



Productivity

- This is a measure of how efficient a firm is
- It is defined as:

“The amount that can be produced with the resources that are available”

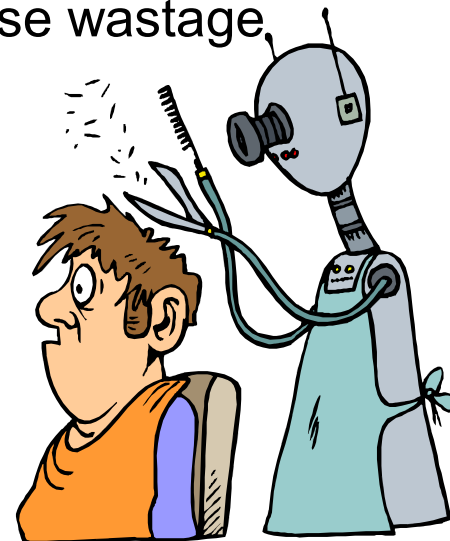
- This is usually measured by comparing output to the number of workers, using the following formula:

$$\text{Productivity} = \frac{\text{Number of Goods Produced}}{\text{Number of Workers}}$$



The Importance of Productivity

- If a business can produce more units with the same number of workers then:
 - The average cost of each unit is lower
 - Profits will be higher
- There are 2 main ways to increase productivity:
 - To control stock carefully so as to minimise wastage
 - Eg use JIT Production
 - To use new technology
 - Eg Robotics





Stock Control

- The word “stock” refers to:
 - **Raw materials and other components** – things that go into the production process
 - **Work-in-progress** – products that are not yet finished, but where the production process has started
 - **Finished goods** – products that have been completed to the right quality – and are waiting to be delivered to customers
- Businesses will want to hold as little stock as possible because:
 - Holding stock costs money, e.g. storage and risk of theft
 - Stock may become out of date
- However, if they don't hold enough stock they may lose sales



Using A Stock Control Chart

● Maximum Stock Level

- This is the most stock that a firm is able or willing to hold

● Re-Order Level

- The stock level at which a new order will be sent to the supplier

● Minimum Stock Level

- If stock falls below this level then the firm is in danger of running out of supplies

● Re-Order Quantity

- This is the number of items that are ordered. This is shown by the straight line on the stock control chart

