility in price and service, which is important to logistics.
  - Changes in consumer behavior: customers expect something more tailored to their personal preferences. Families are changing. Expectations of service are rising.
  - Technological advances: disintermediation is the removal of intermediaries between customers and producers. Productivity has improved with the increase in technology.
  - Growing power of retailers: big-box retailers (stores with large floor space and capacity) are taking over.
  - Globalization of trade: shipping containers are becoming more prevalent. Citizens of other countries are gaining more buying power, which increases the demand for goods over seas.
- Systems Approach- indicates that a company's major objectives can be realized by recognizing the mutual interdependence of the major functional areas of the firm, such as marketing, production, finance, and logistics. One logistics system does not fit all companies.
- Stock Keeping Unit (SKU)- line items of inventory offered for sale by many companies.
- Total cost approach- built on the premise that all relevant activities in moving and storing products should be considered as a whole, not individually. Deals strongly with cost trade offs.
- How do logistics interact with other functional areas?
  - Finance- allocates funds to logistics projects. Also can add items to inventory in times of inflation.

- o Production- length of production runs, production of inventory quantity, postponement (delaying value added activities such as assembly, production, and packaging).
  - o Marketing- place decision, price decision, product decision, promotion decisions
- Activities in the logistical channel:
  - o Customer service
  - o Demand forecasting
  - o Facility location decisions
  - o International logistics
  - o Inventory management
  - o Material handling
  - o Order management
  - o Packaging
  - o Procurement
  - o Reverse logistics
  - o Transport management
  - o Warehousing management
- Demand Management- the creation across the supply chain and its markets of a coordinated flow of demand. Key component is demand forecasting, which helps with make-to-stock and make-to-order situations.
  - o Judgmental forecasting- using judgment or intuition and is preferred in situations with little or no historical data.
  - o Time series forecasting- future demand is solely based on past demand.
  - o Cause-and-effect forecasting- one or many factors related to demand that can be used to estimate future demand.
- Order Management- refers to the management of the order cycle, which is the time from when a customer places an order to when the order is received. Strongly related to demand forecasting. Has 4 parts...
  - o Order transmittal- the time form when the customer places an order until the seller receives the order. Can happen via in person transaction, mail, by phone, by fax machine, or electronically.
  - o Order processing- the time form when the seller receives the order until an appropriate location is authorized to fill the order. Many aspects of this are computerized now. Order triage is classifying orders according to pre-established guidelines so that a company can prioritize how the order should be filled.
  - o Order picking and assembly- all activities from when an appropriate location is authorized to fill the order until the goods are loaded aboard the outbound carrier. Pick efficiency goes up with technology.
  - o Order delivery- the time when the transportation carrier picks up the shipment until the customer receives it.

- Customer profitability analysis- refers to the allocation of revenues and costs to customer segments or individual customers to calculate the profitability of the segments or customers. CPA suggests different customer segments consume different types or resources.
- Customer service is measured through four different categories:
  - Time- order cycle time, inquiry response time
  - Dependability- perfect order, on-time delivery
  - Communication- customer complaints, order status information
  - Convenience- returns process, response to emergency situations
- Inventory Classifications are as follows...
  - Cycle (base) Stock- inventory that is needed to satisfy normal demand during the course of an order cycle.
  - Safety (buffer) Stock- inventory that is held in addition to cycle stock to guard against uncertainty in demand or lead-time.
  - Pipeline (in-transit) Stock- inventory that is en route between various fixed facilities on a logistics system.
  - Speculative Stock- inventory that is held for several reasons, such as seasonal demand, projected price increases, and potential shortages or product.
  - Psychic Stock- inventory carried to stimulate demand.
- Inventory carrying (holding) costs- the cost associated with holding inventory. Carrying costs are considered to be 25% of the inventory. Inventory shrinkage is the fact that more items are recorded entering the warehouse than leaving the warehouse, because of things like theft and damage. Insurance costs factor into inventory costs.
- Ordering costs- costs associated with ordering inventory, such as order costs and setup costs.
- Ordering costs and holding costs are inverses.
- Stockout- when a customer demand is not immediately available in stock.
- Stockout costs- estimating the costs or penalties for a stockout. This involves an understanding of a customer's reaction if the company experiences a stockout. Examines customer's responses to the stockout, such as placing an order on back order, saying they'll come back, or going to a competitor.
- When To Order: different companies use different systems for ordering, which include fixed order quantity system, fixed order interval system, reorder (trigger) point (factors in the daily demand and length of the replenishment cycle).
- Economic Order Quantity- the typical inventory order size problem. Calculates the order quantity based on the ordering costs and the holding costs. Determines the point where the sum of carrying costs and ordering costs are minimized.
  - Always a condition of uncertainty when ordering items based on the EOQ
- Inventory turnover- the number of times inventory is sold in a one-year period, and can be calculated by dividing the cost of goods sold by the