Section 4: Operations management

Chapter 16: Business costs Scale of Production and break-even analysis

Business costs

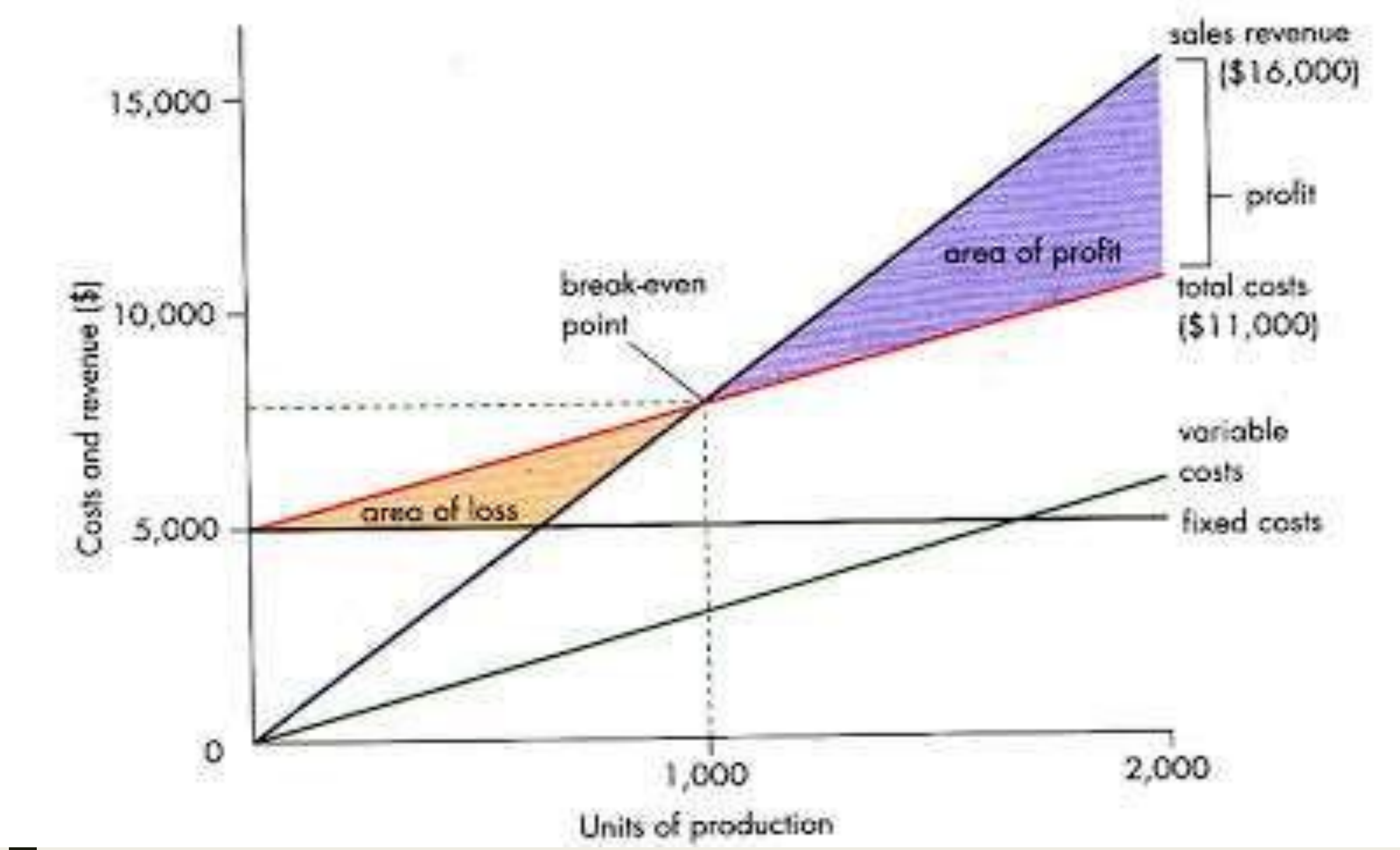
All business activity involves some kind of cost. Managers need to think about because:

- Whether costs are lower than revenues or not. Whether a
  business will make a profit or not.
- To compare costs at different locations.
- To help set prices.

There are two main types of costs, fixed and variable costs. Here are some types of costs:

- Fixed costs = stay the same regardless of the amount of output. They are there regardless of whether a business has made a profit or not. Also known as overheads.
- Variable costs = varies with the amount of goods produced. They can be classified as direct costs (directly related to a product).

❑ Break-even charts, comparing costs with revenue



Uses of break-even charts

There are other benefits from the break-even chart other than identifying the breakeven point and the maximum profit. However, they are not all reliable so there are some disadvantages as well:

- **Advantages:**

  - The expected profit or loss can be calculated at any level of output.
  - The impacts of business decisions can be seen by redrawing the graph.
  - The breakeven chart show the **safety margin** which is the amount by which sales exceed the breakeven point.

- Disadvantages:
  - The graph assumes that all goods produced are sold.
  - Fixed costs will change if the scale of production is changed.
  - Only focuses on the breakeven point. Completely ignores other aspects of production.
  - Does not take into account discounts or increased wages, etc. and other things that vary with time.