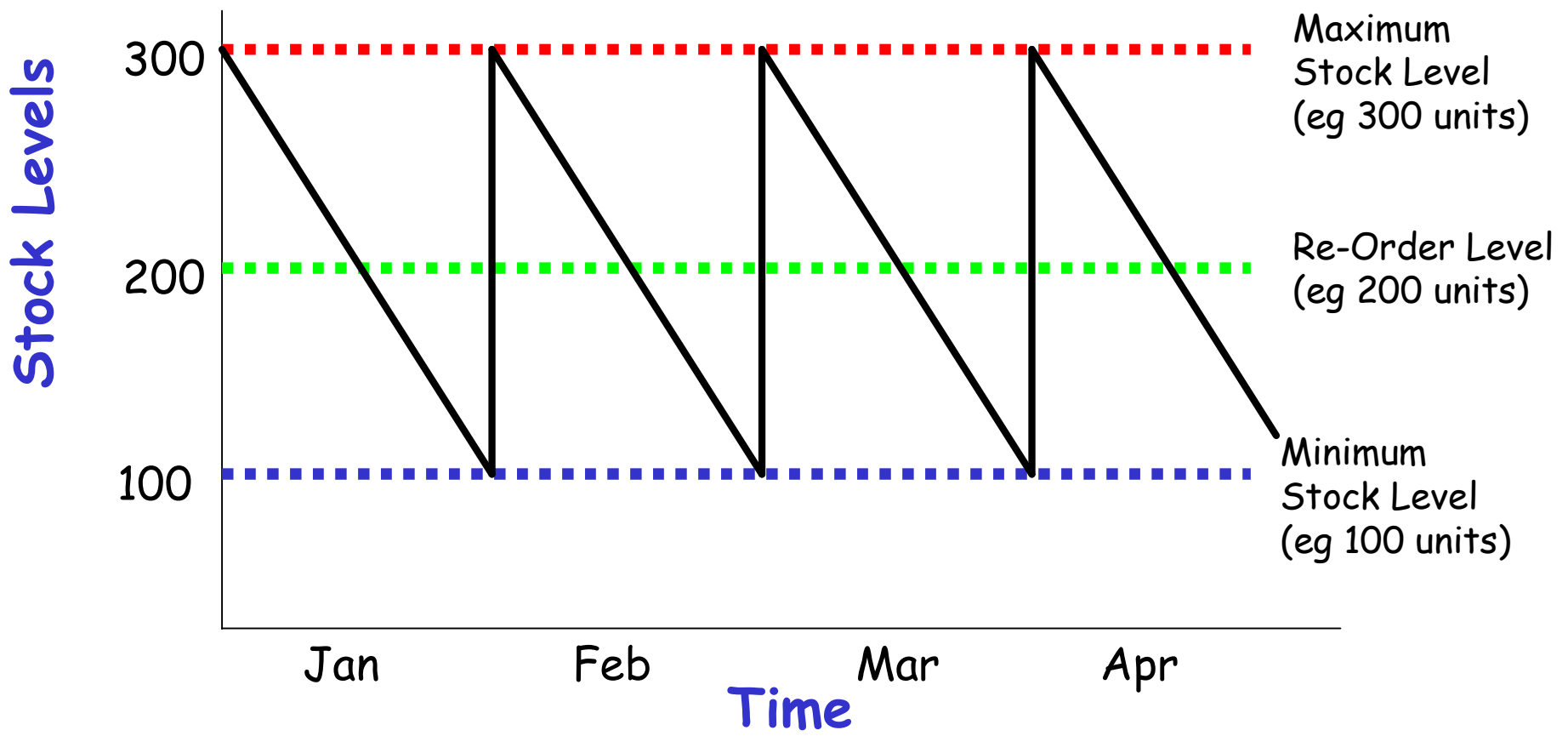
● Lead Time

- The time between an order being placed, and the goods being received



Stock Control Charts

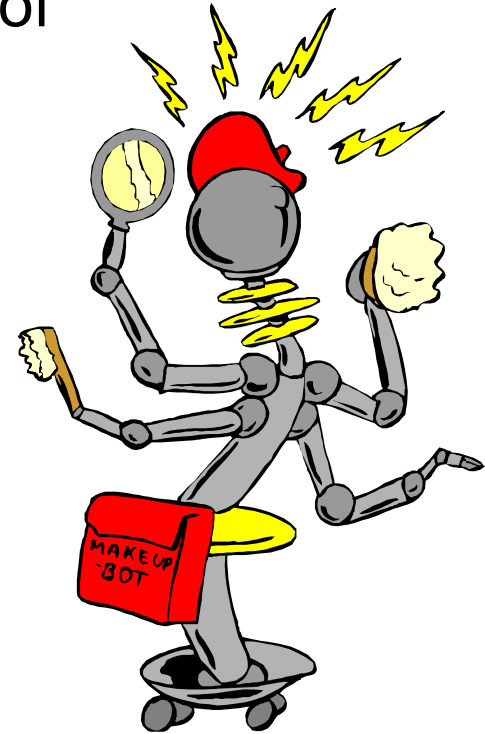
- Some businesses use these to help control stocks
- They show:





New Technology & Manufacturing

- Investing in new technology is another way of improving efficiency
- Manufacturing businesses can use:
 - **Computer Aided Design (CAD)**
 - Used to design new products
 - **Computer Aided Manufacture (CAM)**
 - Controlling production machines using computers
 - **Computer Integrated Manufacture (CIM)**
 - Where the whole factory is computer controlled usually involves robots





New Technology & Services

● Services industries (eg retailers) can use:

➤ **Electronic Point of Sale (EPOS)**

- Database of stock, which is kept up to date using bar codes

➤ **Electronic Data Interchange (EDI)**

- Sales and stock information is automatically sent to head office

➤ **Electronic Funds Transfer at Point of Sale (EFTPOS)**

- This system allows customers to pay electronically using a debit or a credit card

➤ **E-mail**

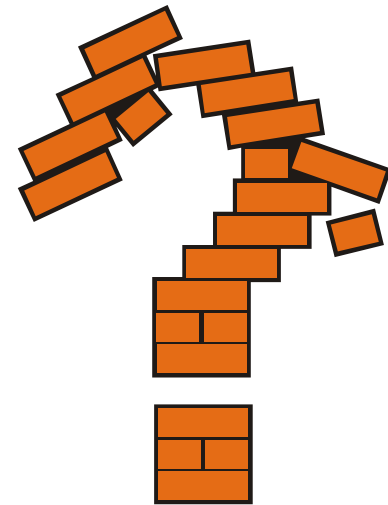
- Has improved the speed with which businesses communicate





Research & Development

- Of course new products don't just appear overnight
- For example it took James Dyson 15 years and over 5000 prototypes before the first Dyson was sold
- A firm must answer a number of questions when developing a product:
 - What do customers want?
 - How long will they want it for?
 - Are the materials available?
 - How much will it cost to produce?
 - Is the product safe?
 - What are our competitors doing?
 - Which method of production should be used





Protecting New Products

- Developing new products is time consuming and expensive
- Businesses will want to protect their new products
- There are 3 ways to do this:
 - **Patents**
 - This has to be applied for
 - Gives the inventor the sole rights over their idea for 20 years
 - **Copyright**
 - The copyright owner has the legal right to prevent unauthorised copying of their work
 - **License**
 - Similar to a franchise, but applies to a single product.
E.g Coca Cola is bottled under license in the UK

