

WAREHOUSE AND INVENTORY PLANNING

INVENTORY MANAGEMENT

by

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Chapter Content

- 7.1 Functionality & Definitions
- 7.2 Inventory models
- 7.3 Inventory Carrying Cost



EXPECTED OUTCOME

To identify contemporary approaches to managing inventory

5



To discuss special concerns with inventory management

1



Diagram X

To identify types of inventory

3



To identify function of inventory.

2



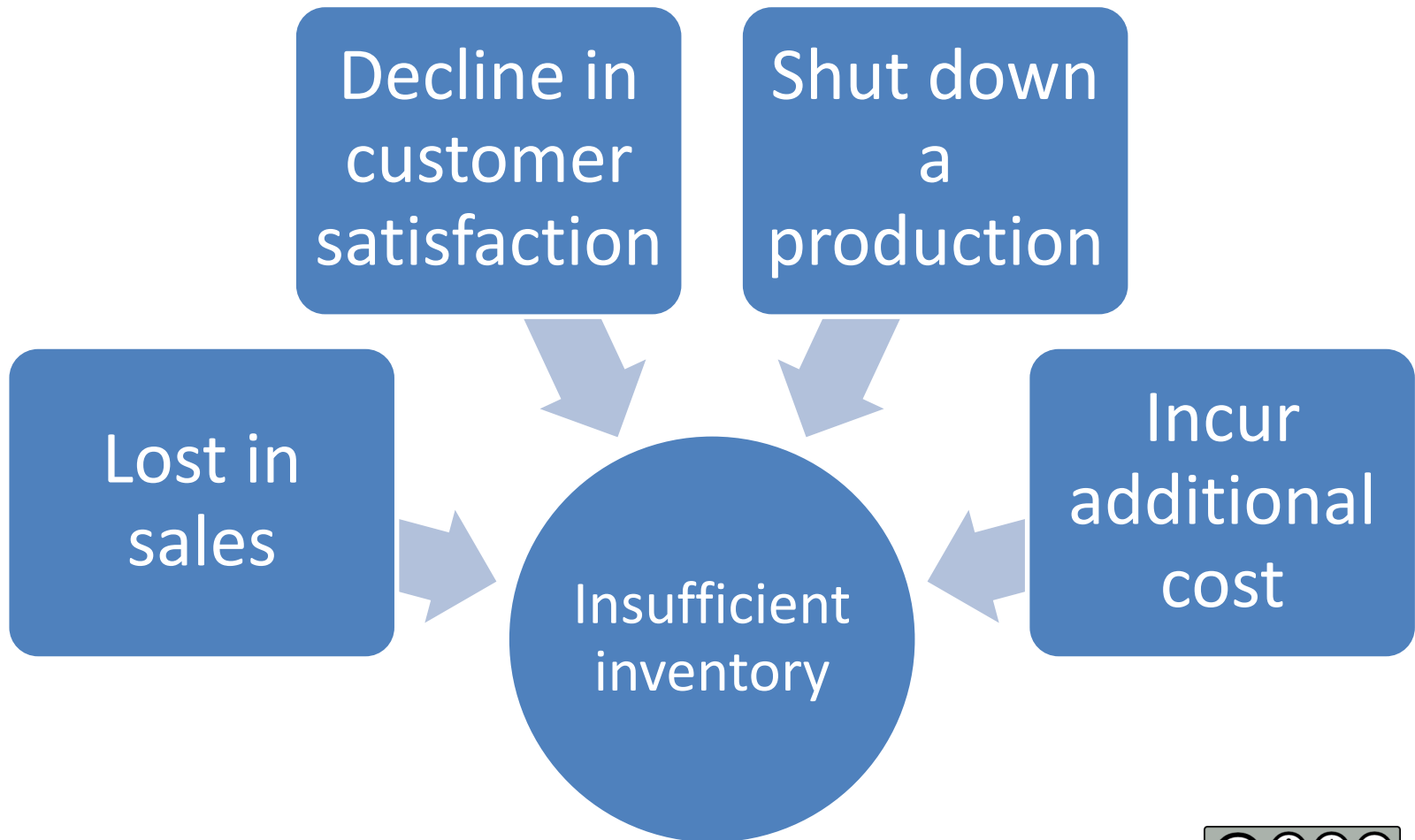
INVENTORY MANAGEMENT

- **Inventory** can be defines as a materials or goods that being hold for certain amount of time and its can be used for many purposes
- Objectives of holding stocks may different from one department to other department

