33 Quality assurance

This chapter covers syllabus section 5.3

On completing this chapter you should be able to:

- explain the concept of quality
- understand the difference between quality control and quality assurance – total quality management
- (H) explain the role of Kaizen in quality improvement
- (H) evaluate different approaches to quality improvement
- (H) explain the role of local and national standards in assuring quality for consumers.

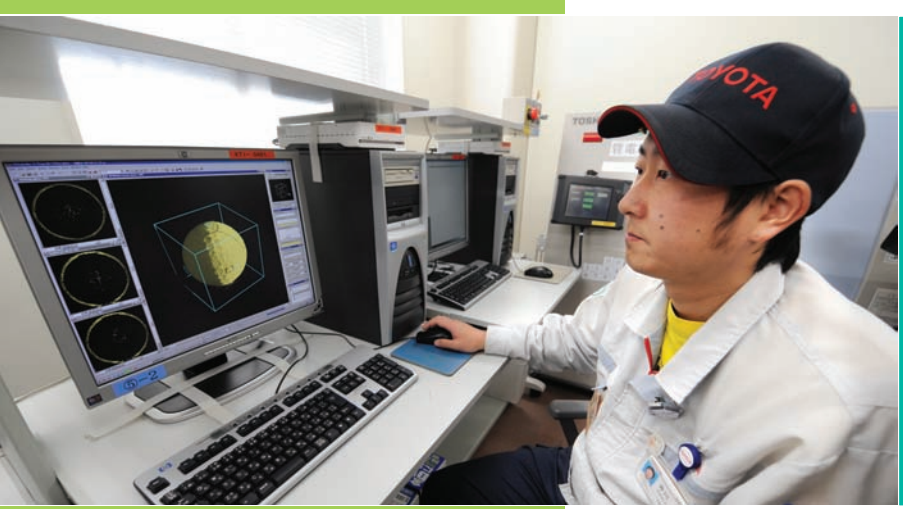
SETTING THE SCENE

Toyota's approach to quality

A new approach to achieving quality products was developed in the USA by many specialists, most famously by W. Edwards Deming. They advocated many changes to traditional quality-control systems. In the mid-1940s, many Japanese manufacturers listened to their ideas and then started to re-think and re-develop their approach to quality.

Toyota has achieved a reputation for the production of very high-quality vehicles in many countries around the world. The company considers quality assurance as a key part of the activities to produce goods and services economically and to be of a standard which exceeds customers' needs. Customer satisfaction is at the heart of everything that Toyota does. In order to satisfy customer needs the company includes all 'members' (Toyota's name for its workers) in quality assurance activities. Everybody – from research and development to manufacturing, retailing and servicing – contributes to the quality process. All members have two roles – their own job and quality assurance. At Toyota this is referred to as 'company-wide quality control'.

Some people understand quality assurance to mean the inspection of parts after they are made. This is not Toyota's belief – total quality is carried out using two basic principles: quality is built in at every stage and quality is continually improved.



Points to think about:

- Why does Toyota take quality so seriously? How can it gain a competitive advantage from this approach?
- Why do you think it is important to involve all staff members in striving for higher quality?
- What do you understand by the term 'quality product'?

Introduction

A quality product does not necessarily have to be the 'best possible'. Read Activity 33.1 to find out why.

KEY TERM

quality product a good or service that meets customers' expectations and is therefore 'fit for purpose'

ACTIVITY 33.1

Read the case study below and then answer the questions that follow.

Are expensive products always the best quality?

The operations manager at Athletic Shoes was proud of the quality standards his business achieved. 'Our sports shoes sell for a retail price of $25, so they are not the best or most stylish on the market. However, only four customers returned shoes because of serious problems over the last year when we sold 50 000 pairs. All workers are accountable for the products reaching minimum standards of quality at each stage of production. Of course, there are better shoes available, but our customers know what they are getting.'

The customer service manager at the Exclusive Footwear shoe shop was about to return a pair of hand-made leather fashion shoes to Ital Fashion Shoe producers. 'We retail these for $400 a pair and customers paying such high prices expect, reasonably in my view, a near-perfect product. Even the smallest scratch or imperfection means the customers reject them. Although Ital checks every shoe made at each stage of production a few very minor blemishes are sometimes missed.'

