Chapter- 5

Business Arithmetic

COSTING AND PRICING

UNIT SALES

- Unit sales can be defined as the measure of the unit in which the products are sold.
- Unit of sale is a management tool that is required to understand the economies of the business in an easy and standardized way and for tracking progress over several years and taking corrective actions, when necessary.

UNIT COST

- This can be defined as the cost incurred by a company to produce, store, and sell one unit of a particular product or service.
- Unit cost refers to the variable cost like raw material, packing material, sales commission, freight, etc.

UNIT PRICE

- It is the price at which one unit is sold.

GROSS PROFIT

- Excess of unit price over unit cost is known as the unit gross profit or gross profit margin.
- This represents the business's profit from selling a product before deducting overheads or fixed expenses.
- Gross profit per unit = unit price _ unit cost

BREAK-EVEN ANALYSIS

- This analysis refers to a system of determination of that level of activity where total cost equals the total selling price.
- It portrays the relationship between the cost of production, the volume of production, and the sales value.
- Total revenue = total expenses
- (Quantity sold X unit price) = (Quantity sold X unit cost) + fixed expenses

- Quantity sold X (unit price – unit cost) = fixed expenses
- Quantity sold X gross profit per unit = fixed expenses

WHY SHOULD AN ENTREPRENEUR KNOW ABOUT BREAK- EVEN POINT?

- The Break-even point is the point of production at which total sales equal to the total cost. It is the condition of 'no profit, no loss' for an enterprise.
- The profitability of products business can be known.
- The effect of changes in cost and selling price can be demonstrated.
- Cost control can be exercised.
- Forecasting and planning are possible.

RELATED TERMS

- CONTRIBUTION
  - It refers to the excess of selling price over the variable cost. It is also referred to as gross margin.
  - Contribution= selling price _ variable cost, fixed cost + profit
- PROFIT/ VOLUME RATIO
  - The ratio establishes a relationship between the contribution and the sale value.
  - p/v ratio = contribution/ sale, change in contribution/ change in sale

BREAK-EVEN QUANTITY FOR A SINGLE PRODUCT

- Break-even quantity for a single product = fixed cost/ contribution per unit
- Contribution per unit = unit price – unit cost

BREAK-EVEN QUANTITY FOR MULTIPLE PRODUCTS

- Break-even quantity for a business dealing in multiple products =
- Fixed expenses/ weighted average contribution per unit
- Weighted average contribution per unit = weighted average selling price per unit _ weighted average variable cost per unit

BREAK-EVEN QUANTITY IN SPECIALIZED CASES

- **Sales break-even point:** Sales mix in the proportion in which two or more products are sold. The calculation method for the break-even point of the sales mix is based on the contribution approach method.

- **Multi-product break-even analysis**: This approach finds a break-even point or each product in a multi-product company.

CASH FLOW PROJECTION – NEEDS

- Cash Flow Projection shows how cash is expected to flow in and out of your business. It is an important tool for cash management. It gives the entrepreneur a much better idea of how much capital investment his business needs.

WHY BUSINESSES CONSIDER CASH FLOW PROJECTION AN IMPORTANT MANAGEMENT TOOL?

- Make sure that the business can afford to pay its suppliers and employees.
- Make provisions for other payment and receipts
- Expansion of business
- Uncertain nature of business

FREQUENCY AND PERIOD OF PREPARING CASH FLOW PROJECTIONS

- This depends on the purpose for which the projection will be used.
- If it is for a Business Plan (to attract investors and lenders), it will be prepared at the initial stage – monthly for the first year, quarterly for the next two years, and annual thereafter. These projections are prepared, keeping in view the fluctuating needs for short term funds.
- If it is for running the day to day operations, then the projections would cover a much shorter period of say 3 to 6 months (13 to 26 weeks). The unit of time could be a month or even a week. The length of the period is closely related to the volatility of the business and one‘s ability to forecast accurately.

STEPS TO DEVELOP A CASH FLOW PROJECTION

- Based on your business characteristics, decide on the frequency & period (day, week, or month) as well as the horizon (month, 13 weeks, or 6 months).
- Develop the format, with items appropriate for your business, which will be used for developing the projection.
- Projected cash flow begins with the existing cash balance for the business. It then lists the sources of inflow and the anticipated payment dates. For example, if you supply

goods on credit, you will know at the start of February that you will receive a certain amount during the month covering sales from January – based on credit terms. You may have other inflows – interest o your deposits, sale of scrap, rent from space sub-let, etc. In this manner, you add up all your inflows.