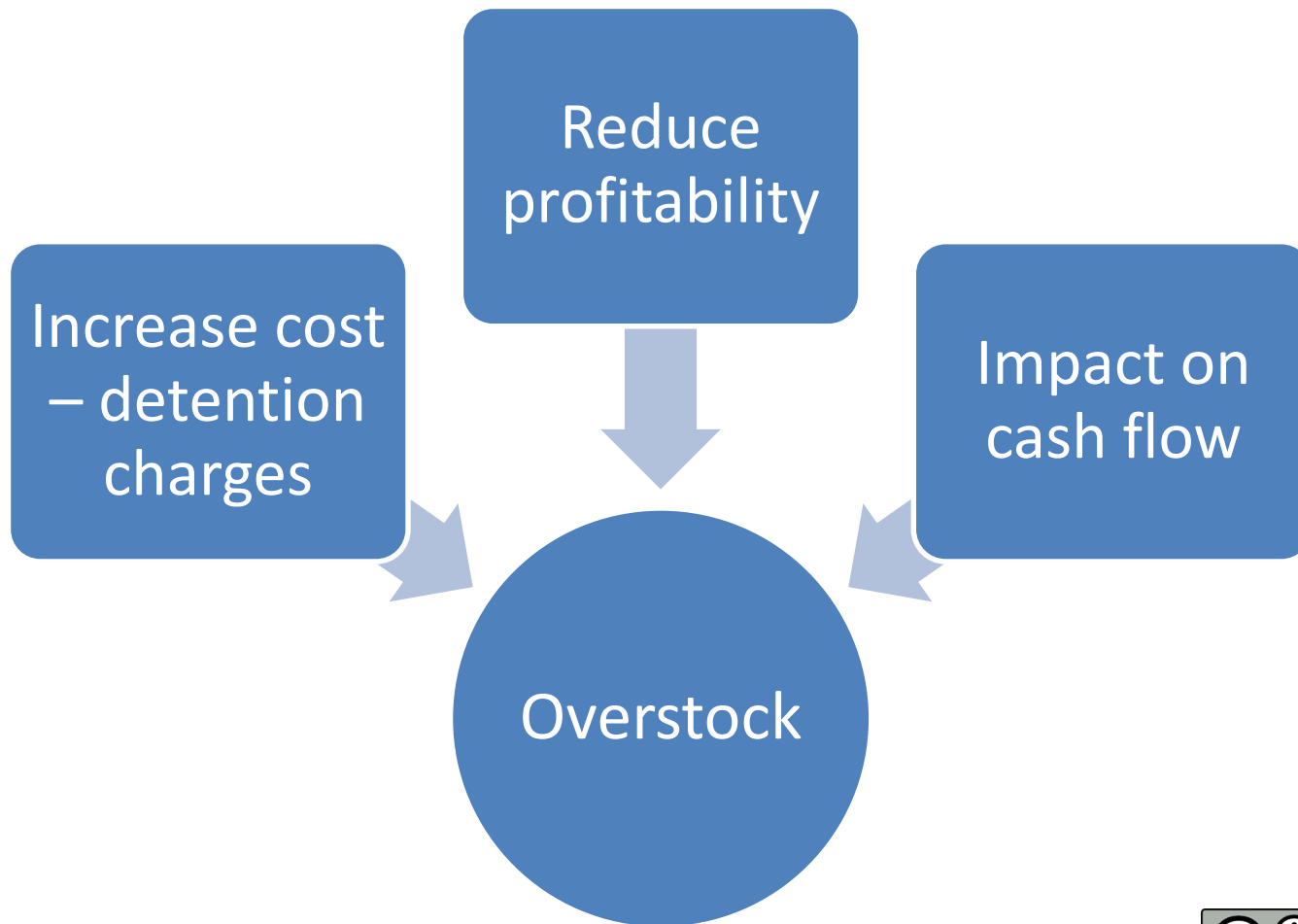
Example: marketing department, finance department, Production department