14 marks, 23 minutes

1 The consumers of these different types of shoes seem to have different product expectations. Explain why this is. [4]

2 Using just this case study, how would you attempt to explain what 'quality' means? [4]

3 Briefly explain how the two different methods used for achieving quality seem to operate. [6]

The concept of quality

As Activity 33.1 showed, consumer expectations will be very different for goods and services sold at different prices. A quality product does not *have* to be made with the highest-quality materials to the most exacting standards – but it must meet consumer requirements for it.

In certain cases, a product must meet the highest quality standards and the high cost of it becomes almost insignificant. Internal parts for a jet engine used on a passenger plane will be expected to have a failure rate of less than 1 in 1 million. However, if fashion clothing was made to the same exacting standards with regards to stitching, buttons, zips and so on – how much would a pair of jeans cost then? Designing too much quality into a product that consumers do not expect to last for many years can make the product very expensive and uncompetitive.

A Rolls-Royce aircraft engine – customer expectations of quality mean that it has been constructed to the highest possible standard

A quality product does not have to be expensive. If low-cost light bulbs and clothes pegs last for several years in normal use, then they have still met consumer expectations and have been of the required quality. So, a highly priced good may still be of low quality if it fails to come up to consumer requirements. A cheap good can be considered of good quality if it performs as expected. It should now be clear that quality is a relative concept and not an absolute one – it depends on the product's price and the expectations of consumers.

KEY TERM

quality standards the expectations of customers expressed in terms of the minimum acceptable production or service standards

33 Quality assurance

It is easy to think of quality standards in terms of manufactured goods – the reliability of cars or the wear rate of clothes, for example. However, quality is a crucial issue for service providers too. For example, the quality of service offered by UK banks is claimed to be inferior to those in other countries in terms of:

- time taken to answer the telephone
- no indication of waiting time on the telephone
- queuing time in branches
- contact with the same person on each occasion
- number of accounts errors made
- quality of financial advice given.

The advantages of producing quality products and services are:

- easier to create customer loyalty
- saves on the costs associated with customer complaints, e.g. compensation, replacing
- defective products and loss of consumer goodwill
- longer life cycles
- less advertising may be necessary as the brand will establish a quality image through the performance of the products
- a higher price – a price premium – could be charged for such goods and services. Quality can, therefore, be profitable.

EXAM TIP

Quality is often viewed by candidates as an absolute concept and not a relative one. Quality must be explained in reference to the expectations of the target market consumers. The level of quality selected by any business must be based on the resources available to it, the needs of the target market and the quality standards of competitors.

Quality control and quality assurance

KEY TERMS

quality control this is based on inspection of the product or a sample of products

quality assurance this is a system of agreeing and meeting quality standards at each stage of production to ensure consumer satisfaction

These two terms are used to classify two very different approaches to managing and achieving quality in any business.

Quality control is the traditional approach to achieving quality based on inspection or checking, usually of the completed product or of the service as it is being provided to a consumer. For example:

- an MP3 player being tested at the end of the production line for battery-charging capability
- a telephone-banking adviser having a call to a customer listened to and recorded.

QUALITY-CONTROL TECHNIQUES

There are three stages to effective quality control:

1. Prevention – this is the most effective way of improving quality. If the design of the product follows the requirements of the customer and allows for accurate production, then the other two stages will be less significant. Quality should be 'designed into' a product.
2. Inspection – traditionally this has been the most important stage – but it has high costs and these could be reduced by 'zero-defect' manufacturing that is the aim of total quality management (TQM).
3. Correction and improvement – this is not just about correcting faulty products but is also concerned with correcting the process that caused the fault in the first place. This will improve quality in the future.

Inspecting for quality

Traditionally, quality has been checked by inspecting products at the end of the production process. Some checking might take place at different stages of the process, but the emphasis was on the quality of the finished article. Quality inspection is expensive – qualified engineers have to be used – and such checks can involve damaging the product, for example dropping computers to see if they still work. As a result, a sampling process must be used and this cannot guarantee that every product is of the appropriate quality. When quality checks are used during the production process statistical techniques are used to record and respond to results.

