AS / A Level Year 1 AQA Business Course Companion

3.4: Operational Management

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Contents

Teacher's Introduction

This resource has been written to support the learning of Unit 4: Operational Management, which forms part of the AQA Advanced Level GCE in Business. It gives an in-depth view of the new qualification, presenting what specification points students need to know, plus extras along the way for extended learning.

At the beginning of this resource you will find a list of contents showing every specification point that is covered. There are also questions and answers at the end of the resource to help students apply their knowledge to real-life business contexts. Any key terms are revised as a glossary at the end of the resource.

Students get plenty of chance to practise their quantitative skills in this resource, including:

- Calculate, use and understand percentages (Chapter 3.4.2.)
- Construct and interpret a range of standard graphical forms (Chapters 3.4.3. and 3.4.5.)
- Calculate costs (Chapter 3.4.2.)
- Use and interpret quantitative and non-quantitative information in order to make decisions (Chapters 3.4.1. to 3.4.5.)
- Interpret, apply and analyse information in written, graphical and numerical forms (Chapters 3.4.1. to 3.4.5.)

While extremely valuable to a student's revision, this resource should be treated as a companion to the many other textbooks and activity guides available. As with any subject, it is good to read as widely as possible!

The subjects covered in this resource include everything from operations objectives and influences on these to efficiency, lean production and quality control and assurance. The notes included in this resource can be given to students before a lesson as preparation for a topic, afterwards in order to help solidify their knowledge, or can be used by teachers as a supplement to in-class exercises and activities.

It is hoped that this resource, as well as offering support for teaching the essential elements of the AQA examination, will help students build on their research and dissemination skills. The business world is a constantly changing one full of fascinating stories. This resource attempts to utilise some of these stories as a basis for teaching in the most interesting way possible, meanwhile encouraging further study from the next generation of business analysts!

Happy teaching!

August 2023

Update v1.1 – August 2023

- p.2 – section heading changed to '3.4: Operational Management'
- p.2 – removed paragraph on dependability
- pp.2–3 – removed 'External and internal influences'
- p.3 – removed question 2 and answers, renamed all questions following
- p.10 – JIT vs JIC paragraph added.
- p.15 – removed section on 'Flexibility, Speed of Response and Dependability'

3.4. Operational Manageme

3.4.1. Setting Operational Objectives

Key Points Covered

- Common Operations Objectives

Businesses set themselves operational objectives as a way to direct their produc anything fr[illegible] efficiency to productivity and volume. One thing every o common, th[illegible]is that it must fall in line with the firm's own corporate objecti objectives for marketing, sales and management and so the operations objective Another important element to operations objectives is that they are flexible eno in the business – a firm that used to focus on quality and innovation, for instance cost savings after the effects of the 2008 financial crisis.

Common Operations Objectives

Cost: A business that keeps its costs down can then pass these savings on to its c make higher dividend payments to shareholders. Most firms will address their co efficiency and/or the productivity of their operations.

Quality: This refers to the expectations of a product or service. Consumers expec businesses and so it is common for firms to invest in eith[illegible]ality control, qualit the quality of a product at one stage of the operat[illegible]p[illegible]ess, the quicker it can This helps increase efficiency and, ultimat[illegible]ing down the cost per unit. Highe consumers, who would be more likely to make a purchase.

Speed of Re[illegible]se / Flexibility: A business that can react quickly and efficient able to ben[illegible]m increased sales and profits. Today's society is constantly mo over one another to offer the most convenient and most personalised service th be able to deal with spikes/troughs in demand, which can come at any given mo imperative element in the operations gambit.

Environmental Issues: This is no longer an objective just for firms that care abou cause to the environment. Most firms today have some sort of corporate social r whether dictated by the government or by the average consumer who now expe firms save money (by reducing waste and lowering their bills) and creates the im consumers feel good about supporting. Many businesses have grown their mark environmentally friendly practices.

Added Value: This is the process of turning raw materials int[illegible]a finished product what it ends up selling are two very different thing[illegible]he amount of profit that a the raw materials is the value that it has man[illegible]ed to add.

3.4.1 [illegible]e[illegible]s

Please write your answers on a separate piece of paper or in an exercise book.

1. Explain why a business might focus on quality as its main operational obje

3.4.2. Analysing Operational Performance

Key Points Covered

- Labour Productivity
- Capacity Utilisat

Operations data is of great importance to busines es. It gives a clear picture of a while offering ways in which it can impr ve

- Using operations data, a business can analyse its efficiency against previous is succeeding and how much
- Measu ou ness's efficiency creates milestones for it to achieve
- Milesto are useful for both a business's leadership and for the entire wo common goals
- A firm can use its past and present operational data in order to project pote productivity/efficiency depending on costs and output
- The data shows a business's limits, such as the absolute maximum capacity longer efficient
- Operational data tells businesses how much something should cost to prod how much to sell it for

Labour Productivity

Production and *productivity* differ in a similar way to distance and speed, e.g. distanc able to go while speed shows how quickly they were able to do it. Production is, the produces in a specific amount of time, while productivit t e hourly rate of out

Outputs can include the amount of pro per person, per factory or per mach monitor their employees on ha ary s es they make. This productivity is measur

Labour pro y measured using the calculation:

$$\text{Labour Productivity} = \frac{\text{Output (over specific period)}}{\text{Number of Employees}}$$

Let's use an example:
Gloved Elegance Ltd employs a team of 70 textile workers, who produce 3,500 pairs of gloves per week. To find the labour productivity of the firm's 70 employees in one week, we can calculate:

$$\text{Labour Productivity (in units)} = \frac{\text{Output per week}}{\text{Number of Employees}}$$

$$\text{Labour Productivity (in units)} = \frac{3500 \text{ units}}{70 \text{ workers}}$$

Labour Productivity (in units) = units per worker p

We can also calculate labour productivity in o ne, i.e. how much time it take the gloves example again, this time c the total time that employees work pe

$$\text{Labour Productivity (in time)} = \frac{\text{Labour hours per}}{\text{Units produced pe}}$$

$$\text{Labour Productivity (in time)} = \frac{2100 \text{ hours per}}{3500 \text{ units per}}$$

Labour Productivity (in time) = 0.6 hr per uni

This tells us that it takes 0.6 hours (around 35 minutes) on average for Gloved El

Technological Improvements

Technology offers a variety of possible improvements to any company's operat
use of electronic databases for stock control, opening communications worldw
customers to shop more conveniently online and connect via social media. Tec
automate their production and marketing processes; this has led to the advent
enables customers to design their own goods and have companies produce and

In the case of Gloved Elegance Ltd, a machine may be able to produce the glov
productivity to, say, 85 pairs of gloves per week. This would reduce the numbe
the job, which is an attractive prospect to any company looking to save money

It is good [Zig Zag Education] however, that not all machinery can perform tasks to the hig
workers. Many consumers also value handmade goods over their machined co
the quality.