INVENTORY MANAGEMENT



INVENTORY MANAGEMENT



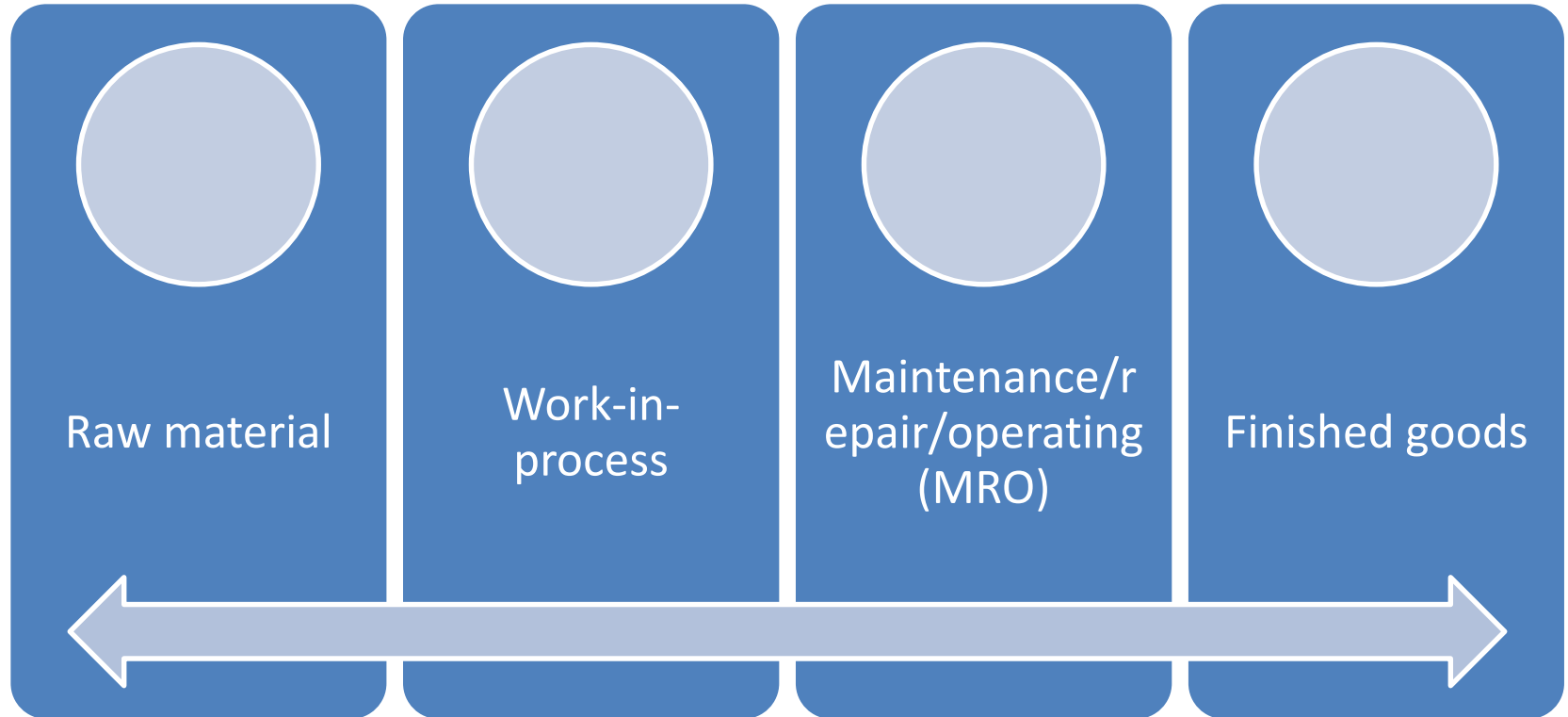
INVENTORY MANAGEMENT

Types of Inventory

- Raw material
 - Purchased but not processed
- Work-in-process
 - Undergone some change but not completed
 - A function of cycle time for a product
- Maintenance/repair/operating (MRO)
 - Necessary to keep machinery and processes productive
- Finished goods
 - Completed product awaiting shipment



