

UNIT – IV

ERP MODULES /FUNCTIONALITY

Syllabus

- Sales-order-processing,
- Scheduling,
- Forecasting,
- Distribution,
- Finance,
- Features of each of the modules and description of data flows across module,
- Overview of the supporting databases,
- Technologies required for ERP.

Finance module

- It gives the financial functionality and analysis support to business process.
- The financial modules of most ERP systems will have the following subsystem
 - **Financial accounting**
 - **Investment management**
 - **Controlling**
 - **Treasury**
 - **Enterprise Controlling**

Financial accounting

Financial accounting is concerned with the collection, filling and storage of financial data. The recording of business transactions in the books of account. The application of the accounting concepts.

- General ledger**
- Accounts Receivable and Payable**
- Asset Accounting**
- Legal Consolidation**

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Investment management

- **Investment** is a sacrifice in the present in the expectation of a future gain.
- **Investment management** is the art of administering the employment of money in financial instruments (are bonds, loans and deposits called as cash instruments) in the present, with the expectation of a positive rate of return in the future.

Task of Investment management

- Investment planning
- Budgeting
- Controlling
- Depreciation forecast
- Simulation
- calculation

Controlling: the controlling system gathers the functions required for effective internal cost accounting.

- **Overhead Cost Controlling**
- **Cost Center Accounting**
- **Overhead Orders**
- **Activity-Based Costing**
- **Product Cost Controlling**
- **Cost Object Controlling**
- **Profitability Analysis**

Treasury: A treasury is any place where the currency or items of high monetary value are kept. The head of a Treasury is typically known as a Treasurer.

- **Cash Management**
- **Treasury Management**
- **Market Risk Management**
- **Funds Management**