Weaknesses of inspecting for quality

The key point about inspected quality is that it involves a group of quality-control inspectors who check the work of workers. There are several problems related to this approach to quality:

- It is looking for problems and is, therefore, negative in its culture. It can cause resentment among workers, as the inspectors believe that they have been 'successful' when they find faults. Workers are likely to view the inspectors as management employees who are there just to check on output and to find problems with the work. Workers may consider it satisfying to get a faulty product passed by this team of inspectors.

- The job of inspection can be tedious, so inspectors become demotivated and may not carry out their tasks efficiently.
- If checking takes place only at specific points in the production process, then faulty products may pass through several production stages before being identified. This could lead to a lot of time being spent finding the source of the fault between the quality checkpoints.
- The main drawback is that it takes away from the workers the responsibility for quality. As the inspectors have full authority for checking products, the workers will not see quality as their responsibility and will not feel that it is part of their task to ensure that it is maintained. Ultimately, this lack of responsibility is demotivating and will result in lower-quality output.

Inspecting for quality, therefore, has many weaknesses. It is hardly surprising that there has been a move away from this approach in recent years.

QUALITY ASSURANCE

Quality assurance is based on setting agreed quality standards at all stages in the production of a good or service in order to ensure that customers' satisfaction is achieved. It does not just focus on the finished product. This approach often involves self-checking by workers of their own output against these agreed quality standards. The key differences between the two methods are that quality assurance:

- puts much more emphasis on prevention of poor quality by designing products for easy fault-free manufacture, rather than inspecting for poor-quality products – 'getting it right first time'
- stresses the need for workers to get it right the first time and reduces the chances of faulty products occurring or expensive reworking of faulty goods
- establishes quality standards and targets for each stage of the production process – for both goods and services
- checks components, materials and services bought into the business at the point of arrival or delivery – not at the end of the production process by which stage much time and many resources may have been wasted.

The quality-assurance department will need to consider all areas of the firm. Agreed standards must be established at all stages of the process from initial product idea to it finally reaching the consumer:

- Product design – will the product meet the expectations of consumers?
- Quality of inputs – quality must not be let down by bought-in components. Suppliers will have to accept and keep to strict quality standards.
- Production quality – this can be assured by total quality management (TQM) and emphasising with workers that quality levels must not drop below pre-set standards.
- Delivery systems – customers need goods and services delivered at times convenient to them. The punctuality and reliability of delivery systems must be monitored.
- Customer service including after-sales service – continued customer satisfaction will depend on the quality of contact with consumers after purchase.

For example:

- Nissan car factories have predetermined quality standards set and checked at each stage of the assembly of vehicles – by the workers accountable for them.
- First Direct, a European telephone banking organisation, sets limits on waiting times for calls to be answered, average times to be taken for meeting each customer's requests and assurance standards to monitor that customer requests have been acted on correctly.

Quality assurance has the following advantages:

- It makes everyone responsible for quality – this can be a form of job enrichment.
- Self-checking and making efforts to improve quality increases motivation.
- The system can be used to 'trace back' quality problems to the stage of the production process where a problem might have been occurring.
- It reduces the need for expensive final inspection and correction or reworking of faulty products.

EXAM TIP

Remember, quality is not just an issue for large businesses. Small and medium-sized firms must ensure that the quality level selected and the quality-assurance methods used are within their resources. In fact, by using quality assurance that helps to reduce wasted faulty products and on staff self-checking quality levels, these businesses can save money in the long term.

Importance of quality-assurance systems

There are several reasons why it is important for businesses to establish quality-assurance systems:

- to involve all staff and this can promote team work and a sense of belonging which aids motivation
- to set quality standards for all stages of production so that all materials and all production phases are

checked before it is 'too late' and the whole product has been completed
- to reduce costs of final inspection as this should become less necessary as all stages and sub-sections of the process have been judged against quality standards
- to reduce total quality costs – by instilling in the whole organisation a culture of quality, it is possible for quality assurance to lead to reduced costs of wastage and faulty products
- to gain accreditation for quality awards – these can give a business real status or kudos. The most widely recognised quality award within the European Union is ISO 9000.

ISO 9000

KEY TERM

ISO 9000 internationally recognised certificate that acknowledges the existence of a quality procedure that meets certain conditions

This award is given to firms that can demonstrate that they have a quality-assurance system in place which allows for quality to be regularly measured and for corrective action to be taken if quality falls below these levels. This award does not prove that every good produced or service provided by the business is of good quality. It is an indication that a business has a system of quality in place that has relevant targets set and activities ready to deal with a quality problem.

