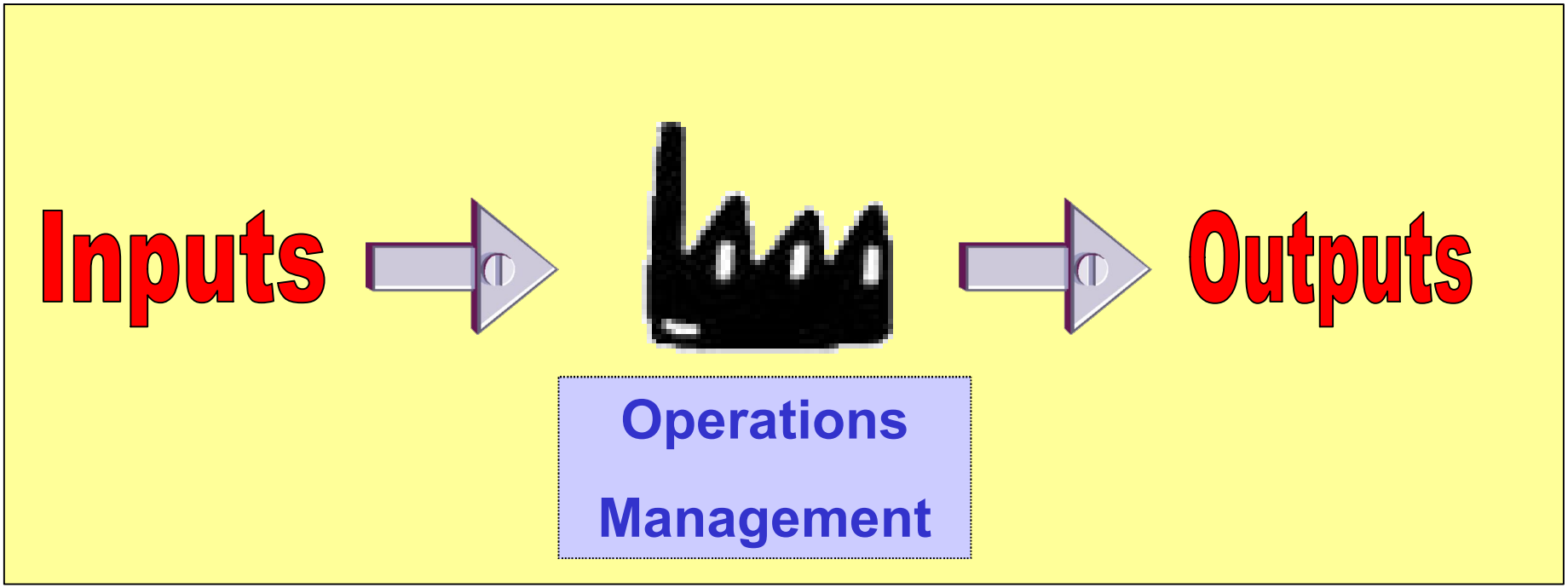
Operations Management

- This is a modern term for production management
- It does not relate just to factories – it does apply to service industries
- It refers to how the process of turning inputs into outputs is managed:



What Does Production Involve?

- Clearly production involves combining the four factors of production
- They are used in order to "ADD-VALUE" to the inputs so that the output can be sold for a profit
- In order to manage this firms will have to answer the following questions:
  - What should be produced?
  - How should it be produced?
  - Where should it be produced?
  - How big should the firm be?
  - How should the product be distributed?
  - Which method of production would be the most suitable?
  - How will quality be controlled?