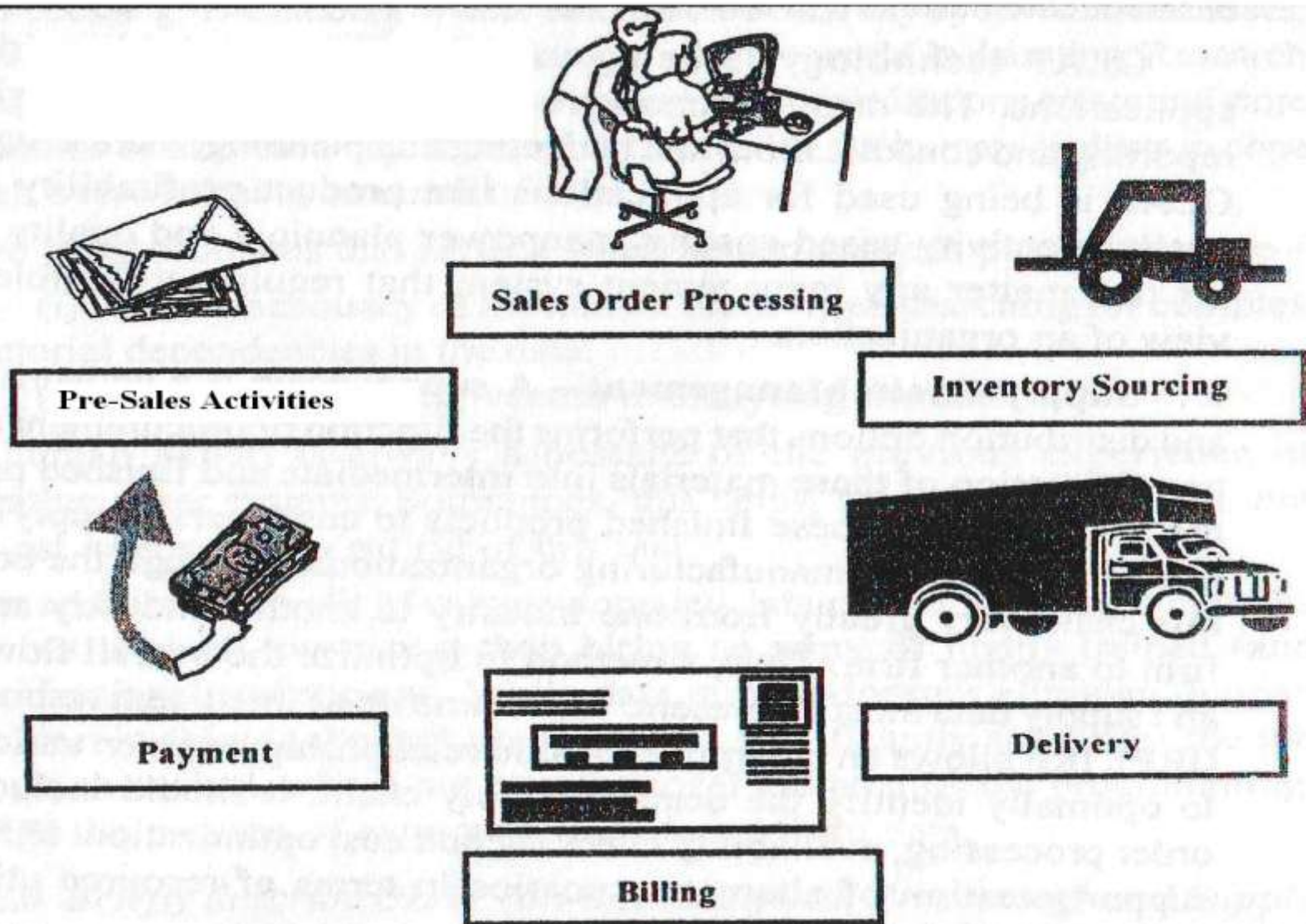
Enterprise Controlling

- **Executive Information System**
- **Business Planning and Budgeting**
- **Profit Centre Accounting**

SALES-ORDER-PROCESSING

- An ERP system can improve the sales order process in several ways.
- Since ERP system use a common database, they can minimize data entry errors and provide accurate information in real time to all users.
- An ERP system can also track all transactions involved in sales order.