Factors that Influence Productivity

Businesses use all sorts of methods in order to increase their productivity, includ

- Increasing the number of hours that employees work
- Making changes to key business processes
- Motivating the workforce
- Purchasing new equipment, technology and premises
- Increasing the amount of training that employees receive

There are downsides to these methods, however, which can lead to pushback fr

- Employees very rarely choose to work longer hours
- While a firm may offer new training on [illegible]ge business procedures, their w
to learn
- If a labour force is [illegible]ted to increase its productivity, it may want to be re
- When [Zig Zag Education] firm announces changes that affect productivity, some membe
as a thr[illegible]d their jobs

Productivity, Efficiency and Competitiveness

Firms looking to improve their competitiveness within a market (e.g. gain more ma
productivity and efficiency (more on efficiency in Chapter 3.4.3.) as means of achie
department is normally the business area responsible for increasing productivity
line with the aims and objectives of the business. If the business's focus is to dec
operations will need to support this by increasing productivity and efficiency.

There are many other reasons why firms strive to improve productivity and effic

- Firms that cannot produce enough to fulfil market demand will lose out to r
must, therefore, increase productivity in order to meet demand and stay re
- Markets that have particularly price-elastic dema[illegible]e very competitive an
to reduce their costs enough (e.g. by increasing [illegible]ductivity and efficiency)
- If a firm's main objective is to [illegible]se its costs by 15 per cent, it can achiev
Efficient use of resour[illegible]w firms to maximise production and lower th
- The savi[illegible]tha[illegible]ess makes through productivity and efficiency can b
lower [Zig Zag Education] Alternatively, the business could opt to invest its savings into t
develop[illegible]oducts/services that are more suited to its customer's needs
- Service-focused firms will concentrate on productivity as a way to provide a
more goods/materials a business has available at any time, the more quickl
demand and, hopefully, encourage further sales in future

Average Unit Costs

One way that firms can improve on their competitiveness is by bringing down thei
to check a firm's average costs on a regular basis, especially when it makes any cha

Average costs are found by calculating:

$$\text{Average Costs} = \frac{\text{Total Costs}}{\text{Number of Units Produced}}$$

In the case of Gloved Elegance Ltd, we would calc[illegible]:

$$\text{Average Costs} = \frac{\text{Total Costs per week}}{\text{Units Produced per week}}$$

The total cost [illegible] 3,500 pairs of gloves per week is £5,250 and so the ca

$$\text{Average Costs} = \frac{\text{Total Costs per week}}{\text{Units Produced per week}}$$

$$\text{Average Costs} = \frac{5250 \text{ per week}}{3500 \text{ per week}}$$

$$\textbf{Average Costs} = \textbf{£1.50 per unit}$$

Costs of production often increase when a business produces more goods. It is i
business is productive enough in order to keep its average costs to a minimum.

Capacity Utilisation

Firms calculate capacity utilisation to show their actual output and how it compa
output they could produce.

The equation for this is:

$$Capacity\ Utilisation = \frac{Current\ Output}{Maximum\ Possible\ Outpu}$$

In order to cal[illegible] utilisation, of course, a firm must know what its ca
level is 50 u[illegible] worker per week, for instance, then the firm can calculate ho
producing w[illegible]ay, 500 workers:

$$\text{Capacity} = \text{Productivity per person x Number of p}$$

$$\text{Capacity} = 50 \text{ units x } 500$$

$$\textbf{Capacity} = \textbf{25,000 units}$$

This figure tells us that the company can potentially produce 25,000 units per wee
Of course, nothing in business is ever simple and no firm hits its maximum capacity

Let's use an example:

Plastic People Ltd is a company that manufactures mannequins for fashion retail
owns three factories where it is able to produce a maximum of 50,000 mannequ
however, it has only managed to produce 37,000 mannequ[illegible] each month.

$$Capacity\ Utilisation\ for\ Pl[illegible]c\ [illegible]ple\ Ltd = \frac{Current\ O}{Maximum\ Pos}$$

$$[illegible]acity\ Utilisation\ for\ Plastic\ People\ Ltd = \frac{37,0}{50,0}$$

$$Capacity\ Utilisation\ for\ Plastic\ People\ Ltd = 0.7$$

$$\textbf{Capacity Utilisation for Plastic People Ltd} = 74$$

This calculation shows that Plastic People Ltd is performing at only *74 per cent o*

Implications of Under- and Over-utilisation of Capacity

In the previous example for Plastic People Ltd, we showed that the business was was not making the most of the machinery/workforce/equipment available to it over-utilisation, where a business runs at more than 100 per cent of its available

There are problems that come with under-utilisation of capacity, including:

- The fewer resources that are used by a firm, the hig[illegible]e fixed costs are t if fixed costs are spread across more product[illegible], they will work out cheaper p
- Firms that under-utilise their ca[illegible]y [illegible]he risk of not meeting demand w case, a firm would have *sales* [illegible]*demand* that it is unable to fulfil. This could l negative image for[illegible] a firm that is not strong enough to compete.
- The w[illegible]e of a firm that under-utilises its capacity could be lacking in m over-ac[illegible]

Over-utilisation of capacity comes with many issues, too, including:

- Workload can get too intense for a firm's workforce, who then become dem
- Whenever machines or people do things quickly, they run the risk of sheddi able to produce more goods in the given time, but each product may be uns
- If a business is already producing at over-capacity, it will have problems if/w as the firm will have no way of fulfilling its surge in custom
- Maintenance of equipment and machinery becomes near-impossible since b at all times

Silver Linings

It is worth noting that there are positives that come from b[illegible]h over- and under at under-capacity, for instance, will have time avail[illegible]y d[illegible] necessary mainte spikes in demand. Over-utilisation, on the [illegible]er [illegible]d, will create maximum sal This will lead to profit, which can b[illegible] inv[illegible]ed into the business in order to pu the business can better m[illegible]d.

Improvin[illegible]apacity Utilisation

As we now understand, fixed costs do not change and so businesses should alwa of the capacity they have available. This will help keep production costs low whil still fulfil potential demand.