To obtain ISO 9000 accreditation the firm has to demonstrate that it has:

- staff training and appraisal methods
- methods for checking on suppliers
- quality standards in all areas of the business
- procedures for dealing with defective products and quality failures
- after-sales service.

The benefits for a firm of being forced to establish a quality-assurance framework and to have this externally monitored are clear. There are, however, drawbacks such as costs of preparing for inspection and bureaucratic form filling to gain the certificate.

EXAM TIP

Remember, ISO 9000 is not a guarantee of good quality.

Total quality management (TQM)

This approach to quality assurance requires the involvement of all employees in an organisation. It is based on the principle that everyone within a business has a contribution to make to the overall quality of the finished product or service. By reducing waste and cost of rejected low-quality products TQM is a key component of the approach to operations management known as lean production.

KEY TERMS

total quality management an approach to quality that aims to involve all employees in the quality improvement process

lean production producing goods and services with the minimum of wasted resources while maintaining high quality

TQM often involves a significant change in the culture of an organisation. Employees can no longer think that quality is someone else's responsibility. Every worker should think about the quality of the work they are performing because another employee is, in effect, their internal customer. All departments are expected to meet the standards expected by its customer. These departmental relationships are sometimes known as quality chains. All businesses can, therefore, be described as a series of supplier and customer relationships.

For example:

- A truck driver who drops off supplies to retailers is the internal customer of the team loading the vehicle – goods must be handled carefully and loaded in the right order. The truck driver has to face the retailer if goods are damaged or the wrong ones delivered.
- A computer assembly team is the internal customer of the teams producing the individual components – a fault with any of these means the assembled computer will not meet quality standards.

To be effective the TQM concept must be fully explained and training given to all staff. TQM is not a technique, it is a philosophy of quality being everyone's responsibility. The aim is to make all workers at all levels accept that the quality of the work they perform is important. They should be empowered with the responsibility of checking this quality level before passing their work on to the next production stage. This approach fits in well with the Herzberg principles of job enrichment (see Chapter 14 'Motivation', page 145). TQM should almost eliminate the need for a separate quality-control department with inspectors divorced from the production line itself.

ACTIVITY 33.2

Read the case study below and then answer the questions that follow.

Trinidad Tractor Factory Ltd (TTF) – quality becomes an issue

The last meeting between the marketing director and the operations manager of TTF was very heated. They each blamed the other for the disappointing data below. The marketing director had complained that 'The number of faulty tractors leaving our factory has increased and this has directly led to both rising customer complaints and lower sales. Our reputation is being damaged by these faults and many former customers are now buying imported tractors. We have just lost a government order for 15 tractors as our competitor was able to boast about their ISO 9000 certificate.' The operations manager had replied by saying that customers were becoming much more demanding and it was up to the marketing department to provide good after-sales service. 'I have increased the number of quality control engineers from five to eight and we are correcting more faults in completed products than ever before.'

	TTF customer complaints	TTF sales (units)
2009	53	2345
2010	78	2124

26 marks, 45 minutes

1 Outline the problems that TTF has because of low-quality products. [6]

2 Discuss whether the increase in the number of quality-control inspectors was the best way to try to improve quality. [8]

3 Explain the difference between quality control and quality assurance. [4]

4 Do you think that TTF should establish a quality-assurance system and apply for an ISO award? Justify your answer. [8]

TQM aims to cut the costs of faulty or defective products by encouraging all staff to 'get it right first time' and to achieve 'zero defects'. This is in contrast to traditional inspected quality methods that considered quality control as being a cost centre of the business. Under TQM, if quality is improved and guaranteed, then reject costs should fall and the demand for the products rises over time. However, TQM will only work effectively if everyone in the firm is committed to the idea. It cannot just be introduced into one section of a business if defective products coming from other sections are not reduced. The philosophy requires a commitment from senior management to allow the workforce authority and empowerment, as TQM will not operate well in a rigid and authoritarian structure.