- The statement then looks at forthcoming expenditure. Some of this will be a fixed, regular sum such as staff costs. Other expenses will be known but only payable at certain times, such as taxes. There will also be variable costs such as buying stock or materials.
- Where payment dates are variable, it is usually safest to work on the basis that you will pay suppliers as soon as possible but not receive payment from customers until the last possible date. In short, be conservative in your assumptions.
- Adding all outflows then enables you to arrive at the surplus or deficit for the period. This, when combined with the opening balance, leads to deriving the closing balance – which becomes opening balance for the next period.

FINANCIAL MANAGEMENT

- Financial Management means planning, organizing, directing, and controlling the financial activities such as procurement and utilization of funds of the enterprise. It means applying general management principles to the financial resources of the enterprise.
- The main objective of financial management is the maximization of shareholder‘s wealth. It strives to achieve it by:

1. Ensuring a regular and adequate supply of funds to the concern.
2. Ensuring adequate returns to the shareholders.
3. Ensuring optimum funds utilization.
4. Planning a sound capital structure.

PROCESS OF FINANCIAL MANAGEMENT

1) Financial planning

- Management needs to ensure that enough funding is available at the right time to meet the needs of the business.

2) Financial control

- Financial control is a critically important activity to help the business ensure that the business is meeting its objectives.

3) Financial decision-making

- The key aspects of financial decision-making relate to investment, financing, and dividends.

BUDGETING

- A budget is a detailed plan of operation for some specific future period. It is an estimate prepared in advance of the period to which it applies. It is an important tool for good financial management.

➢ **Essentials of the budget include:**

- To control resources
- To communicate plans to various responsibility center managers.
- To motivate managers to strive to achieve budget goals.
- To evaluate the performance of managers
- For accountability

TYPES OF BUDGET

- Sales budget – an estimate of future sales, often broken down into both units and currency. It is used to create company sales goals.
- Production budget – an estimate of the number of units that must be manufactured to meet the sales goals. The production budget also estimates the various costs involved with manufacturing those units, including labor and material.
- Capital budget - used to determine whether an organization's long term investments such as new machinery, replacement machinery, new plants, new products, and research development projects are worth pursuing.
- Marketing budget – an estimate of the funds needed for a promotion, advertising, and public relations to market the product or service.
- Project budget – a prediction of the costs associated with a particular company project. These costs include labor, materials, and other related expenses. The project budget is

often broken down into specific tasks, with task budgets assigned to each. A cost estimate is used to establish a project budget.

- Cash flow/cash budget – a prediction of future cash receipts and expenditures for a particular period. It usually covers a period in the short term future.

BUDGETING AS A PROCESS

- Each operating unit of the organization prepares its budget based on the projection of sales for an individual unit, its operating and overhead costs, and capital requirement.
- Each unit then presents its budget to the upper management, which reviews the budgets of each operational unit.
- The upper management makes necessary changes in the budgets of operational units so that conformity is achieved, keeping in view the overall organizational goals.
- The approved budget then becomes the road map for operations in the coming year.
- After the implementation of the budget, their performance is reviewed to check deviations and take corrective actions.

BENEFITS OF BUDGETING

- For startup entrepreneurs, a budget is like a roadmap that can help them set goals and assess the validity of their business concept.
- For established small businesses, a budget can be used to determine how the business is performing through the years and helping identify possible future investments.
- Business leaders can compare actual figures and catch potential business shortfalls or other problems early.
- Budgets can also be instrumental in winning over investors, convincing banks your business is a good loan risk, or bringing on new partners or customers.
- By including in the process of budgeting, managers become aware of future threats and opportunities which help them in formulating plans and policies for the smooth running of the business.

COST OF BUDGETING AND ITS FORMS

- The chief cost of the budget process is time. The companies should understand that the process of budgeting will be effective only if its benefits exceed its costs.

- Forms of budgeting process:
- Traditional budgeting: This form of budgeting is based on the review of historical performance and based on the historical data.
- Zero-based budgeting: This form of budgeting is not based on historical data. It aims at creating a completely new budget from the ground up.

WORKING CAPITAL AND INVENTORY MANAGEMENT

NEED FOR CAPITAL

- Procuring or investing in long term assets such as land, building, machinery, equipment, etc. These are typically known as Fixed Assets. Once pressed into service, they last over a reasonably long period. These are placed in service for carrying out the main activity of the business – production and sales or service, etc. are not traded or sold to receive money.
- For buying raw materials, packing materials, paying rent, insurance premiums, utility bills, wages, and salaries and for many other services and/or materials used in the production or service.

WORKING CAPITAL

- Money needed to fund the normal day to day operations of the business is known as working capital.
- Working capital = current assets – current liabilities
- TYPES OF WORKING CAPITAL
- Gross working capital: It refers to investment in all the current assets taken together.
- Networking capital: It refers to an excess of current assets over current liabilities.