The sales and Distribution Process



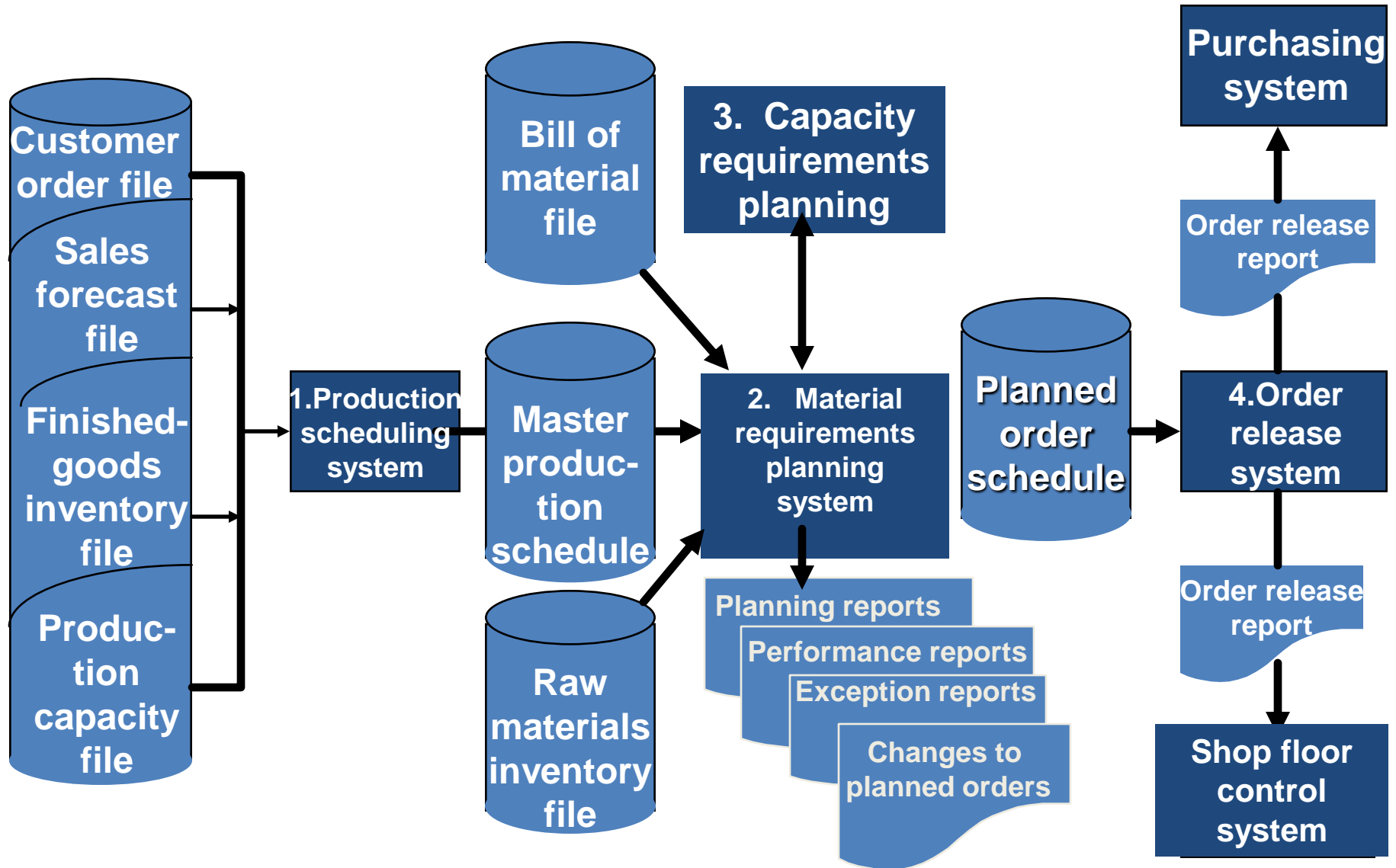
SALES-ORDER-PROCESSING

- **Pre-sales Activities**
- **Sales Order Processing**
- **Inventory Sourcing**
- **Delivery**
- **Billing**
- **Payment**

Material Requirement Planning (MRP)

- Material requirements planning utilizes software applications for scheduling production processes.
- MRP generates schedules for the operations and raw material purchases based on the production requirements of finished goods, the structure of the production system, the current inventories levels and the lot sizing procedure for each operation.

An MRP System



Material Requirements Planning (MRP)

Components:

1. Production scheduling system -- produces a master production schedule that encompasses the longest lead time plus the longest production time.
2. MRP system -- explodes the bill of materials. Converts the gross requirements into the net requirements.

MRP Components (continued)

3. Capacity requirements planning system works with MRP system to keep production within plant capacity. Produces outputs: reports and planned order schedule.
4. Order release system produces reports for shop floor and purchasing.

SCHEDULING

- Scheduling is committing resources to the realization of an event at a defined time.
- Scheduling is committing resources to a plan.

Purpose of scheduling

- Minimize the production cost
- Minimize the production time
- Maximize the efficiency of the operation

- Companies use backward and forward scheduling to allocate
 - Plant and machinery resources
 - Plan human resources
 - Plan production processes
 - Purchase materials

Forecasting

- **Forecasting** is the process of estimation in unknown situations.
- It is one of the oldest mathematical activities in business.
- It was done years before the computer, using desk calculators.
- The computer enabled the forecasters to make the calculations much more quick and easy.

Forecasting Methods

- Quantitative forecasting methods
- Non-quantitative (qualitative) methods

- Quantitative forecasting methods
 - Trend analysis
 - Moving average
 - Exponential smoothing

Trend analysis

- An aspect of technical analysis that tries to predict the future movement of a stock based on the past experience.
- Trend analysis is helpful because moving with trends and not against them, will lead to profit for an investors.

Moving average

- Very simple method is to take a average.
- Consider the example; the demand for a product for 6 months is shown below.
- Calculate the three month moving average for each month and forecast the demand for 7th month.

Month:	1	2	3	4	5	6
Demand :	42	41	43	38	35	37

Solution

- The moving average for the 3 months

$$M3 = (42+41+43)/3 = 42$$

And the moving average for the other months is given by

$$M4 = (41+43+38)/3 = 40.7$$

$$M5 = (43+38+35)/3 = 38.7$$

$$M6 = (38+35+37)/3 = 36.7$$

Hence the demand forecast for month 7 is 3670.

Exponential smoothing

- One disadvantage of using moving averages for forecasting is that in calculating the average all the observations are given equal weight.
- In exponential smoothing, gives greater weight to more recent observations and takes into account all previous observations.

$$M_t = M Y_t + (1-M) M_{t-1}$$

Y_t current value

M_{t-1} previous exponentially smoothed moving average.

M smoothing constant

If $M=0.2$ then this indicates that 20% of the weight in generating forecasts is assigned to the most recent observation and the remaining 80% to previous observations.

Month:	1	2	3	4	5	6
Demand :	42	41	43	38	35	37

- $M_1 = Y_1 = 42$ (always start with $M_1 = Y_1$)
- $M_2 = 0.2Y_2 + 0.8M_1 = 41.80$
- $M_3 = 0.2Y_3 + 0.8M_2 = 42.04$
- $M_4 = 0.2Y_4 + 0.8M_3 = 41.23$
- $M_5 = 0.2Y_5 + 0.8M_4 = 39.98$
- $M_6 = 0.2Y_6 + 0.8M_5 = 39.38$

The forecast for month 7 is 3938 units.