KEY TERMS

internal customers people within the organisation who depend upon the quality of work being done by others

zero defects the aim of achieving perfect products every time

Jaguar uses quality-assurance systems and it now has one of the highest US customer satisfaction ratings of any car maker

H HIGHER LEVEL

Kaizen – continuous improvement

ROLE OF KAIZEN IN QUALITY IMPROVEMENT

KEY TERM

Kaizen Japanese term meaning continuous improvement

The philosophy behind this idea is that all workers have something to contribute to improving the way their business operates and the way the product is made. Traditional styles of management – possibly based on a Theory X approach (see Chapter 14, page 144) – never give workers the opportunity to suggest improvements to the way things

are done because the assumption is that trained managers 'know best'. The objective of managers adopting this approach is to keep production up to the mark and then look for one-off improvements in the form of inventions or to make investments in machines to increase productivity.

The Kaizen philosophy suggests that, in many cases, workers actually know more than managers about how a job should be done or how productivity might be improved. Someone who works at a task every day is actually much more likely to know how to change it to improve either quality or productivity than a manager with, perhaps, no hands-on experience of production at all.

Another key feature of this idea is that improvements in productivity do not just result from massive one-off investments in new technology. A series of small improvements, suggested by staff teams, can, over time, amount to as big an improvement in efficiency as a major new investment. This idea is illustrated in Figure 33.1.

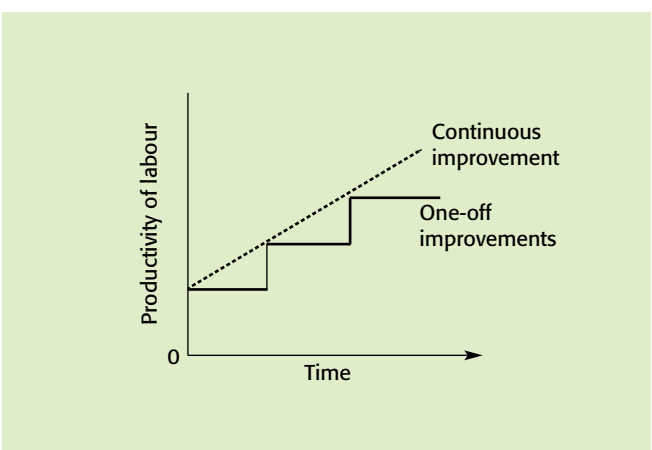


Figure 33.1 Kaizen compared to 'one-off' changes

Conditions necessary for Kaizen to operate:

1. Management culture must be directed towards involving staff and giving their views and ideas importance – managers must accept that in many areas of the business work experience will count for as much as theoretical knowledge.
2. Team working – suggesting and discussing new ideas to improve quality or productivity is best done in groups. Kaizen groups are likely to be drawn from the work team – or cell – operating in the place of work. Each Kaizen group should meet regularly – management must provide the time and necessary training – to discuss problems that they have identified. Recommendations for change could then be put forward to managers, or each group may be empowered to put their own ideas into practice.
3. Empowerment – by giving each Kaizen group the power to take decisions regarding workplace improvements, this will allow speedier introduction of new ideas and motivate staff to come up with further ideas. You should now be able to link this suggestion with the work of Herzberg and the concept of job enrichment. If every idea and suggestion made by a Kaizen group had to be put to managers – who could then either ignore it or accept it after consideration – staff would become quickly fed up with the process.
4. All staff should be involved.

EXAM TIP

In examination answers, it would be good analysis to link the Kaizen principle to the work of Herzberg on job enrichment.

KAIZEN – AN EVALUATION

There are some limitations to the Kaizen approach:

- Some changes cannot be introduced gradually and may need a radical and expensive solution: for example, the need for Kodak to invest heavily in the manufacture of digital cameras rather than film-based cameras when the new technology was introduced.
- There may be very real resistance from senior managers to such a programme due to their existing culture. Kaizen will only work effectively if there is genuine empowerment of the groups involved – authoritarian managers would find this impossible to accept.
- At least in the short term there may be tangible costs to the business of such a scheme, such as staff training to organise meetings and lost output as a result of meeting time.
- The most important advances tend to be made early on during the Kaizen programme – later changes can be less significant and this has led some observers to believe that there could be 'diminishing returns' from such an approach.

