



## Section 5.3

### Activity 5.3.1

1. 'Productivity' is the ratio of outputs to inputs during production often expressed as output per worker hour.
2. The key features of continuous improvement are:
  - Importance of staff/worker involvement in decision-making
  - Team-working (kaizen groups) to improve quality and productivity
  - Kaizen group empowered through decision-making responsibility.
3. Team-working may have led to a rise in productivity at Ambi-Rad because staff feel empowered/motivated through:
  - Its 150 staff divided into groups to work in teams
  - Team leader encouraging new ideas from the groups.
4. The possible problems of Ambi-Rad introducing lean production might be:
  - Highly skilled labour needs to recruit, or existing labour trained
  - Cost of new capital and technology
  - Employee/union resistance to flexible contracts
  - Management/employee culture might resist the change.

These problems may be overcome with:

- Effective communication
- Financial rewards for managers and employees for making the change
- Effective training
- Resourcing the change with appropriate finance.

### Activity 5.3.2

1. 'Just-in-time (JIT) stock-control' aims to avoid holding stocks by requiring supplies to arrive just as they are needed in production, and completed products are produced to order.
2. Features of JIT stock control management include:
  - Low levels of stock held
  - Stock ordering based on consumer demand
  - Strong relationships with suppliers.



3. Problems for businesses of using a single supplier for their components might be:

- Supplier goes bankrupt
- Supplier increases prices
- Interruption to the supplier's production.

4. The advantages of Nissan and Toyota using JIT stock control include:

- Reduces the capital invested in stock
- Cost of storage and other stock holding costs reduced
- Chances of stock becoming outdated is reduced
- Business is quicker to respond to changes in demand
- Improved worker motivation.

The disadvantages might be:

- Interruptions to supply of materials or components
- Order administration costs rise
- High delivery costs
- Loss of purchasing economies of scale.

## Activity 5.3.3

1. 'Lean production' is producing goods and services efficiently with the minimum of waste resources while maintaining high quality.
2. Yukai Resort has applied lean production in the following ways:
  - Multi-skilled staff so jobs can be interchanged
  - Kaizen circles involve employees in decision-making.
3. The application of lean production may allow Yukai to keep the price at \$91 because the high level of productivity reduces the unit costs of production and allows the firm to keep the selling price low.
4. The difficulties of Yukai using lean production might be:
  - Needs highly trained staff
  - Needs highly motivated staff
  - Cost of investment in capital
  - Cost of training staff
  - Resistance from employees and management



These problems may be overcome with:

- Effective communication
- Financial rewards for managers and employees for making the change
- Effective training
- Resourcing the change with appropriate finance.

### Activity 5.3.4

1. 'Cradle to cradle manufacturing' is a principle that seeks to create production techniques that are not just efficient but are essentially waste-free and truly sustainable.
2. Benefits to a business using cradle-to-cradle manufacturing might be:
  - Reduction in waste costs
  - Positive publicity
  - Government support through subsidies or tax incentives.
3. Cradle-to-cradle might increase business costs because of the costs of capital investment and staff training needed to create sustainable production.

### Activity 5.3.5

1. 'Quality assurance' is a system of agreeing and meeting quality standards at each stage of production to ensure consumer satisfaction.
2. FatBoy Trims has tried to improve the quality of its product by providing a better service to its customers through things like:
  - Maximum time for phone to ring
  - Maximum waiting time for appointment
  - Maximum waiting time between hair wash and when cutting begins.
3. Improving the quality of the products can increase FatBoy Trims' revenue by:
  - Increasing consumer demand for FatBoy Trims hairdressers
  - Allows FatBoy Trims to increase its prices.



## Activity 5.3.6

1. Two problems for TTF because of low-quality products might be:
  - Falling demand because of dissatisfied customers
  - Cost of dealing with faulty goods returned.
2. Quality control is based on inspection of the product or a sample of products, whereas quality assurance is about preventing poor quality occurring by designing high-quality products and having high-quality systems of production.
3. The advantages of TTF's decision to increase the number of quality control inspectors might be:
  - Workers know there are tighter controls so are more motivated to increase quality
  - Fewer faulty tractors reach customers
  - Greater knowledge/understanding of faults in tractors.

The disadvantages might be:

- Cost of employing the extra inspectors
- Employees are less concerned with faults if they know they will be picked up by inspectors
- Employees lose motivation because they feel management does not trust them.

## Exam practice question

1. 'Total quality management' (TQM) is a complete approach to the management of an organisation. It looks to improve the quality of products through continuous improvements in the way the organisation operates.
2. Two ways investment in new machinery could improve Haisho Electronics' efficiency might be:
  - Makes systems like changing tools quicker and easier
  - Machinery is less likely to break down.
3. Reasons why Haisho Electronics might be losing competitiveness include:
  - Investment by competing firms in new technology
  - More lean production among competitors
  - More effective management.
4. The advantages of Haisho Electronics using lean production might be:
  - Increased employee motivation through team working
  - Product quality improvements



- Benefits of holding low stocks levels
- High levels of productivity.

The disadvantages might be:

- Highly skilled labour needs to be recruited or existing labour trained
- Cost of new capital and technology
- Employee/union resistance to flexible contracts
- Management/employee culture might resist the change.

## Key concept question

The importance of innovation in operation management:

- Capital investment in new machinery
- Technological advances in capital such as IT and mobile communications
- New production systems such as the introduction of JIT
- Need to develop greater efficiency to be competitive.

The importance of globalisation in operation management:

- Competition from overseas increases the need to develop greater production efficiency
- Access to employees from overseas can increase skill availability and reduce costs
- Offshoring allows production to occur in other countries
- Access to overseas suppliers of raw materials and capital can reduce production costs.