Operations Management

A-Level Business ▪ Topic 4

A-Level Business

inputs → process → outputs

What we will cover

1 The transformation process

2 Methods of production

3 Inventory control

4 JIT & capacity

5 Outsourcing

6 Recap

1 Process and production

The transformation process

inputs → process → outputs

> Value is added when the output is worth more than the inputs. Operations management is the job of making that process efficient.

Methods of production

job	batch	flow
one-off, unique – a wedding cake, a ship	groups of the same item – a bakery's loaves	continuous line – cars, phones

Sustainability and technology

Sustainability 可持续性: meet today's needs without harming the future – cut waste, use less energy, recycle. **Automation** 自动化 raises output & quality and lowers cost, but has a high set-up cost and can replace jobs.

2 Inventory and capacity

Inventory control

Hold too much stock and you tie up cash and pay for storage. Hold too little and you lose sales.

> A **buffer stock** 缓冲库存 and a **reorder level** 再订货水平 keep the two in balance.

Just-in-time vs just-in-case

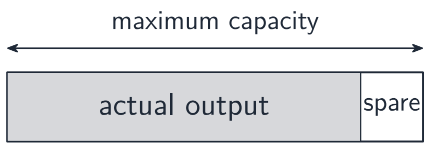
just-in-time

arrive as needed – low holding cost, high supplier risk

just-in-case

keep a buffer – safer against shocks, more cash tied up

Capacity utilisation



$$\text{utilisation} = \frac{\text{actual output}}{\text{maximum output}} \times 100\%.$$

Aim high but not full ($\sim$85–90%): low leaves idle resources; 100% leaves no time to repair.

Outsourcing

Outsourcing 外包 pays another firm to do work you used to do (cleaning, IT, parts).

+ cheaper, focus, flexible

– less control, delays, secrets

3 Recap

Worked example – labour productivity

A factory of 20 workers makes 800 units in a day. Find the output per worker.

- Labour productivity $= \dfrac{\text{total output}}{\text{number of workers}}$
- $= \dfrac{800}{20} = 40$ units per worker per day
- Higher productivity cuts the labour cost per unit, so it improves competitiveness.
- Raise it by training, better capital, or motivation – not by simply hiring more.

Productivity is output per worker, not total output. Hiring more raises output but leaves productivity unchanged – that distinction earns marks.

Topic 4 – key takeaways

1 Operations

inputs → process → outputs; productivity

2 Production

job, batch, flow, mass customisation

3 Inventory

re-order level, buffer; JIT vs JIC

4 Capacity

utilisation; aim high not full

Check yourself

1. Which production method suits a one-off item?
2. What is buffer inventory for?
3. Main risk of just-in-time?
4. Capacity utilisation if output is 80 of 100?

Answers **1.** job production **2.** safety stock for delays/extra demand **3.** a late delivery stops production **4.** 80%