Methods of Production

- There are 3 main methods of production:
  - **Job Production**
    - Each item (or job) is completed before the next one is started
    - Eg Tailor-made clothing, Construction jobs (ie Wembley)

  - **Batch Production**
    - Involves dividing work into different tasks
    - Each task is completed on a number of products before they move onto the next task
    - Eg Bread, Paint

  - **Flow**
    - Items are continuously moved from one task to another
    - Sometimes called MASS production
    - Eg car manufacturing, Tinned products

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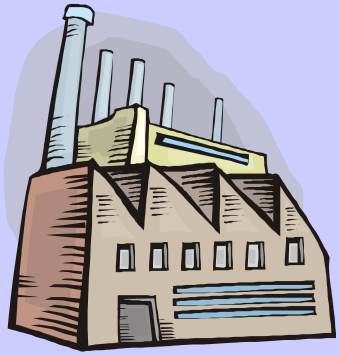
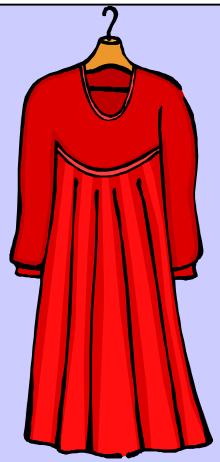
Value Added

- This is the extra worth of an output as a result of the use of inputs
- Eg:

Cotton Farmer produces cotton at a cost of £15, and sells for £20

Cotton Mill turns the cotton into fabric. It then sells this to a dressmaker for £35





The dressmaker turns the fabric into a dress which is sold to a retailer for £50

The retailer then sells the dress for £70

What is the total value added?

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Other Methods of Production

- Relatively new methods of production include:
  - **Mass Customisation**
    - A mix of job and flow production
    - Allows products to be mass produced, and then adapted to individual requirements
    - Eg computers
  - **Cell Production**
    - A form of flow production
    - Workers are put into teams (or cells)
    - Each team is responsible for meeting set targets
  - **Lean Production**
    - A combination of factors
    - Largely concerned with quality and efficiency

Production & Quality

- Quality is an important factor since it:
  - Helps create customer loyalty
  - Reduces complaints – and associated costs
  - Lengthens the life-cycle of products
  - Can reduce promotional costs e.g.
  - Can allow a higher price to be charged e.g.

MARKS & SPENCER

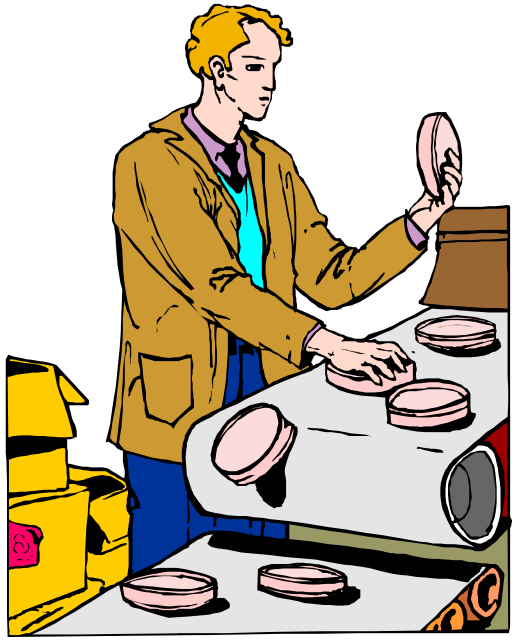
- Since quality is largely determined during production there is little doubt that the 2 factors are linked

- This was recognised by the Japanese, and led to the development of lean production

Quality Control Techniques

- There are 3 methods that can be used

  - **Prevention**
    - The most effective method
    - This relies upon Quality Assurance
  - **Inspection**
    - The traditional method
    - This has very high costs
  - **Correction & Improvement**
    - This uses both of the above
    - Modern businesses approach this using "**BENCHMARKING**"



Quality Assurance

- This involves setting standards throughout an organisation

- It will therefore involve:
  - Product design
  - Quality of raw materials
  - Production quality
  - Delivery systems
  - Customer service including after sales

- Many businesses will strive to achieve ISO 9000
  - This is a recognised certificate that a firm has met stringent standards
  - Many government contracts will only be awarded to firms with ISO 9000