A firm can make improvements to its utilisation (whether increasing or decreasin ways, including:

- **Estimate the long-term levels of sales:** this will help the business prepare it demand so that it is always working as close to the necessary capacity as po
- **Create more demand:** this can be done through promotion and brand stren a business has capacity to produce 100,000 units, for example, but does not work to create that demand.
- **Understanding the consumer:** this is normal[illegible]y d[illegible] through primary and se more a business learns about its cu[illegible] (and potential customers), the b to make sure it meets de[illegible]d.
- **Sale of assets:** if [illegible]ness is continually unable to use its entire capacity to con[illegible]elli[illegible] some of its machinery/equipment. This money could the as pron[illegible] in order to create more interest in its goods.
- **Employing more/fewer staff:** capacity can take the form of equipment, mac business has more employees than its consumer demand requires, it may n Likewise, if demand is high, the business could need more staff in order to r manufacture goods.

Learn These Calculations:

$$\text{Labour Productivity} = \frac{\text{Output (over specific per}}{\text{Number of Employees}}$$

$$\text{Average Cost per Unit} = \frac{\text{Total Costs}}{\text{N}\ldots\text{er of Units Produ}}$$

$$\text{Capacity} = \text{Producti}\ldots\text{ity} \times \text{person x Number of p}$$

$$\text{Capacity Utilisation} = \frac{\text{Current Output}}{\text{Maximum Possible Outpu}}$$

3.4.2. Questions

Please write your answers on a separate piece of paper or in an exercise book.

2. Copy out the following statements into the correct categories.

Statements
• Quality might be ignored and so can decrease to the point of product • The fewer goods a firm produces, the higher the fixed costs per unit • Maintenance of equipment becomes impossible as there is simply no • Workforces lack in motivation as there is little drive to over-achieve • Motivation of employees decreases because the amount of work is to • Firms are unable to meet sudden spikes in demand

Drawbacks of under-utilisation	Drawbacks o

3. A cutlery manufacturer produces between 250,000 and 300,000 sets of cu… produce this many goods, the firm uses three ex…ic pieces of machine… employs a workforce of 200. In recent ye…s, however, the demand for cut… firm has had to cut back on the n…of goods it produces.

a. Identify whet… manufacturer is experiencing under- or over-uti…

b. …lain …y in which the firm could improve its utilisation of capa…

3.4.3. Making Operational Decisions to Improve P
Increasing Efficiency

Key Points Covered

- The Importance of Efficiency
- Lean Production

Efficiency

This refers to the maxi[illegible]ut a business can achieve through a minimum n
Efficiency i[illegible]e[illegible]ing from a business's workforce to its procedures, scal
(i.e. equipm[illegible]d machinery).

Efficiency can be improved either by a firm increasing the number of outputs it p
producing its outputs using fewer inputs.

Let's show that visually:

Efficiency method 1:

Business's Inputs (i.e. labour, capital, etc.)	→	More O (i.e. pro

Efficiency method 2:

Fewer Inputs (i.e. labour, capital, etc.)	→	Busines (i.e. pro

Labour-intensive or Capi[illegible]itc[illegible]sive Production?

In business, we say th[illegible]e four main resources used for production, or fo

Labour: this [illegible]energy (physical or mental) that people put into working.
Land: the natural resources that a business needs to use in its production.
Capital: the other goods (e.g. equipment or transport) that a business needs to c
Enterprise: this is the entrepreneur's ability to use land, labour and capital and t
goods/services. The end goal, normally, is that the entrepreneur can sell these g

Land and enterprise are extremely limited commodities while labour and capital
such, businesses set themselves out as either *capital-intensive* or *labour-intensiv*

Businesses make the decision on whether to focus on labour- or capital-intensive
- the skills and efficiencies available with each factor of production, i.e. is the
efficient than the machinery? Could it produce more at a lower cost if it inve
- the size and strength of the firm within the market[illegible]e
- the financial position of the firm, i.e. what ca[illegible]it [illegible]ally afford?
- the kind of service consumers need e[illegible]and want
- what rival companies are [illegible]ng[illegible]e can the firm differentiate itself by offeri
of production?

When a firm understands which route is best for it, it can explore the different o
more efficient. These include:

- ***Productivity of labour:*** encouraging the workforce to increase their product
targets, motivation and/or better matching people's skills to tasks
- ***Nature of processes:*** businesses must use the correct method of production
might use flow production since it needs to produce many goods all to the e
- ***Capital utilisation:*** the fixed costs of a busines[illegible] are the same regardless of
business must utilise these (i.e. equipment, machinery) to their maximum c
goods/services will become more expensive to produce.
- ***Scale:*** businesses all [illegible] profit and so they also look to grow. This can le
purchasing wh[illegible] a business lower costs overall. However, if a busines
from o[illegible]omies of scale, such as poor communication through long chai
- ***Innovation:*** firms are always looking for cost savers, ways to either produce
efficiently or deliver them more cheaply. Retailers that move online, for inst
longer needing a shop window.
- ***Lean production:*** businesses invest in methods to reduce waste not only to
a way to save money. Less waste (as well as fewer repeat processes) helps b
improve efficiency.

Lean Production

This is a form of production that focuses on waste-saving measures. Inspired by
production involves a range of techniques, including:

- just-in-time (JIT)
- total quality management (TQM)
- Kaizen
- cell production
- waste minimisation
- improv[illegible]t c[illegible]unications between production and marketing depar

Let's look at [illegible] aspects of lean production: JIT and waste minimisation:

Just-in-time Management

The just-in-time (JIT) method of managing stock has become more adopted over
method keep a low inventory of stock and produce only to specific orders. This n
forecasting method, wherein businesses predict how much demand there will be
to cover this; instead, businesses produce to requirements. This method require
businesses must be able to inform their suppliers in time when consumer deman

Reasons to Use JIT Management:

- ***Time saver:*** businesses receive an order, request the stock from their supplie
good or put it directly on the shelves. There is no need to keep stock in storag
- ***Money saver:*** the business should spend less [illegible]ne[illegible]n stock until they abs
- ***Compact production:*** with less stock [illegible]age, a company's production lin
more efficient as a result
- ***Add value:*** a busi[illegible]n stantly add value to its stock because it is either
shelve[illegible]and [illegible]ured/converted into a good. There is very little time for
would [illegible]ney wrapped up in stock.
- ***Less obsolescence:*** this is still a risk, but businesses run much less risk of ob
and sell goods when there is demand
- ***Less risk to goods:*** if fewer goods are in storage, then they are less likely to

The JIT method is particularly suited to businesses such as car manufacturers, and pu
both of these cases, stock is only required once an order has been placed. Alongside
the JIT method can help a business eliminate unnecessary stock and improve efficien

Just-in-time (JIT) vs Just-in-case (JIC)

Businesses using the JIC method keep a higher inventory of stock so they are not
unexpected demand or a hold-up in the supply chain. The JIC method has higher
method, and there is a greater risk of wasted stock as items become obsolete
JIC method means a business can cope with an unexpected increase in demand,
supply issues. A business may also save money by bulk purchasing stock in advan

Waste Minimisation

Businesses can reduce the amount of waste they create for many reasons, from addr
reacting to consumer demand. By correctly managing their waste, businesses ca
while simultaneously bringing down their costs of production.

