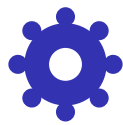


Operations Management

IGCSE Business Studies ■ Topic 4

IGCSE Business Studies



Operations Management

What we will cover

- 1 Methods of production
- 2 Productivity & lean production
- 3 Types of cost
- 4 Break-even
- 5 Quality

1 Production

Operations Management
└ Production

Methods of production

- | job | batch | flow | |
|---|--|---|---|
|  |  |  | |
| one unique item at a time | a group, then switch to another | a non-stop line | |
| | | | <ul style="list-style-type: none">■ training workers,■ using better machines and technology 技术,■ improving motivation 激励,■ organising the work better. |

Operations Management
└ Production

Productivity and lean production

productivity 生产率
output per worker; raise it with training, technology & motivation

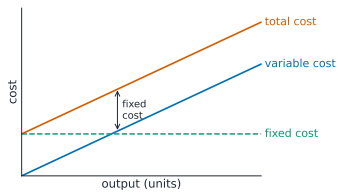
lean production 精益生产
cut all waste; **just-in-time** 准时制 holds little **inventory** 库存



Industrial robots

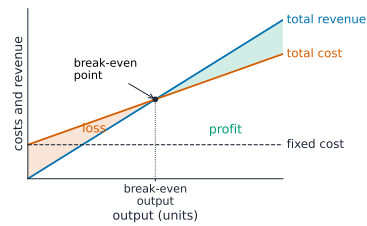
2 Costs

Types of cost



- **fixed costs** 固定成本 do not change with output – rent, salaries, insurance. You pay them even if you make nothing.
- **variable costs** 可变成本 change with **output** 产量 – materials, and pay for each item made. More output means more variable cost.
- **total cost** 总成本 is fixed costs plus variable costs.
- **average cost** 平均成本 is the total cost divided by the number

Break-even



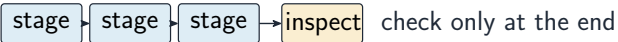
The **break-even point** 盈亏平衡点 is where total revenue = total cost (no profit, no loss).

$$\text{break-even} = \frac{\text{fixed costs}}{\text{contribution per unit}}$$

Quality

- **quality control** 质量控制 – check at the end
 - **quality assurance** 质量保证 – build in quality throughout
- Good quality wins loyal customers & cuts waste.

quality control



quality assurance



3

Recap

Worked example – total and average cost

Fixed costs are £8,000, variable cost is £2 per unit, and the factory makes 1,000 units.

- Total variable cost = $2 \times 1,000 = £2,000$
- Total cost = fixed + variable = $8,000 + 2,000 = £10,000$
- Average cost = $\frac{\text{total cost}}{\text{output}} = \frac{10,000}{1,000} = £10$
- Make more and AC falls: the fixed cost is spread over more units.

Fixed costs do not change with output (rent); variable costs do (materials). Spreading fixed costs is exactly what **economies of scale** means.

Topic 4 – key takeaways

1 Methods

job, batch & flow production

2 Lean

cut waste; just-in-time holds little stock

3 Costs

total = fixed + variable; average = total/output

4 Break-even

where total revenue = total cost

Check yourself

- 1 Which method suits a one-off wedding cake?
- 2 Do fixed costs change with output?
- 3 What is true at the break-even point?
- 4 When does quality control check the product?



Answers 1. job production 2. no 3. total revenue = total cost 4. at the end of production