

# Chapter 12

- Use of Information Technology in Inventory Management



# Integrated Management Information System for MM

- Efficiency of organization functioning depends on continuous process of information flow which achieved using integrated management information system
- Integrates Forecasting, Materials Planning, Purchasing, Warehousing, Inventory Management

# Inter-related activities in Materials Management

- Forecasting
- Materials Planning
- Purchasing
- Warehousing
- Inventory Management

# Aspects of Computer Application in Purchasing

- Creation of supplier data base
- Sourcing evaluation
- Supplier performance evaluation
- Supplier performance history
- Maintenance of product specification
- Purchase order release
- Order status
- Purchase order follow up
- Analyzing price cost data
- Payment to supplier
- Invoices
- Order acknowledgement

# Computer Applications involved in Inventory Control

- Periodic valuation of inventory
- Inventory status and stores ledger
- Exception reports of high / low stocks and re-order level
- ABC analysis
- FSN Analysis
- XYZ Analysis
- MRP-I Output Reports
- MRP-II Output Reports
- WIP Inventory Status
- Finished Goods Inventory Status

# Objective of Integrated Management Information System

- Accuracy in reporting demand and inventory
- Ensuring fast response to changes in environment such as changes either in supply or price of materials, changes in customer taste and so on
- Measuring performance of functions such as purchasing, sourcing, vendor rating and inventory control

# Exceptional Reports obtained for Managerial Control

- Items for which consumption exceeds the norms
- Items short supplied
- Items for which price is anticipated to increase
- Items out of stock
- Items exceeding maximum stock levels
- Obsolete items / Non-Moving Items

# Limitations of Computer Applications in MM

- Need for a disciplined database for successful operations of the computer system
- Need for expensive infrastructure facilities such as air-conditioning, dust-free atmosphere, storage space, fire protection, UPS break-up may increase the expenses involved



# Material Activities Performed using Computer Based System

- Maintenance of Inventory Records
- Computation of order quantities
- Preparation of Purchase and Stores requisitions for inventory items
- Preparation of enquiries for obtaining quotations
- Preparation of Purchase orders
- Preparation of material shortage reports

# Computer Hardware used in Computer-Based Inventory Management System

- Main Frame System
- Mini Computer
- Micro Computers

# Objective of Area of Application of Information Technology in Inventory Management

- Periodic valuation of inventory
- Selective Inventory Control such as ABC Analysis, XYZ Analysis, VED Analysis, HML Analysis, FSN Analysis
- Inventory Status Reports and Stores Ledgers
- Exception reports of high/low stocks
- Consumption analysis
- Computation of EOQ, safety stocks and re-order levels
- MRP-I Output Reports

# EOQ Formula

■ EOQ =

$$\sqrt{\frac{2 \times D \times C_o}{p \times C_i}}$$

# In above EOQ Formula, Whereas

- $D$  = Annual Demand in Units
- $C_o$  = Ordering Cost per Order
- $p$  = Unit Price of the item
- $C_i$  = Inventory Carrying Charges expressed as a percentage of the value of the average inventory

# Phases of MRP System

- MRP Inputs
- MRP Processing
- MRP Outputs

# MRP Inputs

- Master Production Schedule (MPS) file
- Bill of Materials File or Product Structure File
- Inventory Status File

# MRP Outputs

- Primary Reports
- Secondary Reports



# Primary Reports

- Planned Orders
- Order Releases
- Changes to Planned Orders

# Secondary Reports

- Performance Control Reports
- Planning Reports
- Exception Reports

# Software for Inventory Control

- IMPACT by IBM
- INFOREM by IBM
- MAPICs by IBM
- MICROSOFT PROFIT
- SAP
- BAAN
- INTEGRAACC by PC SOFT

# Role of IT in Inventory Management

- e-mail
- e-Purchase
- e-commerce
- E-business
- EDI
- B2B
- B2C