

## 2 4 1 Scale of Production

### Preparation

- Read pages 47 - 48

### Resources

- (O-o) Architectural model; vinyl lettering
- (B) Magazines, newspapers
- (M) Mobile telephone; commercial packages
- (C) Drinks can; washing up bottle

### Key Questions Scale of Production

- ? What type of products are suitable for one-off production
- ? Who might make them
- ? Who might they be for
- ? What types of tools, machines and skills are involved
- ? Could you do this
- ? Advantages and *Disadvantages*
  
- ? What type of products are suitable for batch production
- ? What is a batch
- ? What type of machines are used for batch production
- ? How are economies of scale achieved
- ? Advantages and *Disadvantages*
  
- ? What type of products are suitable for mass production
- ? How is the labour force skilled
- ? How is mass production market led
- ? How is Quality Control monitored
- ? How is return on investment achieved
- ? Advantages and *Disadvantages*

### **Wider study**

- Table 2 10 Batch production in short term print runs
- Table 2 11 Applications, advantages and *disadvantages* of scale of production
- Commercial D&T programme The Print Industry
- Commercial D&T programme Manufacturing Process Identifier
- Scales of production <http://www.technologystudent.com/joints/scalep1.htm>
- One-off production <http://www.technologystudent.com/joints/sing1a.htm>  
<http://www.technologystudent.com/joints/sing1.htm>
- Batch production <http://www.technologystudent.com/joints/bat1.htm>  
<http://www.technologystudent.com/joints/batch1.htm>
- Continuous production <http://www.technologystudent.com/joints/contin1a.htm>  
<http://www.technologystudent.com/joints/contin1.htm>

### **Assignment**

- Any and every product you use or observe was made using one-off, batch, mass or continuous production: which?
- Collect examples of each scale of production and discuss them with the class

### **Homework**

- As above

### **Revision questions**

1 Explain with examples

- One-off production
- Mass production
- Computer integrated manufacture

2 Give the advantages and disadvantages of manufacturing at local level and at global level

### **Specification and Learning Objectives**

Characteristics, application and advantages/disadvantages of the following scales of production in the manufacture of products:

- one-off
- batch, including short-term print runs
- mass
- continuous

## **Solutions to revision questions**

**Next page**

**1**

**One-off production:**

- Higher quality materials used are more expensive, therefore the product is more expensive.
- Highly skilled labour required with specialist tools and machinery
- Time consuming manufacture due to high detailing and 'craftmanship' involved
- eg A graphic sign on a van side for an individual client

**Mass production:**

- Lower cost of materials when buying in bulk, therefore unit costs are low
- Low skilled labour used with automated manufacturing processes
- Increased production means that high set-up costs are quickly recovered
- eg Aluminium drinks can – 24 hr, 7 day a week production
- Continual flow
- Continuous production
- Process production

**Computer integrated manufacture (CIM)**

- Interlinked network of computers controls flow of information and automated processes
- Fully automated manufacturing cells produce different components
- Project management software allows manufacturer to create different workflows for different jobs
- Use of just-in-time ordering of stock and materials allows for flexibility

**2**

**Manufacturing at local level**

Advantages

- People can be working for themselves. Greater flexibility in outcome
- Designs tailored to meet clients and consumer needs
- Job satisfaction – working for the local community/working for themselves

Disadvantages

- Reliance on self promotion for continued work
- Less follow through on H&S issues, for example: less checks on environmental issues
- Unstable availability of work
- Difficulties in regulating smaller companies
- Must address advantages – 1 mark for each point x 2 and must address disadvantages – 1 mark for each point x 2

**Manufacturing at global level**

Advantages

- Assured employment for unskilled workforce
- Stable jobs in volume production leads to stable economy

- Political incentives available for relocation

Disadvantages

- Low paid workforce often working in countries with dubious political issues
- Mundane, repetitive. Marxist theory – no personal value
- Volume production further promotes consumerism therefore waste, pollution etc.
- Short cuts on environmental issues exploited in some countries
- Low job satisfaction and worker involvement

Must address advantages – 1 mark for each point x 2 and must address disadvantages – 1 mark for each point x 2