Technology has been a major player in the movement towards waste minimisati
these new technologies in order to:

- reduce defective products
- curb overproduction of goods
- decrease wait time for consumers and downtime of machinery
- monitor and moderate unnecessary stock
- streamline production

Waste minimisation also relates to actual waste, i.e. overuse of product packagin
bring down their packaging costs by using reusable boxes, transport costs, mean
ship their goods in bulk rather than per order.

The Benefits and Drawbacks of Lean Production

Businesses can reap many benefits from employing lean production, including:

- ***Productivity:*** this increases as employees and management decide on the m
produc
- ***Motivation:*** businesses can motivate their workforces by giving more respo
- ***Shared decisions:*** empowered workforces take part in decision-making, whi
management and opens up the potential pool of ideas
- ***Waste management:*** businesses that operate lean production benefit from
holding (from JIT methods), which increases available funds and, therefore,
- ***Quality:*** employees and management work together to streamline and imp
can help increase quality

Many factors can work against a company, however, such as:

- ***Suppliers:*** there is very little waste in lean production, including stock, and s
can trust to do a good job at short notice. If a supplie s to produce stock
suffer greatly.
- ***Expensive:*** it can be costly to do on a large scale, as businesses need to em
systems in order to monitor incoming orders and available stock.
- ***Mass orders:*** if a business suddenly receives a giant order, it may not b
reque re ar, the business's suppliers may not be able to provide en
- ***Unfore circumstances:*** war, famine or natural disaster in a country that
halts on any stock or planned production.

The Difficulties with Increasing Productivity and Efficiency

There are plenty of reasons why companies find it difficult to increase their prod

Management Culture: if a company is ever to change, its management needs to department heads are often consumed with the idea of increasing production, n jump at the idea of overtime rather than becoming more efficient in order to get specification. Employees are normally fine with this as more overtime equals mo have the production levels at the end of the day. However such low productivity making a loss overall.

Expectations: motivation is a key part of increasing efficiency and producti this as an impossible challenge, i.e. the company expecting far more than should decrease in motivation if handled incorrectly by the firm.

Change in Labour: by innovating on productivity, a business can have less need f employees often fear. Employees and management need to work together in or the possibility of job losses often makes workers only focus on the short-term pr benefits of a more productive workplace.

Investment: this is often necessary when it comes to increasing efficiency and pr investment comes with a price and so businesses will expect results the more m

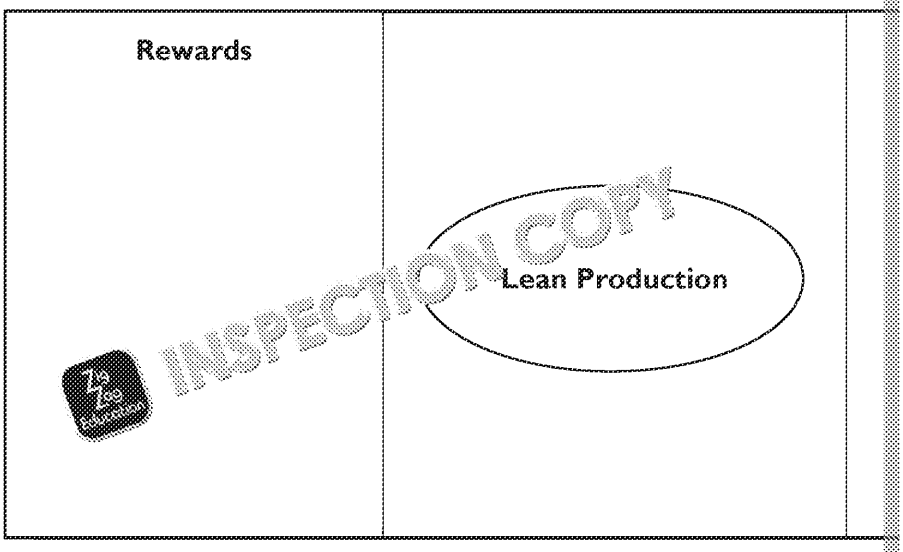
Technology: if the investment that the company makes is in expensive technolo competition the moment a better piece of equipment is released.

Ability: some employees will take to this process better than others and so the f emerging between those who benefit from the change and those who struggle. T cause resentment in the firm's ranks.

3.4.3. Questions

4. Identify and explain two ways in which a firm can increase its efficiency.

5. Fill in the lean production graphic below with the following factors, showin benefit to businesses or a drawback.
   - Productivity
   - Suppliers
   - Waste Management
   - Increased Orders
   - Quality
   - Motivation
   - Costs



3.4.4. Making Operational Decisions to Improve P
Improving Quality

Key Points Covered

- Quality Assurance vs Quality Control
- The Benefits and D

Quality is imperative to almost any business. If a firm is known for producing lousy g may remember this and forever associate it with the brand name (even if the firm h Ensuring qu[illegible] is one of the most effective ways in which a firm can imp

Quality Assurance vs Quality Control

These two terms are frequently used in business and are often confused. Let's se *quality assurance* and what is *quality control*.

	Quality Control (QC)	Quality A
Description	Analysis of quality in a finished good/service.	Analysis of quality in busines produce goods/services.
Why used?	QC is a corrective method. It helps identify and fix defects in goods before they are released.	QA is a managerial method. business's production proce
When used?	This is a reactive measure. Businesses make improvements to a defects at t[illegible] pr[illegible] process.	This is a proactive measure. processes need to be put in from occurring.

Quality Circ[illegible] e way for businesses to empower their workforces is to use *q* of their employees into groups (quality circles) and give them direct responsibilit and helping to improve – business processes. The circles identify potential for en productivity and efficiency.

Kaizen

Kaizen businesses work to improve their processes with the idea that this should outcomes. Unlike quality circles, which give responsibility to some employees, ka of the workforce by continually asking for ideas on how employees believe their

The kaizen method (also known as *continuous improvement*) can bring about ma employee motivation and productivity, reduction in waste in processes, higher q to a business's final products/services. Firms that use kaizen consider it an integr practices. A good example of kaizen-focused business is the Japanese car manuf

Did You Know?
The word 'kaizen' is Japanese for 'improvement'.

The philosophy behind kaizen is based on *gradual change* and *employee suggest* small, considered steps (rather than focusing on large, individual innovations) wi volume of changes will eventually result in huge improvement.