OPERATING CYCLE

- The duration between buying the raw material and receiving cash from the customer is known as the operating cycle or cash conversion cycle.
- Different products will have different operating cycles
- In a trading concern: The operating cycle will include the length of time taken for the procurement of goods and realization of sales revenue.

- In a manufacturing company: Operating cycle is the length of time needed to complete the following:

a) Conversion of cash into raw material

b) Conversion of raw material into work in progress

c) Conversion of work in progress into finished goods

d) Conversion of finished goods into accounts receivable

e) Conversion of accounts receivable into cash

INVENTORY CONTROL

- Inventory in a general sense means the stock of raw materials, semi-finished goods, consumables, spare parts, and finished goods. In the accounting jargon, inventory refers to the value of all the items in the inventory list that is owned by the business.

➢ An effective inventory control system aims at:

- Providing stock as and when the need arises.
- The stock should be procured at the minimum possible price.

KEY TERMS

- **Stock keeping unit (SKU) code**
- Every item in the inventory is to be identified with a unique code which signifies certain aspects of the item. It can be color, size, weight, or any other characteristic that is of importance in its use. The SKU code can be a combination of alpha and numeric. SKU is the very basic unit for data collection and further manipulation for deriving meaningful statistics and decision making. Bar Codes and RFID (Radio Frequency Identification) tags are used in tracking etc using SKU.
- **Motley crowd**
- Inventory is a motley mix of a heterogeneous assemblage of raw materials, packaging materials, spare parts, semi-finished goods, finished goods, etc.

VARIOUS ASPECTS TO BE CONSIDERED IN INVENTORY CONTROL

- Space
- Value
- Lead time

- Standard v/s made to order
- Seasonality of supply
- Demand not uniform or not predictable
- Shelf life
- Safety aspects
- Obsolescence

PARETO'S PRINCIPLE

- This principle was propounded by Vilfredo Pareto, an Italian Economist, who studied land ownership in Italy in the early 1900s and found that roughly 20% of the population held title to about 80% of the land. For this reason, Pareto's principle is often referred to as the '80/20' rule.
- So, Pareto's principle states that 'A relatively handful of things will generate the bulk of the results or vital few, trivial many'. The value of Pareto's Principle in inventory management is in rendering us to stay focused on the 20% that matters.

ABC ANALYSIS OF INVENTORY CONTROL

- ABC (Always Better Control) analysis can help in better inventory control. It is based on Pareto's principle.
- In ABC Analysis, a company reviews its inventory and sorts all SKUs in three categories, called 'A' 'B' 'C' items. A typical breakdown might look like this:

➢ 10-20% of the items ('A' class) account for 70-80% of the consumption.

➢ The next, 15-25% ('B' class) account for 10-20% of the consumption and.

➢ The balance, 65-75% ('C' class) account for 5-10% of the consumption.

- Based on the above information it can be concluded that inventory, 'A' is outstandingly important, inventory 'B' is the average important, and inventory 'C' is relatively unimportant.

ECONOMIC ORDER QUANTITY

- Economic order quantity is the quantity that is most economical to order. It is the quantity for which order should be placed when the stock reaches the re-order level. EOQ is determined after considering the following factors:

- Ordering costs: This cost refers to the cost incurred for acquiring stock
- Carrying costs: This refers to the costs incurred in maintaining a given level of inventory.

DETERMINATION OF EOQ

- EOQ can be determined with the help of √2PD/C
- P= cost of placing one order or ordering cost per order
- D= annual demand for the inventory
- C= inventory carrying cost per unit

RE-ORDER QUANTITY

- The reorder level is the level of stock at which fresh order should be placed for the replenishment of stock.
- Re- order level= maximum rate of consumption x maximum re- order period

RETURN ON INVESTMENT

- It is a measure of the overall profitability of the business. It indicates the percentage of return on total capital employed in the business, irrespective of the fact whether it is self- owned or debt capital. It is also referred to as 'Return on capital employed'.
- ROI = net profit/ Total capital invested x 100
- Total capital invested = Equity + Debt

RETURN ON EQUITY

- It is a measure of profitability, calculated as a percentage of equity only. ROE can be calculated by dividing the net income by the equity of the investor and multiplying the result by 100.
- The net income would be determined after deducting interest from net profit.
- RoE = Net Income/ Equity X 100
- Net income= operating profit _ interest expenses

EBITDA

- EBITDA stands for Earnings Before Interest Taxes Depreciation and Amortization
- Its utility lies in normalizing the extraneous factors to be able to measure and compare the true effectiveness of one operation and the managerial decisions with another

operation. It is one of the most widely used measures for evaluating an acquisition business.