Non-quantitative (qualitative)

- Panel consensus
- Delphi method
- Electronic meeting system (EMS)

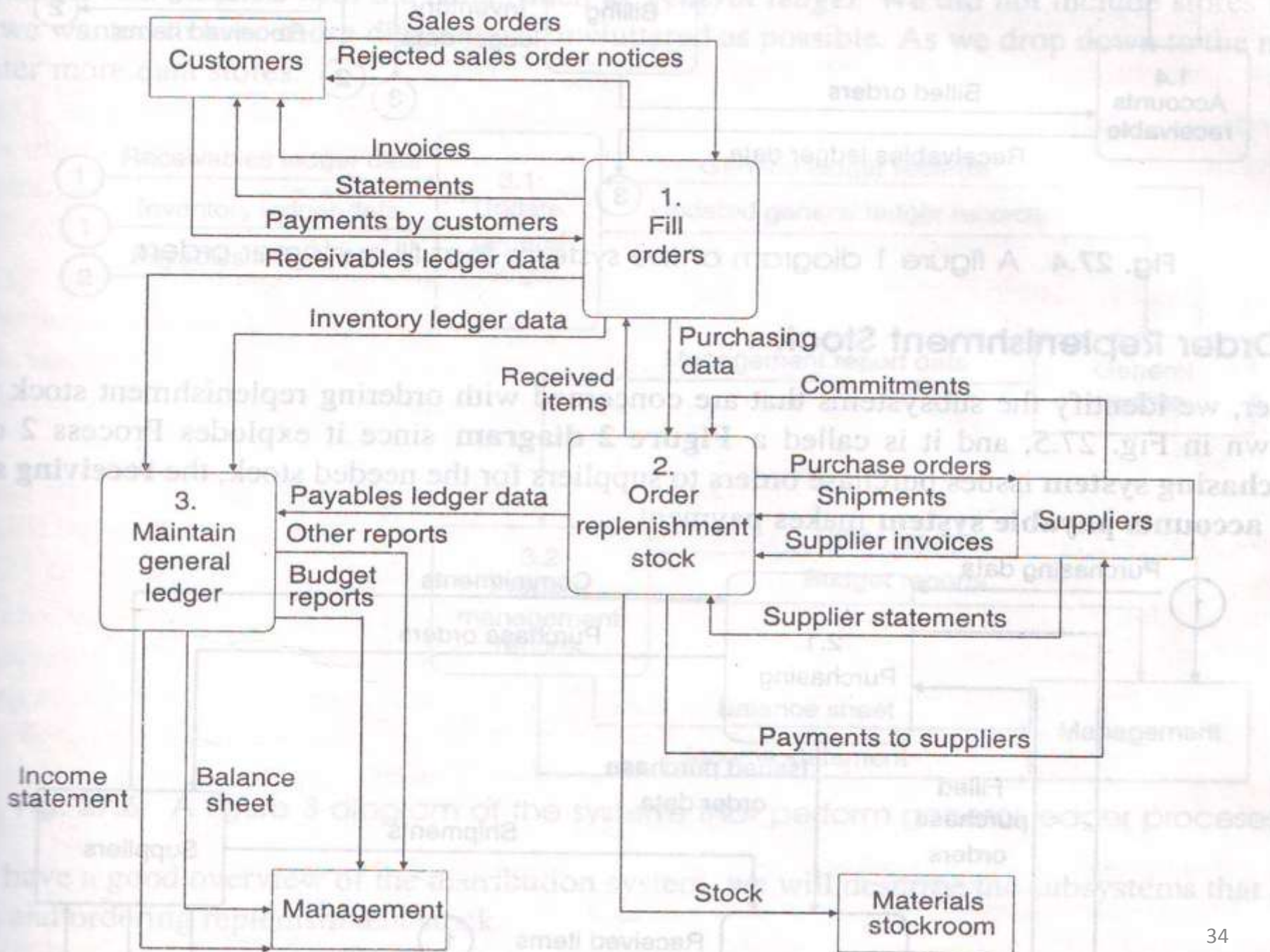
DISTRIBUTION

- A distribution firm is the firm that distributes products or services to their customers.
- We call the system the distribution system.