Businesses cultivate a *culture* of continuous improvement by encouraging their w These suggestions can be as big or small as necessary – sometimes improving the creates the most noticeable of results! Suggestions can b[illegible]n anonymously, u in person. Kaizen businesses focus on the talents [illegible] employees, and their a rather than invest in expensive machiner[illegible]de to get to the same outcome.

Kaizen may seem like a l[illegible] (and, therefore, pricey) way of working, but (the people [illegible]in[illegible]n a business's quality procedures day in and day out), foundation [illegible]ovation that gives them a competitive advantage over any riva quality, but increases motivation, too, as employees feel more valued and are, th extra mile for their employers.

Total Quality Management (TQM)

TQM is another method that aims to empower employees: unlike kaizen, which involves the entire business; it is the culture of the organisation. Employees act l analysing the work they receive from other departments in order to, as a unit, cr the best quality product/service possible.

The Benefits of Improving Quality

Keeping goods/services to a high standard of *quality* (i.e. how well the product d gives a business competitive advantage over its rivals [illegible]gher quality your g appears to consumers. This high-quality image can also give the perception that are of a similar value, leading to rep[illegible]ur[illegible]ases and word-of-mouth sales. In m that value high-quality prod[illegible]er[illegible]es are more willing to pay high prices and of quality, high-end [illegible]ers may be more likely to purchase from you.

Employees, [illegible] whole, like to take pride in their work; a business that focuses the required standard will have difficulty in growing its brand or cultivating staff that show keen interest in producing the best quality goods and services will like increases as a result.

The Difficulties with Improving Quality

It's not all roses, however: when it comes to improving quality, there are difficul

Costs: the process of improving quality involves researching possible changes, te implementation and review (i.e. did the change improve anything?). All of this co must weigh this up against the potential earnings an increase in quality might br

Resistance: most businesses experience resistance to c[illegible]e in one form or anoth factory floor, management or the company d[illegible]ct[illegible]s[illegible]e people get into their r change this and so firms have to spe[illegible]e resources on convincing their sta

Staff: businesses emplo[illegible]n[illegible]r different staff. While the majority of a firm's permanent [illegible]ye[illegible]s also work with temporary, outsourced and flexible having flexi[illegible]f can also make it difficult, therefore, to keep to the same qua

The Consequences of Poor Quality

It is in a business's best interests to improve the quality of its production. There
to do this.

Reputation: Customers talk and bad news travels fast. If a low-quality product is
the brand's reputation will be the first thing that is tarnished. Once this happens
hard just to win back the trust of the public.

Lower Sales: As the negative publicity rolls in, the firm in question is likely to exp
revenue from its target audience.

Lower Price: If consumers see the product as being of low quality, they may
means that the company would need to lower its prices in order to attract buyer

Lower Profits: Since the company is forced to reduce its prices and consumers a
the overall profits will be lower. This can affect the future of the company as low
that can be invested as research and development in better-quality products/ser

Increased Costs: If the company is producing lower-quality goods, it is likely to re
results in rejected goods, recalled items and requests for replacement, all of whi

Company Reputation: If consumers know the name of the company that produc
are likely to distrust anything else sold by that company. No matter how many n
releases, then, it will be met with disbelief. Such a low-quality product may also
position in the market – what was once a firm that delivered high-quality goods
only with those consumers looking for a cheap deal.

3.4.4. Questions

6. Identify two differences between quality control and quality assurance.

7. A computer manufacturer is considering whether to employ the kaizen me
Explain one way in which kaizen could benefit the company.

3.4.5. Making Operational Decisions to Improve P
Inventory and Supply Chains

Key Points Covered

- Managing Supply to Match Demand
- The Value of Outsourcing
- Inventory Contro
- Managing the Su

Managing Sup[illegible] Match Demand

Variation o[illegible]nd is what keeps a business on its toes. Fashion tastes and tren demand wh[illegible] other points, businesses see little to no demand at all.

In response to this, many firms choose to *match supply to demand*, i.e. keeping p periods and ramping them up once the orders begin to flood in. Matching deman especially for companies that sell seasonal products. One way in which firms ma is with the use of forecasts. A sales forecast uses historical data to show a compa to make at any given period. The company can then plan its production levels ar portable fans rise in summer, a company might decide to increase its production for high demand.

Not everyone works in this way, however (producing in response to demand can many firms opt for *constant production*, which involves producing all year round

Let's imagine a company reaches peak demand of 100,00[illegible]lers every Septemb demand reaches around 1,000 orders per month.

First, we calculate the total numb[illegible]rs for the whole year.

$$\text{Total Or[illegible]o Whole Year} = \text{Orders in September} + \text{Orders}$$

$$\text{[illegible]ar Orders for Whole Year} = 100{,}000 + (1{,}000 \text{ x the oth}$$

$$\text{Total Orders for Whole Year} = 100{,}000 + 11{,}0$$

$$\textbf{Total Orders for Whole Year} = \mathbf{111{,}000}$$

Next, we divide the total number of orders by 12 (months of the year).

$$\text{Average production required per month} = \frac{\text{Total orders}}{12 \text{ mo}}$$

$$\text{Average production required per month} = \frac{111,}{1}$$

$$\textbf{Average production required} = \mathbf{9{,}250 \text{ units per m}}$$

Now, rather than trying to produce 100,000 units in the w[illegible] leading up to Sep set a target of 9,250 units per month. This sort of [illegible]ta[illegible] production ensures th supply stored up for when its busy season [illegible]s.

A company that manufac[illegible]s tree decorations, for instance, might us plenty of sup[illegible]t[illegible]emand come December. Constant production does however. F[illegible]olesalers, such as Booker Group plc, are limited to how much a perishable [illegible]. Businesses have to rent or buy somewhere to store their prod high costs of powering fridges and freezers on a large scale.

Outsourcing

This is another way in which companies manage to match demand. A business will
on particular business processes. Outsourcing is the preferred method of employm

- Firms do not have to pay for holidays or national insurance since this is the
outsource company
- It can be a cheap method of working if the outsource company is based in a
- The method works well for firms if they need highly skilled individuals but d
training or full-time employment

There are certain problems with this, including those of quality and communicatio
for businesses to outsource work to other people/firms and still achieve the sam
expect. Firms, therefore, must keep tight controls over any outsourced productio
problem: communication.

It can be tricky for businesses to communicate with their outsourced workers – t
outsourcing firm after all, not the business – and so any changes a business wish
processes may take a long time to filter to the outsourced workforce.

Temporary and Part-time Employees

This is a popular method with large-scale companies, especially those that exper
times every year. Employing temporary and part-time staff gives flexibility to the
costs low when there are relatively few sales to be made.

Some employees sign with firms on zero-hours contracts – this means that the fi
the worker any hours. Companies will contact their zero-hours workers only whe
need to increase. Naturally, this is not an ideal situation for the employee (there
all), but the company is able to save a great deal of money that it may otherwise
employed workforce.