INVENTORY MANAGEMENT



Inventories in the Supply Chain



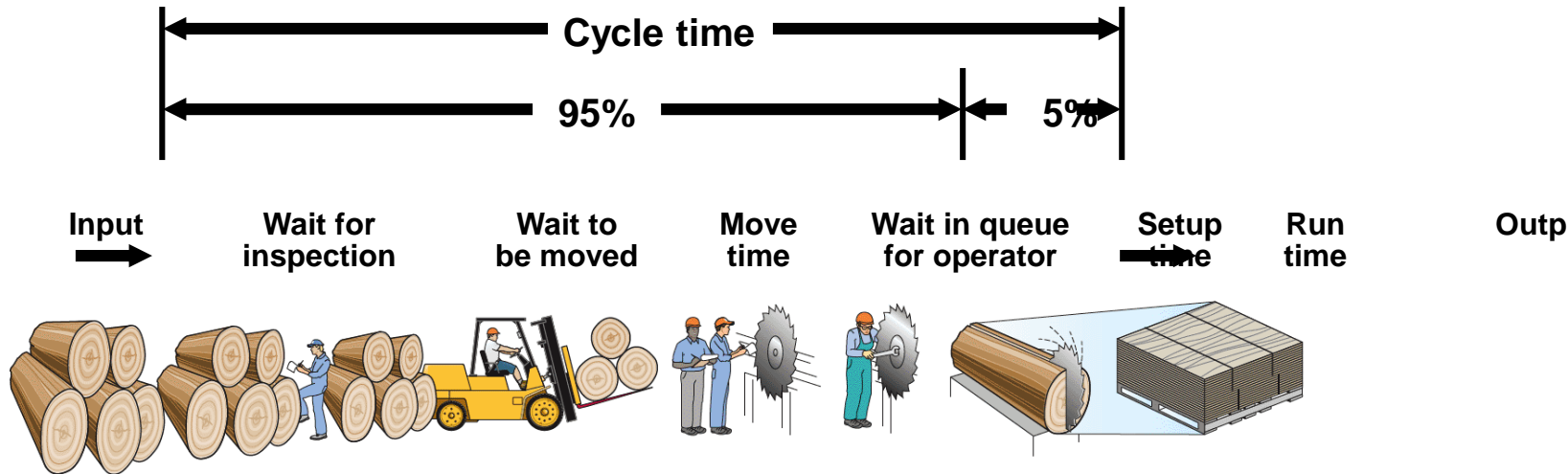


Figure 12.1



Function of Inventories

*Demand
Fluctuation*

Predictability

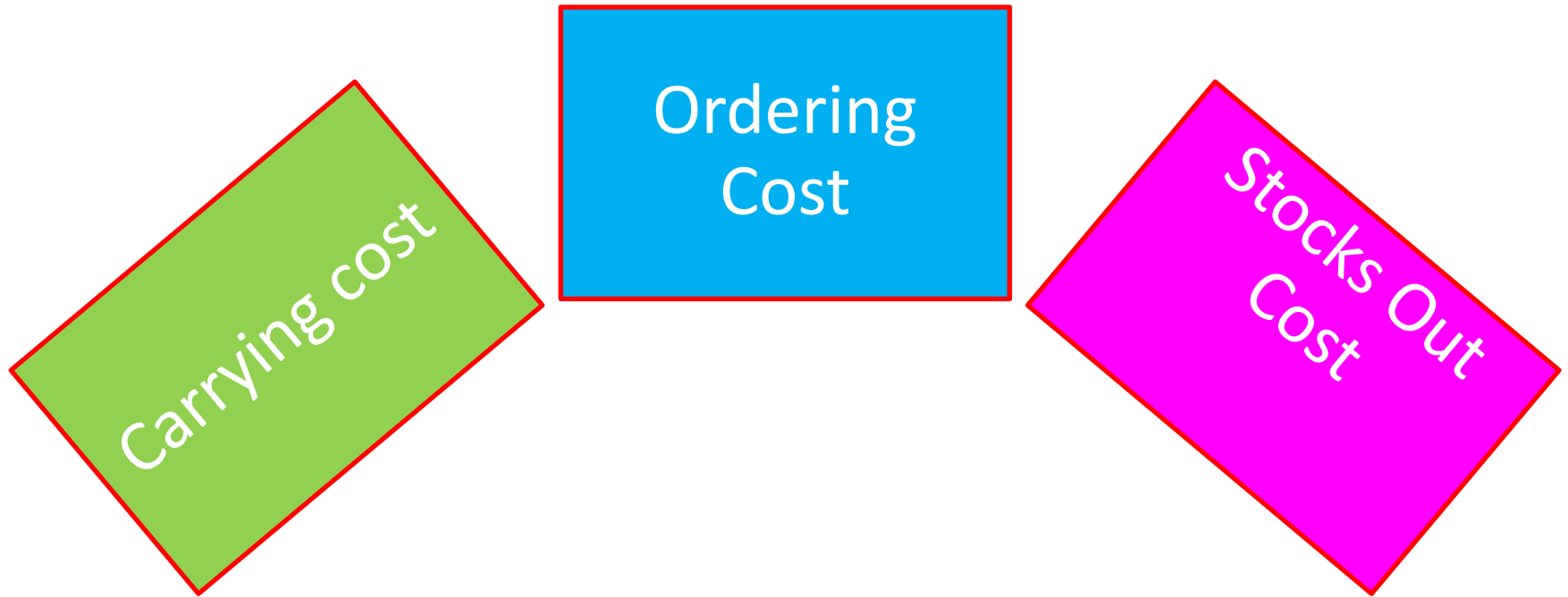
*Quantity
Discounts*

*Lower
Ordering Cost*

*Unreliability
of supply*



Inventory Cost



Inventory Cost

- Calculations:

Ordering Cost = # of orders per year X ordering costs per order

Carrying Cost = average inventory x carrying cost per unit

Example: Suppose weekly demand is 100units, order cost per order is \$80, the value an item is \$50 and carrying cost is 20 percent of the value an item.