Benchmarking

KEY TERM

benchmarking comparing the performance – including quality – of a business with performance standards throughout the industry

The full title for benchmarking is 'best practice benchmarking'. This comparison with 'the best' will identify areas of the business that need to be improved to meet the highest standards of quality and productivity.

ACTIVITY 33.3

Read the case study below and then answer the questions that follow.

Kaizen thinking fires productivity

Mike Brookes, co-owner of Ambi-Rad, when asked why he failed for many years to introduce new ideas aimed at increasing competitiveness, gives a simple answer: he was too busy expanding. His Midlands engineering company is a European leader in gas-fired, 'radiant tube' heating systems. But Mr Brookes found little time to think about how to increase quality and productivity. 'We were a top-down company with all the new ideas coming from the directors,' explains Mr Brookes. The government minister for industry is particularly keen that smaller manufacturers should take on board 'Kaizen', or continuous improvement programmes of the kind initially introduced by Japanese firms in the past 20 years. The competitiveness problems were highlighted in a recent EU report, which put Britain in 11th position out of 15 in the EU productivity league table.

At Ambi-Rad, Mr Brookes decided to take action and implement 'Kaizen' thinking under which workers in the company hierarchy are given more control over decisions and encouraged to come up with suggestions for quality and efficiency improvements. Most of the 150 workers at Ambi-Rad's main plant in the UK are divided into eight groups, each one responsible for specific aspects of production. Team leaders encourage new ideas and link the shop floor and senior managers. One recent idea came from Jean Cox, an assembly worker at Ambi-Rad for 13 years. She suggested punching holes in a piece of metal in a different place to shorten the overall production process. The proposal was implemented, leading to a small but worthwhile productivity improvement. 'I feel I am much more involved,' says Ms Cox. 'As a problem occurs, rather than carry on regardless, we are now encouraged to think of a way round it.'

Some of the ideas are very simple, but suggestions from people like Ms Cox have taken $600 000 a year off the company's costs. The Kaizen scheme has enabled Ambi-Rad to maintain profits at a time of severe difficulties in the engineering business. In the past two years, many comparable UK companies have seen orders and earnings hit by the economic recession and weak demand in important markets.

'Partly because of the new manufacturing ideas we have kept pre-tax profits at 10 per cent of sales, which is really excellent by the standards of other engineering companies,' Mr Brookes says. This year Ambi-Rad expects to have sales of £18 million, more than twice the figure five years ago, and exports roughly a quarter of its turnover. Mr Brookes wants savings from Kaizen-based ideas to reach £1 million annually over the next few years.

36 marks, 60 minutes

1 Explain how Kaizen groups can help reduce costs for businesses such as Ambi-Rad. **[6]**

2 Identify and evaluate the benefits for three stakeholder groups in Ambi-Rad from the firm adopting Kaizen. **[12]**

3 Examine the conditions that are necessary for the Kaizen philosophy to be successful at businesses such as Ambi-Rad. **[8]**

4 Using the case study as a starting point, assess the possible relationship between the use of Kaizen groups and the leadership style of an organisation. **[10]**

Stages in the benchmarking process:

1 Identify the aspects of the business to be benchmarked – perhaps by interviewing customers and finding out what they consider to be most important. For example, research may reveal that the most important factors are reliability of the product, speed of delivery and after-sales service. These are the areas that the firm would first benchmark.

2 Measure performance in these areas – for example, reliability records, delivery records and the number of customer complaints.

3 Identify the firms in the industry that are considered to be the best – this process might be assessed by management consultants or by benchmarking schemes operated by government or industry organisations.

4 Use comparative data from the best firms to establish the main weaknesses in the business – these data might be obtained from firms by mutual agreement, from published accounts, specialist industry publications and contact with customers/suppliers.

5 Set standards for improvement – these might be the standards set by the best firms or they could be set even higher to create a competitive advantage.

6 Change processes to achieve the standards set – this may require nothing more than a different way of performing one task, but more substantial changes may be necessary.

7 Re-measurement – the changes to the process need to be checked to see if the new, higher standards are

being reached. Benchmarking is not a 'one-off ' exercise and to be effective it should become a continuous process to achieve long-term improvements in productivity and quality.

See Table 33.1 for an evaluation of benchmarking.

