

Inventory Model

Inventory

- Any stored stock of resource/items used to satisfy the current or future needs

Inventory Model

- The model that analyzes the lead-time, ordering cost, carrying cost and shortage costs and selects the optimal size of inventory
- Classify according to need, time and money

Considers Inventory models is **concerned with** two basic decisions:

- how much to order
- when to order or reorder to maintain sufficient levels of inventory in an attempt to minimize total inventory costs.

The **main objective** is to minimize total variable cost over a specified time period

Two main Models

- EOQ (Economic Order Quantity)
- Just In Time(JIT)

Inventory Model

- Inventory has the large assets of any company (about 40-60% of a company)
- Inventory model helps in decision making on:
 - **When to order**
 - **How much to order**
- Inventory model helps to minimize the inventory cost i.e. (Carrying cost and Storage cost)
- EOQ (Economic Order Quantity) model: It is the order quantity that minimizes total inventory holding costs and ordering costs. It is calculated by using formula

$$Q = \frac{\sqrt{2 * T * F}}{Cc}$$

- Just In Time (JIT) model

Transportation Model

Transportation modeling is an iterative procedure for solving problems that involve minimizing the freight cost from a series of sources to a series of destinations.

OBJECTIVE

The objective is to satisfy the demand at destinations from the supply constraints at the minimum transportation cost possible.

The model is useful for making strategic decisions involved in selecting optimum transportation routes so as to allocate the production of various plants to several warehouses

Things to be remembered.....

Example

Coca Cola Enterprises Shares the secret to reducing transportation costs by \$45M a year implementing ORTEC's advanced planning software.

Example of transportation model

- Coca cola reduced its transportation cost to \$45 million by using ORTEC'S technique.
- Coca cola has 13,000 vehicles in 1986 to 54,000 today.
- Coca cola needed to improve its Direct Store Delivery (DSD) model so that the cost can be reduced.
- ORTEC's delivery route optimization software, is a planning and execution software that assists organizations in optimizing load distribution, maximizing customer service levels and increasing visibility.
- ORTEC software determines the ideal truck loads and delivery routes.
- In 2007, Coca-Cola Enterprises and ORTEC were nominated for the prestigious Franz Edelman Award – 'outstanding examples of Operational Research based projects'.

Motivation Case Study (Conclusion)

- ♦ Explain to Few
- ♦ Loan->Salary
- ♦ Motivation speakers
- ♦ Expert help