Producing to Order

A process like mass customisation (read more on this in the previous pages) can
short term business's need to build customer-friendly interfaces that allow pe
scale. The potential for financial reward, however, is great, generating extremely
firm in the long run.

The main concern with producing to order is that it must be done well – if handle
working with unreliable suppliers, this method could add up to failure and heavy

Inventory Control

Stock (or inventory) involves the raw materials, supplies or goods that businesses
Businesses must keep tabs on (i.e. *manage*) what stock they have, what they hav
coming in. Without good stock management, most businesses would go out of c

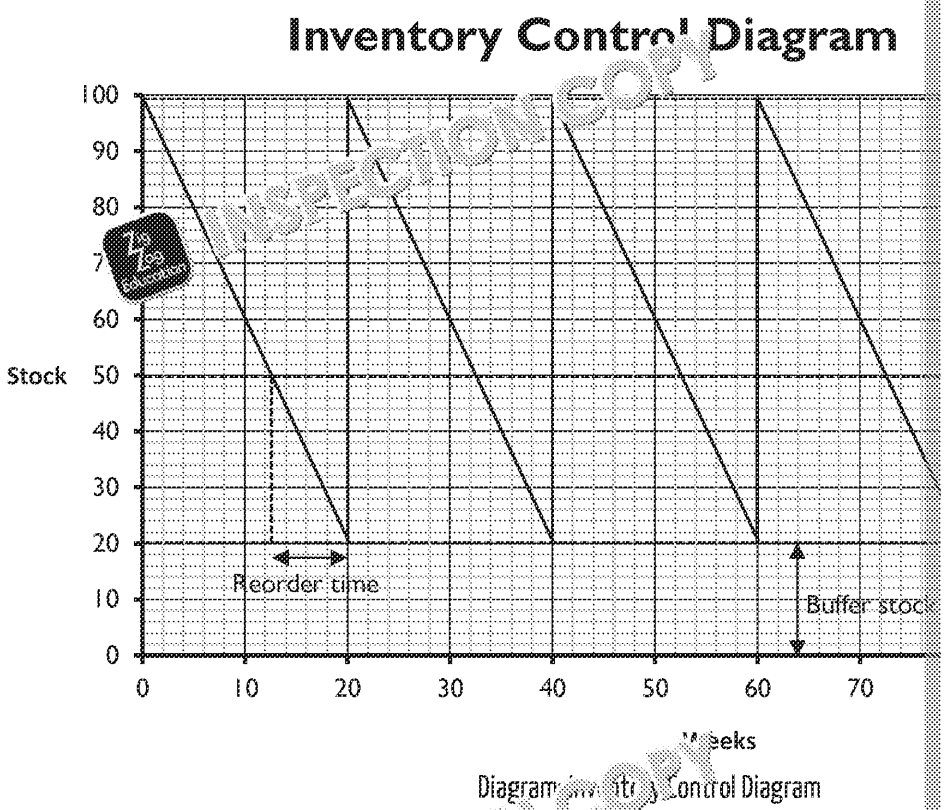


Diagram showing Inventory Control Diagram

The above is an example stock control diagram. This allows us to identify:

- the reorder level of stock
- the level of buffer stock available
- the time it takes for stock to arrive once ordered

The *buffer stock* (or *buffer level of inventory*) shows the difference between the a
company can function on (in this case, 20 units) and zero.

The *reorder level* shows us how low the stock can get before the company needs
for supplies.

The *reorder quantity* tells us how much stock a company orders once it reaches t

The *reorder time* (also known as *lead time*) tells us how long it takes for new stoc
placed an order.

In the example above, new supplies take around seven weeks to arrive once ord
units of stock (the *reorder quantity*) once there are 20 units left. The stock arrive
down to its last 20 units.

Buffer Stocks

The buffer stock of a business is the difference between the minimum amount o
hold and absolute zero. For example, if the minimum number of brushes a paintb
150 this is also the business's buffer stock.

There are positive and negative sides to holding buffer stock, which differ from c

✔ *Advantages of holding buffer stock*

1. **Production flow:** large manufacturing firms, such as Toyota cars, need to keep a steady flow of production. If stock falls below a certain point (or even down to zero), the process will form a bottleneck, which will slow production to a halt. Keeping a steady flow of stock, therefore, helps production flow, too.
2. **Ability to satisfy demand:** having buffer stock readily available ensures businesses are always able to fulfil normal demand. Supermarkets, for instance, keep a steady flow of stock (e.g. pints of milk or bags of potatoes) because they know there will be demand.
3. **Coping with peaks in demand:** this is important for most businesses, especially those whose demands are influenced by cultural trends. Take a shoe shop, for instance: if the owners learn that their shoes have received a surge in popularity (perhaps a famous singer was seen wearing them), they will need to react by buying in more stock so that they can satisfy the sudden rise in demand.
4. **Economies of scale:** buying in bulk helps businesses bring down their cos
more power to negotiate with suppliers. An electronics company, for ins
raw materials may supply if they place a significantly high order with t

✘ *Disadvantages of holding buffer stock*

1. **Opportunity costs:** one main problem for any business is the fact that th
could have been better used as reinvestment in the company. It is a risk
2. **Costs of storage:** this can involve stocking warehouses full of finished proc
firms), filling shelves and freezers (as with supermarkets) or even keeping
shops or convenience stores). Stock might need to be chilled, heated or fr
form of management, such as a computerised database. All of these aspec
3. **Depreciation/obsolescence:** let's use the shoe shop example again. If a t
popular, management may respond by purchasing the item in bulk. How
enough of these shoes while they are at their peak in popularity, the sho
that are worth nothing compared to what management originally paid fo
supermarkets for whom the majority of goods have sell-by dates, and so
right time.
4. **Security:** stock needs to be taken care of; this is not just to keep it refrige
is not damaged or stolen. Therefore, companies go to great lengths to m
security systems such as CCTV.
5. **Insurance:** in case any stock is stolen or damaged, businesses need some
in insurance for this, which can be very expensive, especially if the goods
6. **Administration:** buffer stock is handy for fulfilling demand, but the busin
stock, order it, transport it and check it is up to the correct standard. Thi

Implications of Poor Stock Control

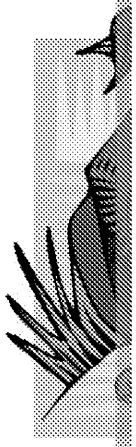
Firms that have too much stock (i.e. much more than demand) are running ineffi represents money that could be better used as investment in the business. Likew poses a significant risk: if businesses have insufficient stock levels, they will make that they are unable to satisfy.