Inventory Classifications

Cycle / base Stock

Safety / Buffer Stock

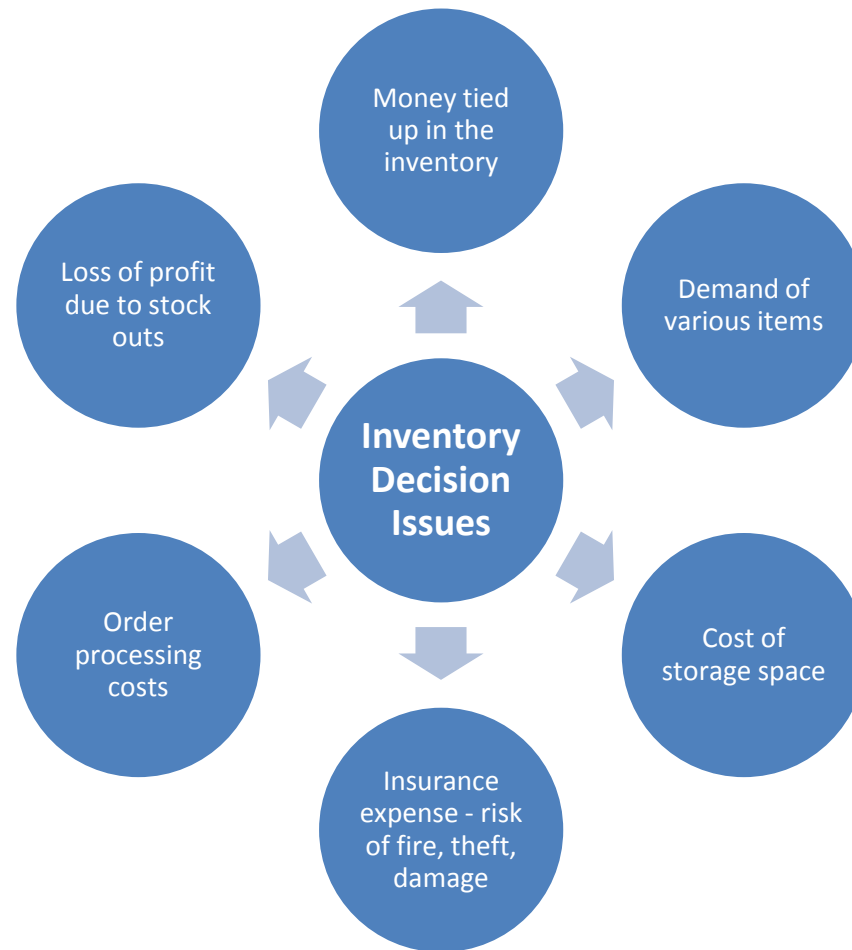
Pipeline / in-transit Stock

Speculative Stock

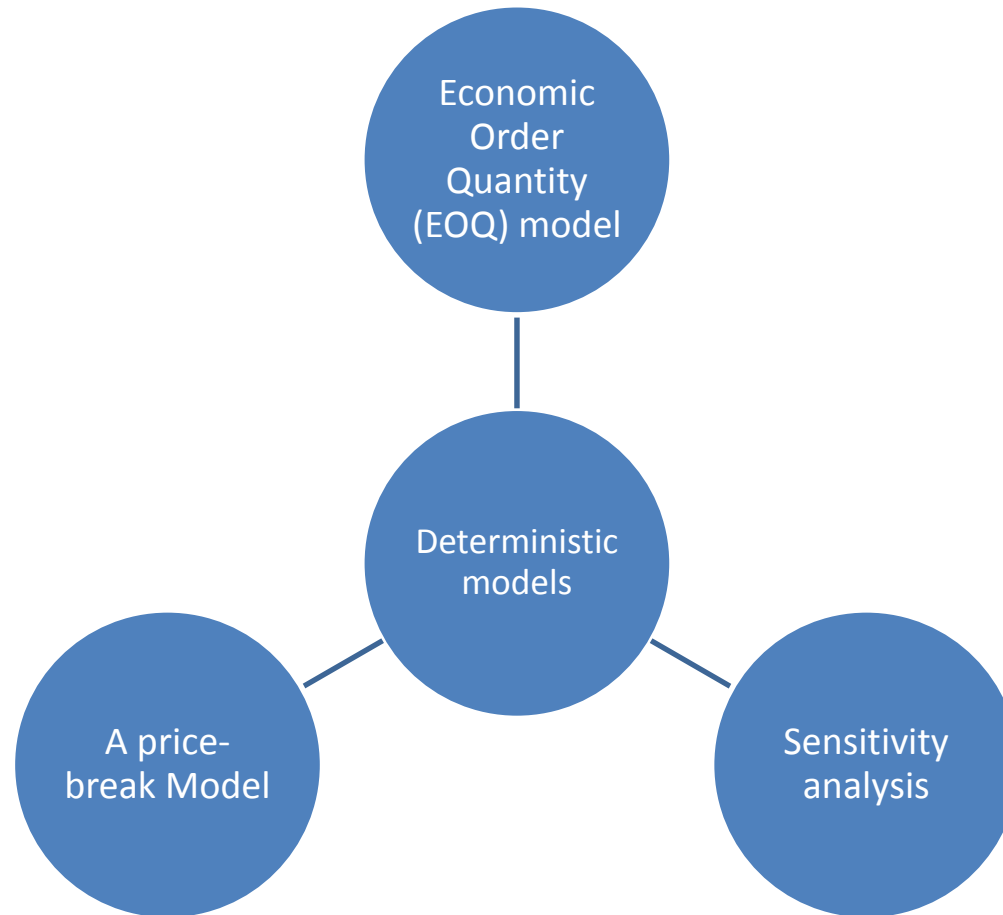
Psychic Stock



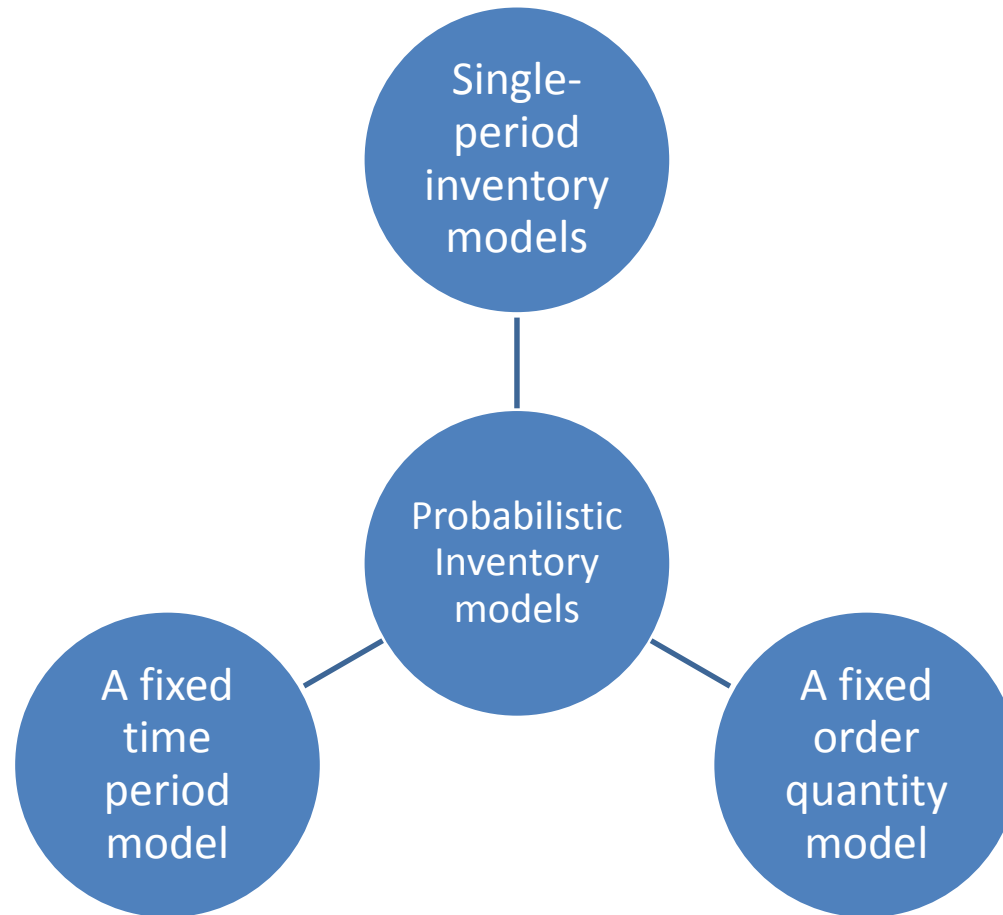
Inventory Decision Issues



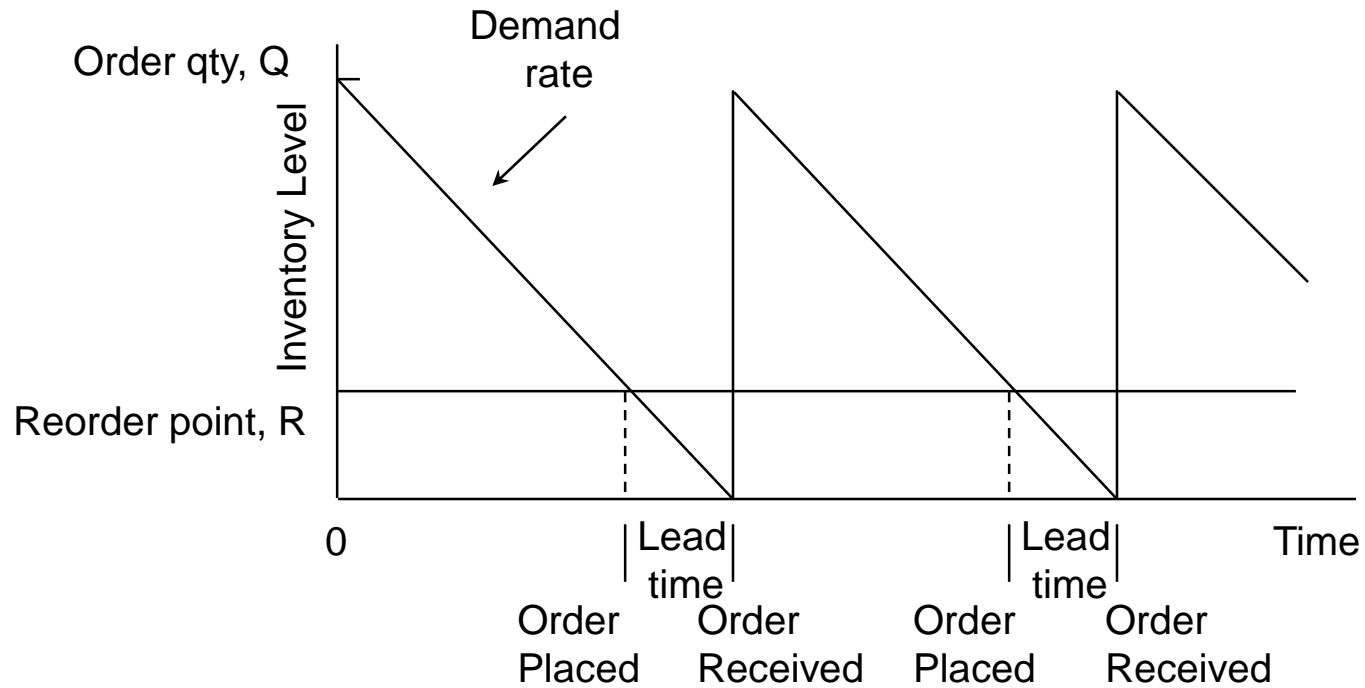
Inventory Model



Inventory Model



THE EOQ MODEL



Assumptions of the EOQ Model

1. Know exactly the demand and demand is consistent
2. Aware on the lead time and lead time is not fluctuate
3. Receipt of inventory is instantaneous
4. No quantity discounts
5. Variable costs are limited to: ordering cost and carrying (or holding) cost
6. If orders are placed at the right time, stockouts can be avoided



EOQ Model

D - annual demand

Q - order quantity

S - cost of placing order

H - annual per-unit holding cost

$$Q^* = \sqrt{\frac{2DS}{H}}$$

Ordering cost = SD/Q

Holding cost = $HQ/2$

Total cost = $SD/Q + HQ/2$



Conclusion of The Chapter