❑ Break-even point: the calculation method.

It is possible to calculate the breakeven point with ought having to draw the graph. We need <u>**two**</u> formulas to achieve this:

Selling Price - Variable Costs =

Contribution Break-even point =

Total fixed Costs/Contribution

- <u>Business costs: other definitions</u>

There are other types of costs to be analysed that is split from fixed and variable costs:

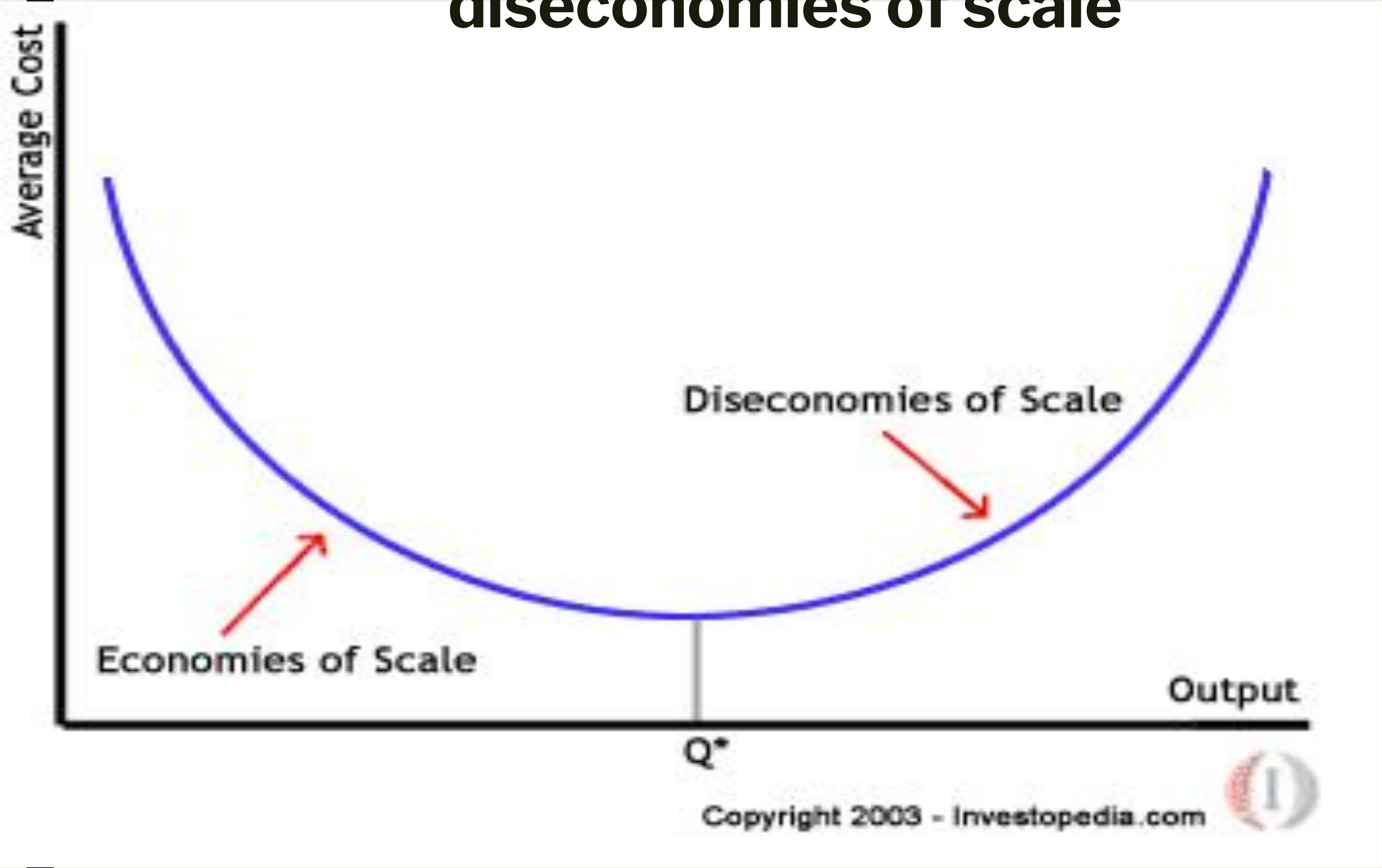
- Direct costs: costs that are directly related to the production of a particular product.
- Marginal costs: how much costs will increase when a business decides to produce one more unit.
- Indirect costs: costs not directly related to the product. They are often termed overheads.
- Average cost per unit: total cost of production/total

Economies and Diseconomies of scale:

- **Economies of scale:** are factors that lead to a reduction in
average costs that are obtained by growth of a business. There are five economies of scale:
    - Purchasing economies: Larger capital means you get
discounts when buying bulk.
    - Marketing: More money for advertising and own transportation, cutting costs.
    - Financial: Easier to borrow money from banks with lower
interest rates.
    - Managerial: Larger businesses can now afford specialist managers in all departments, increasing efficiency.
    - Technical: They can now buy specialised and latest

- However, there are diseconomies of scale which increases average costs when a business grows:
  - **Poor communication:** It is more difficult to communicate in larger firms since there are so many people a message has to pass through. The managers might loose contact to customers and make wrong decisions.
  - **Demotivation/Low morale:** People work in large businesses with thousands of workers do not get much attention. They feel they are not needed this decreases morale and in turn efficiency.
  - **Slower decision making:** More people have to

Average cost curve showing economies and diseconomies of scale



Budgets and forecasts: looking ahead

Business also needs to think ahead about the problems and opportunities that may arise in the future. There are things to try to forecast such as:

- sales or consumer demands.
- exchange rates appreciation or depreciation.
- wage increases.