These are known as *stock-in* and *stock-out* costs, i.e. the cost of holding too mu enough (stock-out).

Let's use some examples:

A large electronics retailer is keen to be at the forefront of consumer technologies fo a new comp[illegible]r [illegible]player, they go there first. The retailer has ignored the la believing th[illegible] a fad that will die very soon. However, the trend has not died and the business has now lost sales to its competitors who purchased lots of new stock-out costs in this instance, having insufficient stock to meet demand.

If the business had been correct, then their competitors would have been left with a lot of stock that they could not shift. This would have meant significant stock-in costs for the business's rivals.



Christmas time is normally a good period for butcher shops, with turkeys their biggest seller of the season. It wasn't always a good time for one small shop, though, who would purchase enough birds to satisfy demand but never sell them all. One year, in fact, they bought 100 birds and only sold 25. The other 75 birds could barely be sold, especially after the Christmas period, and the business suffered significant stock-in costs. Th[illegible]s since learned from their mistakes and now take orders for turkeys at Christmas. Customers must pay for each turkey in advance and collect one week before Christmas. This ensures that the business purchases [illegible]ou[illegible] birds to satisfy demand – no more, no less – which ma[illegible] Christmas period a happy one for the shop owner, too.

Influences on a Business's Choice of Supplier

When it comes to the supply chain, a good business will run a tight ship. This inv that offers the service most suited to the firm's needs.

Cost

Most businesses want to make as many sales as they can. This often involves off that customers see no reason to look anywhere else. These low prices need to co and so businesses scour their options for the lowest-costing suppliers. Larger firm influence suppliers, i.e. ordering supplies in bulk so that they pay less for them o

Quality

With the eternal search for low costs, however, there is a trade-off: quality. Plen willing to offer low-cost material[illegible] but in order to slash costs they sacrifice qualit supplies (not just low in cost but low in value) will pay the long-term price of pro faulty goo[illegible] no one wants to buy.

Reliability

Businesses need suppliers that are going to offer the right product at the right pr supplies to be available whenever necessary. A clothing retailer that sells 300,00 instance, needs a supplier that can match this demand. If the supplier is unreliab insufficient stock available for consumers to buy, creating a negative image for it

Frequency

Some businesses, such as greengrocers, need supplies to be delivered every day. If greengrocer and find the shop is out of mushrooms, they will likely take their busi mushrooms were not on their shopping list to begin with!). The same goes for bus production lines: part of choosing the right supplier depends on who can provide t

Flexibility

Tastes and fashions change. Businesses need to react quickly to these, and suppl provide goods at a moment's notice. Many businesses need suppliers that offer t i.e. the period between order and delivery.

Managing the Supply Chain Effectively

Some busin choose the cut-throat method, i.e. stamping down supplier cos while others cultivate strong relationships with their suppliers. Both methods wo success of a business relationship depends on many of the same factors as any o someone, he/she is more likely to help you.

Working Together on Product Development

If a business develops a new product without involving its supplier, it runs a grea supplies, for instance, to cover the manufacture of a new product. Alternatively, materials but only for the first few months of production. After this time, the bus away customers due to lack of supplies. This could potentially create a reputatio strong business-to-supplier relationship, therefore, is essential.

Costs

A good relationship can have financial benefits for firms. If a company regularly m pays on time, suppliers will stay happy. Not only will they be able to secure fu be more willing to discuss discounts and bulk-buy prices if they know the busines

Flexibility

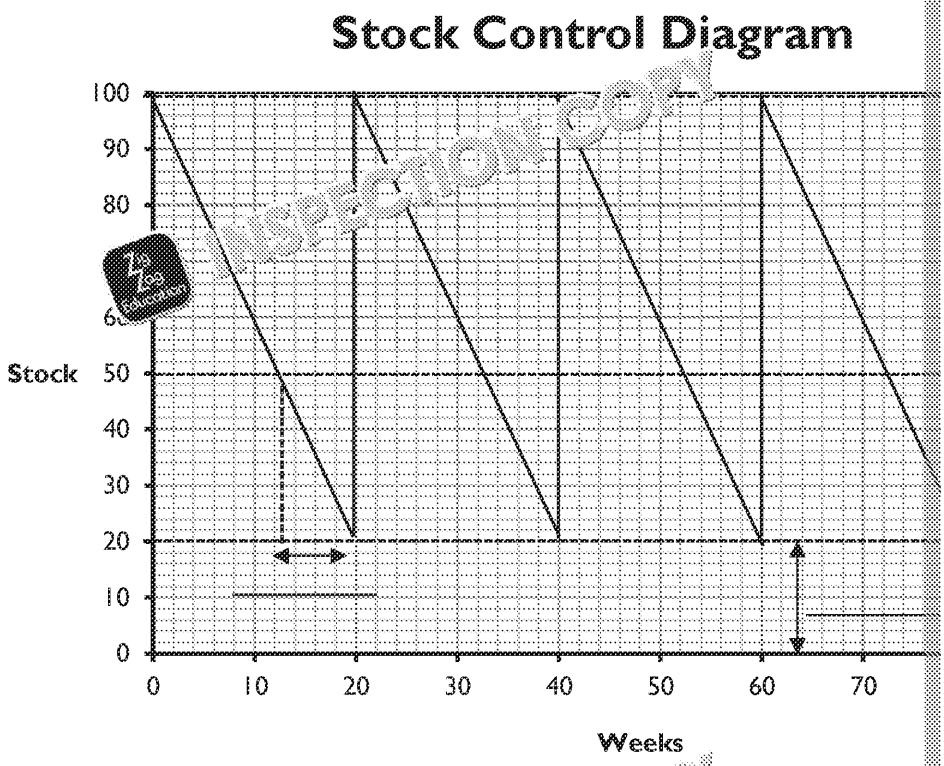
Suppliers often become flexible once a business proves its trustworthiness. This generous p od. Suppliers are also more likely to agree to ad-hoc working, moment's n if they have a good rapport with the firm.

Sharing Information

The use of IT systems has become the norm in business, especially for large firms production lines and sales databases to suppliers and then, every time a product advises the suppliers to provide more materials.

3.4.5. Questions

8. Copy out the following stock control diagram and fill in the five missing lab



9. Identify and explain two reasons why com es hold buffer stocks.

3.4. Keywords

Buffer Level of Inventory:	The difference between the absolute mi company can function and zero
Efficiency:	How much a busines can achieve throug average costs
Kaizen:	F be organised into groups (qu sponsibility for continuously analysing, the business
Lead Time:	The amount of time it takes for stock to a an order
Over-utilisation of capacity:	When a business produces more goods/s handle. This can cause stress on overwor potential for downtime and maintenance
Productivity:	A company's hourly rate of output per e
Reorder Level:	How low a company's stock can get befo
Reorder Quantity:	The amount of stock a business requests
TQM:	A constant, company-wide culture of qua
Under-utilisation of capacity:	When a business produces fewer goods/ This can lead to staff being underworked and waste company money on employee

3.4. Answers

1. *Explain why a business might focus on quality as its main operational objective.*

   Students should show understanding of how quality helps the business overall, i.e. of the business, reducing unit costs and improving brand image.

