Costs, scale of production and break-even analysis

Business Costs

Why managers need to know the costs of operations:

- Compared with revenue from sales to calculate whether the business will make a profit or loss
- Helps managers make decision, for example the costs of two different locations
- Helps managers decide which price to sell a product for

Accurate information is therefore very important

- Fixed costs are costs which do not vary with the number of items sold or produced in the short run. They have to be paid irrespective whether the business is making sales or not. They are known as overhead costs
- Variable costs are costs which vary directly with the number of items sold or produced
- Total costa re fixed costs bad variable costs combined
- Average cost per unit is the total cost of production divide by total output (unit cost)

$$Average\ cost\ of\ production = \frac{Total\ costs\ of\ production\ (in\ a\ time\ period)}{Total\ output\ (in\ a\ time\ period)}$$

Economies of Scale and Diseconomies of Scale

Economies of scale

- Factors that lead to a reduction in average costs as a business increases in size, there are 5 economies of scale:
    1. Purchasing economies- large businesses are able to get large discounts from buying in bulk and thus reducing unit costs
    2. Marketing economies- the business is able to pay for its own vehicles for distribution and advertisement
    3. Financial economies- easier to raise capital as lower rates of interest are charge due to valuable collateral available
    4. Managerial economies- large business are able to afford to hire specialist managers, increasing efficiency and lowering average costs
    5. Technical economies- the use of flow production and the latest equipment will reduce the average cost of large manufacturing businesses. In addition, some machinery is only made with a certain high output capacity. Smaller businesses are unable to incur the costs of purchasing, operation and maintenance of such expensive production process due to the lesser quantities produced and lower capital available.

Diseconomies of scale

- Factors that lead to an increase in average costs as the business grows beyond a certain size
    1. Poor communication- difficulties occur due to ineffective communication.
    2. Low morale – workers may feel unimportant and undervalued by management, it is difficult to establish relations between top management and workers, lack of these relations lead to low morale and low efficiency amongst workers and increase average costs
    3. Slow decision making- take longer for decisions to be made by managers, communicated and acted upon by all workers. Managers may become withdrawn from external affairs of the business and loose contact with consumers

Break-even charts: comparing costs with revenue

- Break-even level of output is the quantity that must be produced/sold for total revenue to equal total costs (also known as break-even point)
- At break-even level no loss is being made nor profit
- Break-even charts are graphs which show how costs and revenues of a business change with sales. They show the level of sales the business must make in order to break even

- The revenue of a business is the income during a period of time from the sale of goods or services. Total revenue = quantity sold x price
- The break-even point is the level of sales at which total costs = revenue

Uses of Break-even charts

- Shows break-even output
- Shows safety margin
- Helps in decision making
- Shows area of profit or loss

Limitations of Break-even charts

- Assumption of no inventories and assumption of all goods being sold
- Fixed costs are not always constant
- Concentration solely on break-even point and not on other aspects of operations of business
- Assumption that costs and revenues can be drawn with straight lines

Break-even point: the calculation methods

$$Break - even\ level\ of\ production = \frac{Total\ fixed\ costs}{Contribution\ per\ unit}$$

$$Cobtribution = selling\ price - variable\ cost$$

- Contribution of a product is its selling price less its variable cost