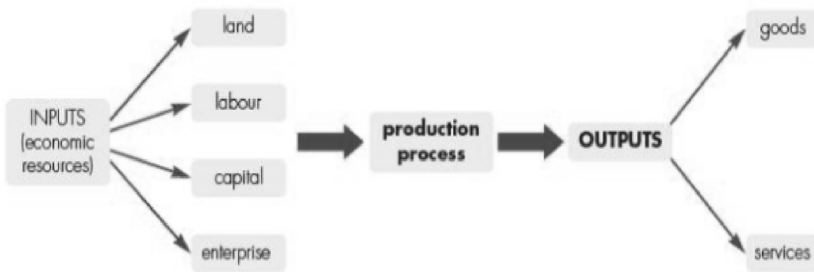
THE NATURE OF OPERATIONS (4.1)

(Chapter 22 - AS level 4.1)

Production is the effective management of resources in producing goods and services. The aim in all cases of production is to add value to the input so the output can be sold at a profit.



The **operations department** in a firm overlooks the **production process** ↑ of converting *inputs* into *outputs*. They must :

- Use the resources in a cost-effective and efficient manner
- Manage inventory effectively
- Produce the required output to meet customer demands
- Meet the quality standards expected by customers - run regular quality checks

Resources

All business operations require resources – these are the production inputs.

- ➔ **Land** - Are the natural resources such as land, minerals etc. All businesses need somewhere to operate from
- ➔ **Labour** - the work done by employees such as managers, factory workers etc. The quality of the labour input will benefit the businesses operations, but to achieve this training may be needed ($$$)
- ➔ **Capital** - This refers to the finance, equipment, machinery, buildings and other equipment that businesses use to produce the goods and services they sell
- ➔ **Ideas** - all production starts with an idea or plan to create something

Additional info :

Intellectual capital : includes human capital (well trained and knowledgeable employees), databases and information systems and good links with supplier and customers

Productivity

Productivity measures the efficiency of inputs used in the production process over a period of time. It is the output measured against the inputs used to produce it. Productivity in business can be measured in two ways, **labour productivity** and **capital productivity.**

$$\text{Productivity} = \frac{\text{Quantity of output}}{\text{Quantity of inputs}}$$

Businesses measure the **labour productivity** to see how efficient their employees are in producing output. The formula for it is :

$$\text{Labour productivity} = \frac{\text{Output (over a given period of time)}}{\text{Number of employees}}$$

Businesses measure **capital productivity** to measure whether a business has a sufficient amount of capital to support its production and sales.

$$\text{capital productivity} = \frac{\text{output}}{\text{capital employed}}$$

Efficiency and **effectiveness** are not the same thing. **Efficiency** is defined as the ability to accomplish something with the least amount of wasted time, money, and effort or competency in performance. **Effectiveness** is defined as the degree to which something is successful in producing a desired result; success.

For example, a car is a very effective form of transportation, able to move people across long distances, but a car may not transport people efficiently because of how it uses fuel.

Businesses are always looking to increase productivity, as this will result in increased efficiency. The output will increase per employee and so the average costs of production will fall. This way, they will be able to sell more while also being able to lower prices.

Ways to increase productivity:

- **Improving labour skills** by training them so they work more productively and waste lesser resources
- **Introducing automation** (using machinery and IT equipment to control production) so that production is faster and error-free
- **Improve employee motivation** so that they will be willing to produce more and efficiently.
- **Improved quality control** and assurance systems to ensure that there are no wastage of resources

Potential benefits of increasing productivity :
✔ Increased efficiency of production helps reduce unit costs
✔ May give the business a competitive advantage

Limitations of increasing productivity :
✖ Increasing productivity does not guarantee business success - if product is undesirable the effectiveness used in making it doesn't matter
✖ Workers may want higher wages if they are generating more output
✖ Training, additional automation and improving quality control will lead to increased costs

Labour intensive versus capital intensive businesses

Firms can be described as either being **labour intensive** or **capital intensive**.

Labour intensive is when products in a business are mainly produced by human workers. Machines and special tools may be used too, but overall it requires human creativity and effort to produce the product. For example, a handmade furniture manufacturer.

Labour intensive advantages	Labour intensive disadvantages
Unique, customised products are easier to make	Quality of products can vary due to expertise of the worker and there is increased risk of human error
Less expensive machinery costs	Skilled workers take time and money to train
Humans can use their own initiative and problem solve	Skilled workers will be paid more than unskilled workers
Workers are often more motivated	Workers require breaks and holidays which may lead to loss of production

Capital intensive is when products are mainly produced by machines and robots, meaning the initial outlay and maintenance, will be very high. (Example being a car manufacturer.)

Capital intensive production can be either *mechanised*, when the production process requires both machinery and humans, or *automated* - when the production process is mainly carried out by machinery/robots and is mostly controlled by computers.

Capital intensive advantages	Capital intensive disadvantages
Less employee wages and costs	More difficult to customise orders
Quality can be standardised, the same every time	Breakdowns in production can be costly in time and money
Machines can work continuously, 24/7 meaning products are produced quicker	Initial set up costs of machinery are high
Machines can carry our dangerous tasks which will reduce accidents	Employees may become demotivated (if there are any.)
Machines can carry out repetitive tasks that humans would find boring	

Factors that affect the choice between labour intensive and capital intensive production :

- **Finance available -** a large amount of capital is required to invest in capital intensive production. Some businesses may not be able to afford to initially invest in this method of production
- **Quantity** - if large quantities of identical goods are required then a company will be more likely to use capital intensive methods of production. Whereas if the product being supplied is a low quantity of a tailored product then labour intensive methods would be preferred
- **Technology** - if the required technology to produce the goods is unavailable than the company would have no choice but to use labour intensive
- **Size of business -** a massive manufacturing company may find it costly having to pay salaries yearly to thousands of employees, therefore will instead opt to purchase expensive machinery and hire fewer employees to operate said machines in order to save money in the long run