- There are some forecasting methods:

  - Past sales could be used to calculate the trend, which could then be extended into the future.
  - Create a line of best fit for past sales and extend it for the future.
  - Panel consensus: asking a panel of experts for their opinion on what is going to happen in the future.
  - Market research.

- **Budgets** :"Budgets are plans for the future containing
numerical and financial targets". Better managers will create many budgets for costs, planned revenue and profit and combine them into one single plan called the master budget.

- Here are the **advantages** of budgets:
  - They set objectives for managers and workers to work
towards, increasing their motivation.
  - They can be used to see how well a business is doing by comparing the budget with the result in the process of
variance analysis. The variance is the difference between
the budget and the result.
  - If workers get a say in choosing the objectives for a

- **All in all, budgeting is useful for:**
- reviewing past activities.
- controlling current business activity - following objectives.
- planning for the future.

<u>4.</u>4 Chapter <u>18</u>: Location decisions

❑ Location of industry

The location of a business is considered when it starts-up or when its present location is unsatisfactory. The business's objectives as well as the conditions of the environment change, so the business may need to look for a new location once in a while.

There are many factors that affect the location of businesses, and these factors are different for each business sector. We'll take a look at them below.

❖ Factors affecting the location of a manufacturing business

Production methods and location decisions

- Small scale: transport and location of suppliers are less important.
- Large scale: transport and location of suppliers are more important.

Market

- Need to be near to transport perishable goods.
- Need to be near to cut transportation expenses.

Raw materials/components

- Need to be near to transport perishable goods.
- Need to be near to cut transportation expenses.

External economies of scale

- How good nearby businesses are.
- For maintenance of equipment.
- For training workers, etc…

- Availability of labour
  - Wages of the labourers.
  - How skilled they are.
- Government influence
  - Grants/subsidies.
  - Restrictions on dumping, etc…
- Transport and communication
  - To be able to transport product easily.
- Power
  - Need a reliable source of power to operate effectively.
- Water supply
  - A lot of water is needed in the production process (e.g. cooling, cleaning)
  - Cost of water.
- Personal preferences of the owners

- They like.
- Pleasant weather, etc…

- Climate
  - E.g. to reduce heating costs in a warmer climate.
  - Some climates are required to produce certain items.

Factors affecting the location of a retailing business

- Shoppers
  - Do shoppers go there?
  - What kind of shoppers go there?
- Nearby shops
  - Competitors.
  - Mass market.
  - Gap in the market.

- Customer parking available/nearby
  - Convenience for the customer.
- Availability of suitable vacant premises
  - Goods sites (e.g. in shopping centres) are in short supply.
- Rent/taxes
  - The more popular the site, the more expensive.
- Access for delivery vehicles
  - For delivering goods.
- Security
  - If the area is insecure
    - Goods will be stolen.
    - Insurance will be reluctant to insure the shop.
- Legislation
  - Laws restricting the trade of goods in certain

❖ Factors that influence a business to relocate either at home or abroad

- The present site is not large enough for expansion.
  - If a business simply prefers to expand elsewhere, the factors affecting location will have to be considered.
- Raw materials run out.
  - One alternative is to import raw materials from elsewhere.
  - Important for mining industries.
- Difficulties with the labour force
  - Wages are too high.
  - Need skilled labour.
- Rents/taxes rising.
- New markets open up overseas.
  - Cuts transport costs.
  - Bypass trade barriers.

- Government grants
  - To attract businesses to locate in development areas.
  - To attract foreign investment.
- To bypass trade barriers
  - Tariffs
  - Quotas

Factors affecting the location of a service sector business

- Customers
  - Whether customers require:
    - Direct contact.
      - Is it convenient for customers to go the business?
      - Will the service arrive at customers' houses in time?
    - No direct contact needed.
      - Mail
      - Internet

- Personal preference of owners
  - Near their homes.
- Technology
- Technology allows businesses to locate in cheaper sites.
    - Telephone.
    - Internet.
    - Transport.
- No need to be near customers.
- Availability of labour
  - Need to locate to sites where skilled labourers live.
    - Labourers may relocate to be near the business.
- Climate
- Important for tourism.

Near to other businesses

- Businesses that supply or repair machinery to others need to be near them to respond quickly.
- Post office/banks need to be in busy areas for the convenience of customers. That is, being near malls, shops, etc…

Rent/taxes

- If the business does not need direct contact with the customer, then it could locate in cheaper areas.

End of Chapter 18 and Unit 4