Benefits	Limitations
• Offers a faster and cheaper way of solving problems than firms attempting to solve production or quality problems without external comparisons. • Areas of greatest significance for customers are identified and action can be directed to improving these. • A process that can assist the firm to increase international competitiveness. • Comparisons between firms in different industries, such as customer service departments in a retailer compared to a bank, can encourage a useful crossover of ideas. • If the workforce is involved in the comparison exercise, then their participation can lead to better ideas for improvement and increased motivation.	• The process depends on obtaining relevant and up-to-date information from other firms in the industry. If this is difficult to obtain, then the benchmarking exercise will be limited. • Merely copying the ideas and practices of other firms may discourage initiative and original ideas. • The costs of the comparison exercise may not be recovered by the improvements obtained from benchmarking.

Table 33.1 *Benchmarking – benefits and limitations*

Quality issues – an evaluation

- Quality is not an 'option'. It is a fundamental aspect of all successful businesses.
- Quality is an issue for all firms, in all sectors of industry. It is essential for businesses to put quality of products and customer service at the top of their priorities to survive in competitive markets. Improving quality has obvious cost advantages if the rate of defective products is reduced.
- Satisfying customers will give clear marketing advantages when seeking further sales.
- Involving staff in quality improvement programmes can lead to a more motivated workforce.

ACTIVITY 33.4

Read the case study below and then answer the questions that follow.

Benchmarking is key to efficiency

Lord Simon is former chief executive of BP, and was responsible for introducing benchmarking to the oil company. 'Knowing the opposition and where it is making better profits is one of the most crucial bits of information you can get in business,' says Simon. 'In BP we faced the fact that American companies always achieved a higher return on capital than UK equivalents. Why should this be? We set ourselves a target to equal or exceed Exxon, at that time the best performer, within five years. It was a great way of focusing the mind.' Simon now promotes the benefits of benchmarking to all firms, especially to small and medium enterprises. 'They need clear data on where competitors are extracting greater profit margins, whether in production, marketing or distribution. Such data can change, enabling better decisions about how to allocate resources.'

Benchmarking also improves the focus and motivation of everybody in the company. 'When managers talk to staff about the need for change it can seem like just another demand,' says Simon. 'But if staff look at a benchmark and see the competition is doing better, they say, if they can do that, so can we.'

Closing the Gap, a DTI (Department of Trade and Industry) report, has indicated startling variations in performance. The top 25% of companies achieve profit margins five times greater than those in the bottom quartile. They achieve 98% supplier accuracy and delivery reliability against 60% accuracy and 85% reliability for bottom quartile companies. Spending on training is ten times greater and staff absenteeism rates up to 75% lower than in the bottom quartile.

12 marks, 21 minutes

1 Explain 'benchmarking'. [3]

2 Analyse **three** benefits to small and medium-sized enterprises of adopting benchmarking. [9]

H

THEORY OF KNOWLEDGE

'8 out of 10 owners said their cats prefer Whiskas' [catfood]
'Carlsberg is probably the best lager in the world'
BMW – 'The ultimate driving machine'
'Nothing acts faster than Anadin' [painkillers]

Businesses often make claims about the superior quality of their products.

a Find **four** more advertising slogans where businesses make claims about the superiority of their products.
b To what extent do organisations have a moral responsibility to meet these claims?

OVER TO YOU

REVISION CHECKLIST

1 Why does 'quality' not always mean 'making the best product possible'?
2 Explain **three** benefits to a business from producing quality products.
3 Why might 'designed-in' quality be better than 'inspected quality'?
4 Explain **two** drawbacks to inspected quality.
5 Outline the key features of total quality management.
6 Are the following statements true or false? Briefly explain your decision in each case.
   a An expensive product is always of higher quality than a cheaper one.
   b Insisting on higher quality standards always costs a business more.
   c ISO 9000 ensures products are of a high quality.
   d Quality-assurance systems can result in lower total costs for a business.
7 Explain why improving quality is important in an increasingly competitive market.
8 Use the example of a small manufacturer of fashion clothing to explain how quality assurance could be adopted.
(H) 9 Distinguish between quality control and quality assurance.
(H) 10 What are the problems often associated with effective benchmarking?
(H) 11 Examine **two** conditions that are necessary for a Kaizen programme to operate successfully.
(H) 12 Explain how a service-based business could benefit from adopting benchmarking.