Inspecting For Quality

- This is the most popular method of quality control
- It involves:
  - Sampling products at the end and during production
  - Employing people to test products
  - Extreme testing – ie damaging products
- As such it creates a number of problems:
  - It is expensive!
  - It can create resentment between staff
  - It is tedious – but relies upon alertness!
  - It is not foolproof
  - It removes responsibility of quality from other staff

- It is for these reasons that new methods of quality control have been developed

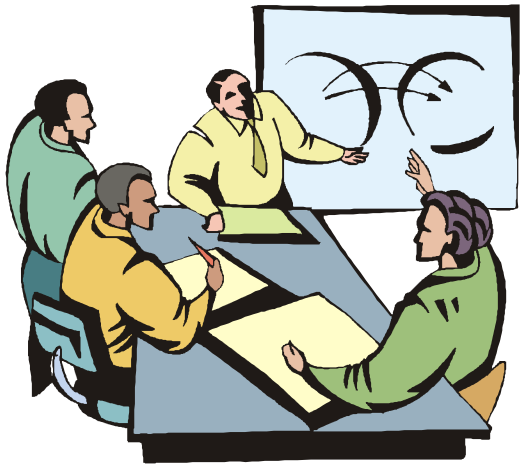
New Approaches to Quality Control

- Over the last few years a number of new approaches have been developed

- The main ones are:
  - **Quality Circles**
  - **Total Quality Management (TQM)**
  - **Lean Production**
  - **Benchmarking**
  - **Kaizen**

Quality Circles

- An idea that originated in Japan
- This encourages the active participation of workers
- Workers meet voluntarily in small groups
- They discuss possible methods of improving quality and productivity
- “Staff Suggestion boxes” are found more commonly in British businesses



Total Quality Management (TQM)

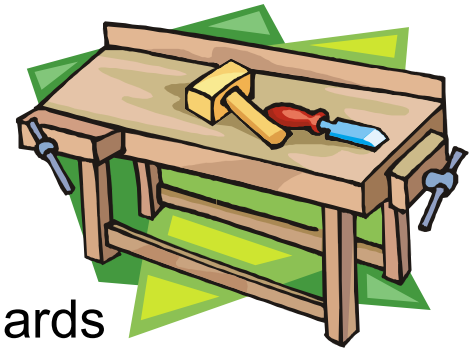
- This involves the development of a new culture within a business
- Everyone is considered to be responsible for quality
- Different departments are treated as internal customers
- In theory this should eradicate the need for a quality control department
- However, it is dependent upon empowerment of staff

Lean Production

- Developed by Toyota to overcome the inefficiencies of mass production
- It consists of:
  - **Reducing the lead time**
  - **Cell production**
    - Workers operate in teams with a “cell” made up of a number of teams
    - Involves treating teams as “internal customers”
  - **Just-in-Time Management (JIT)**
    - Means that stocks arrive as they are required
  - **Quality Circles**
  - **TQM**