- The entire system is represented by the upright rectangle in the centre.
- The environmental elements of the distribution system include:
 - Customers
 - Suppliers
 - Materials stockroom
 - Management

The distribution system consists of

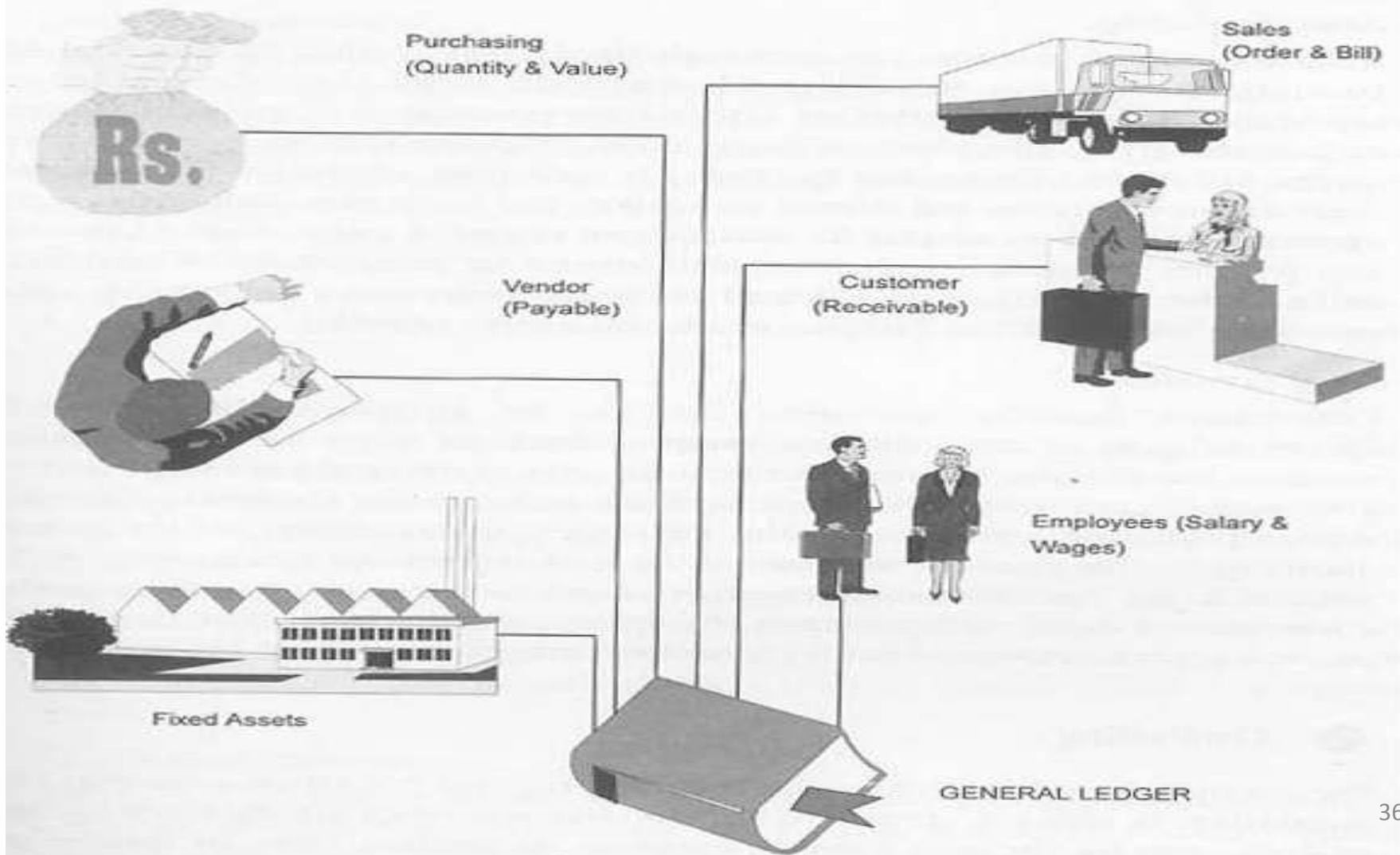
- **Sales order:** the order that the firm receives from its customers.
- **Purchase order:** the orders that the firm places to its suppliers are called purchase orders.
- **Verbal commitments:** in some cases the firm will first obtain verbal commitments from its suppliers before the purchase orders are prepared.
- **Rejected sales orders:** very often the firm will have to send rejected sales order notices to customers-perhaps their credit rating is bad. Suppliers also send rejected sales order notices to firm.
- **Invoices:** both the firm and its suppliers use invoices to advice customers how much money they owe, and statements to collect unpaid bills.
- **Payments:** both the firm and its customers must make payments for their purchases.



FINANCE

- The financial modules provide financial functionality and analysis support to thousands of businesses.
- The finance modules will have the following subsystem:
- **Financial accounting**
 - **General ledger**
 - **Accounts Receivable and Payable**
 - **Asset Accounting**
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Typical General Ledger



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FEATURES OF EACH OF THE MODULES AND DESCRIPTION OF DATA FLOWS ACROSS MODULE