REVISION ACTIVITY

Read the case study below and then answer the questions that follow.

Wiping out defects at Wheeler's

Wheeler's manufactures pumps, cables, controls and drums used by washing-machine producers. The company is a major supplier to most of the leading firms in the industry. The firm buys in a huge range of materials and components to make up the products it sells to the washing-machine makers. Wheeler's makes over 2000 different items. Today's consumers have high expectations for their new washing machines. They look for value for money and reliability. Manufacturers expect suppliers like Wheeler's to turn out parts to a high quality at the lowest possible cost. To satisfy these demands and to maintain an edge over cheaper foreign imports, Wheeler's follows a strict quality-assurance system. It has been awarded ISO 9000 – a certificate now demanded by many of its customers. There is a world of difference between setting targets for zero defects and low costs and actually achieving them. The growing demand for Wheeler's products is due in no small part to its reputation for quality, which is based on workers checking their own work using statistical control charts and recording the results of quality checks at regular intervals. Wheeler's operations manager believes that the company's success depends on three key operations management features:

- The lean production system has made 'just in time' a priority. They now produce what is wanted when it is wanted. This requires Wheeler's own suppliers to be reliable and to be involved in the design and quality of each component so that it is perfect for the task it has to perform.
- A well-trained, multi-skilled and flexible workforce. Workers have to be prepared to operate different machines and produce different items. They work in cells

or teams of between six and ten. Each cell is empowered to implement its own quality improvements established through regular Kaizen-type meetings. The workers have been successful in achieving very high productivity levels. Staff turnover is low.

- A quality-assurance system that puts the emphasis on 'prevention not detection'. Employees share responsibility for making defect-free products. For example, the team making electrical switches checks the quality of output at each stage. They will not pass any item on to the final assembly and packing stage – their 'internal customers' – unless it is defect free. This approach helped the company gain the ISO 9000 award.

24 marks, 42 minutes

1 What is meant by the terms:
   - **a** ISO 9000
   - **b** Kaizen groups
   - **c** quality assurance
   - **d** internal customers
   - **e** total quality management
   - **f** zero defects? **[12]**

2 An objective of the company is to achieve 'quality output at low costs'. Evaluate the importance of the **three** factors listed in the case study in helping to achieve this objective. **[12]**

EXAM PRACTICE QUESTION

Read the case study below and then answer the questions that follow.

QUALITY ASSURANCE AT THE HAIRDRESSERS

The Kuala Lumpur branch of FatBoyTrims had come bottom of all of the company's branches for customer satisfaction. The number of complaints received at head office about this branch and the quality of its haircutting and styling services had been much greater than for any other location. Revenue had fallen in recent months and the number of repeat customers had fallen to 15% of total custom. A competing business nearby, that charged at least 30% more, was always full. As a consequence, this branch of FatBoyTrims had spent more on advertising for new business than any other. The revenue per customer was also low as high-value services – such as colouring and tinting – were avoided by customers. A new manager had just been appointed to the branch and she immediately set about establishing a quality-assurance approach to improve customer satisfaction. She set quality targets for each stage of the customer experience. These included:

- maximum time for phone to ring
- maximum waiting time for appointment time
- maximum time between hair wash and cutting
- all customers to be offered refreshments
- minimum time spent by stylists with each customer
- feedback forms to be filled in by 20% of clients and stylists responsible for each client to discuss answers with client.

Each member of staff was given responsibility for at least one of these targets in an attempt to achieve continuous improvement in the hairdressers. A record had to be kept of the branch's success at meeting these targets. At first, branch costs increased as an additional staff member had to be recruited to help meet the quality standards. After two months, the number of repeat clients had reached 36% and the branch reduced its advertising expenditure. After four months, revenue had climbed by 38% and the branch had reached third place in the company league table for customer satisfaction. The competing branch had reduced many prices by 15%.

25 marks, 45 minutes

1 Define the following terms:
   - **a** quality assurance
   - **b** continuous improvement. **[4]**

2 Outline **two** drawbacks to this business of not meeting customer expectations. **[5]**

3 Analyse the benefits to this hairdressers of improving the quality of their service. **[7]**

4 Discuss the problems the new manager of FatBoyTrims might have when trying to implement the quality targets she has set. **[9]**