Benchmarking

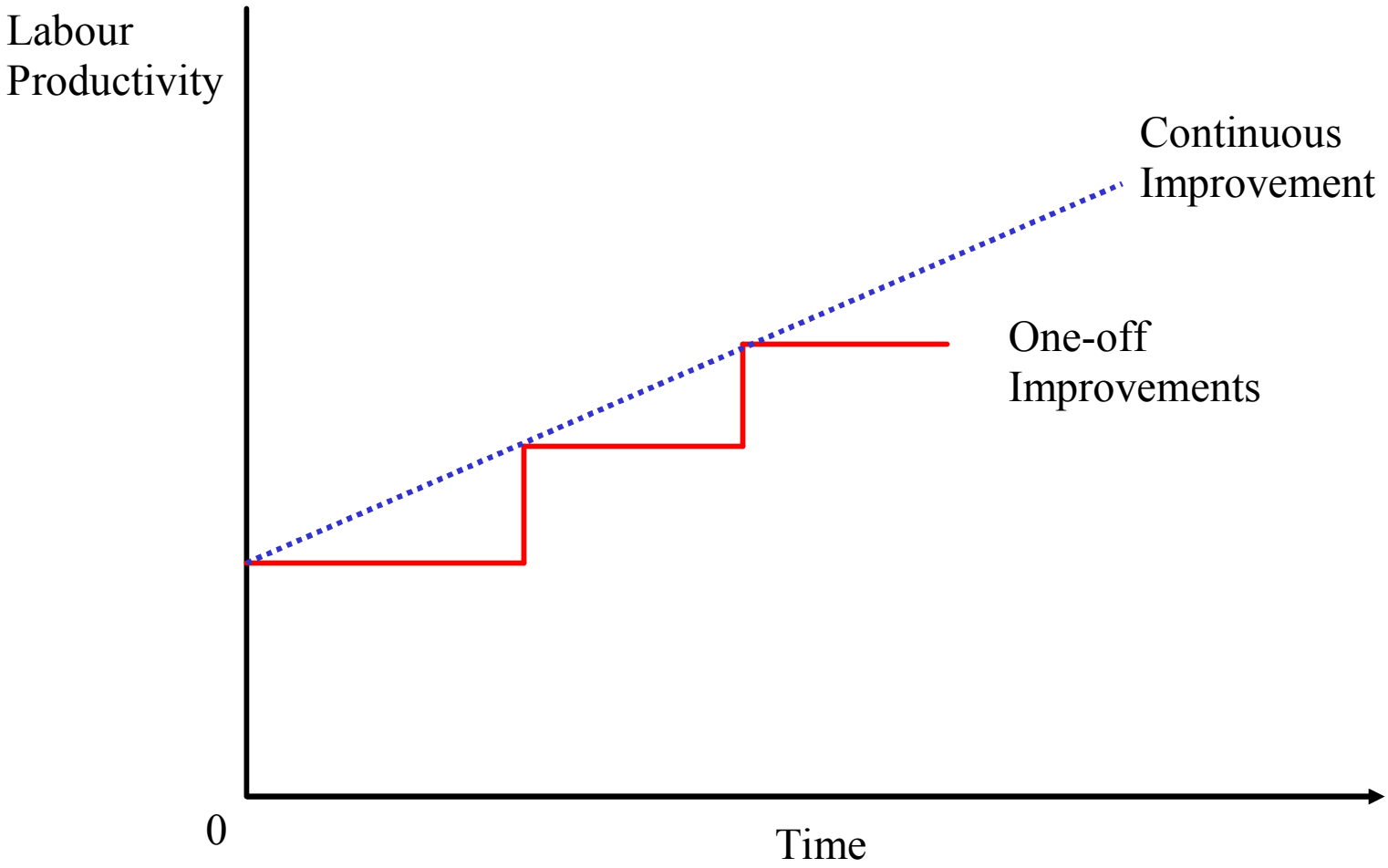
- This involves looking at how the most effective competitors operate
- Comparing this with the internal operation
- Identifying areas of improvement
- There are 6 stages involved in benchmarking:
  - Identifying the focus areas
  - Identify the “benchmark”
  - Undertake the comparison
  - Set new standards within the focus areas
  - Make the changes necessary to meet new standards
  - Evaluate whether standards have been met
- Therefore “**benchmarking**” is an on-going process



Kaizen

- Based on the Japanese idea that incremental change is better than catastrophic change
  - "**Kai**" = change
  - "**zen**" = good
- Kaizen relies upon staff participation; who meet regularly to suggest improvements to the way work is carried out
- It is a cheap method of developing new ideas and techniques that can have a massive impact upon the business

Kaizen Vs One-Off Improvements



The Importance of Education & Training

- Irrespective of the production method used these 2 factors are vital
- The more participation required from workers, the more highly trained they will need to be
- This has resulted in a change in culture within the workplace over the last few years
- Firms are now much more willing to send workers on training courses