2. *Copy out the following statements into the correct categories*

Statements
• *Quality might be ignored and ... ease to the point of products becom* • *The fewer goods a ... s, the higher the fixed costs per unit* • *Main... ...ment becomes impossible as there is simply not enough* • *W... ...es lack in motivation as there is little drive to overachieve* • *Mo... ...ion of employees decreases because the amount of work is too intens* • *Firms are unable to meet sudden spikes in demand*

Drawbacks of under-utilisation	*Drawback*
• *The fewer goods a firm produces, the higher the fixed costs per unit* • *Workforces lack in motivation as there is little drive to overachieve*	• *Quality might be ign... point of products be...* • *Maintenance of equi... there is simply not e...* • *Motivation of emplo... amount of work is to...* • *Firms are unable to ...*

3. *A cutlery manufacturer produces between 250,000 and 300,000 sets of cutlery eve... goods, the firm uses three expensive pieces of machinery (which it owns) and emp... years, however, the demand for cutlery has fallen and so the firm has had to cut b... produces.*

   a. *Identify whether the manufacturer is experiencing under- or over-utilisation*

      Students should show that the manufacturer is experiencing under-utilisatio...

   b. *Explain one way in which the firm could improve its utilisation of capacity.*

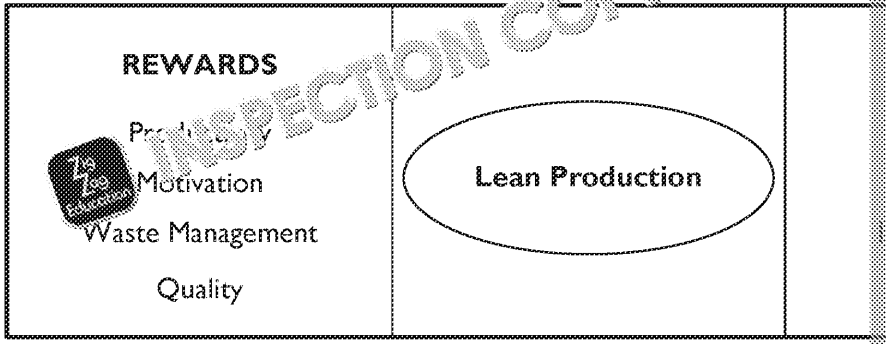
      Ways in... under-utilisation of capacity might include:

      1. *... forecasts could help the firm predict any further drops in sales*
      2. *... create more demand through advertising, branding and promotion*
      3. *Market research to find out where the firm might be going wrong*
      4. *Sell off one of the pieces of equipment to free up some cash for investme... the firm*
      5. *The firm may have to make redundancies if there simply isn't enough w...*

4. *Identify and explain two ways in which a firm can increase its efficiency.*

   Answers may include, but not limited to: productivity (i.e. encourage increase in w... and reward schemes), inputs vs outputs (i.e. fewer inputs for same amount of outp... more output), innovation (i.e. creating better quality products and/or more efficie... lean production (i.e. creating less waste through goods production).

5. *Students could fill out the graphic in the following mann...*



6. *Identify two differences between quality control and quality assurance.*

Quality assurance is a proactive measure that involves managerial decisions. Busi processes that best ensure their goods are produced to the highest quality.

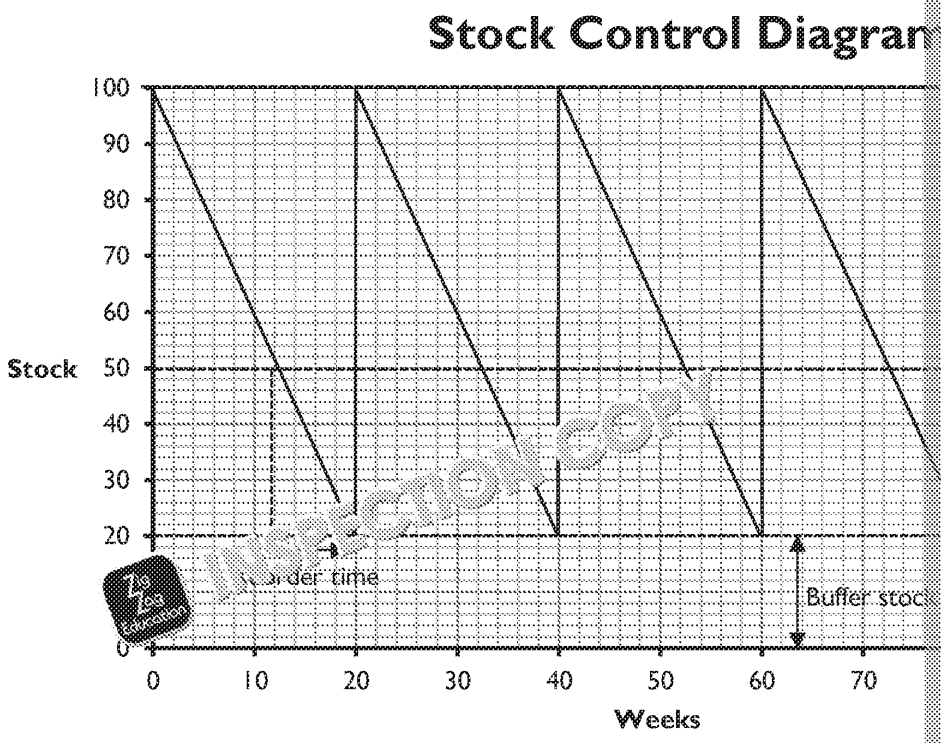
Quality control, on the other hand, is a reactive measure. It involves the correction before they are made available on the market.

7. *A computer manufacturer is considering whether to employ the kaizen method in which kaizen could benefit the company.*

Students could explain any of the following:

1. *Increase in employee respo[illegible] lead to motivation*
2. *Employees are th[illegible] know their processes best and so the busines efficiency a[illegible] ductivity*
3. *[illegible]lso relates to reduction of wasteful processes, higher quality of wor ss's final products.*

8. *Copy out the following stock control diagram and fill in the five missing labels.*



9. *Identify and explain two reasons why companies hold buffer stocks.*

Students might include any of the following:

1. *Buffer stocks keep a company's production flowing, lessening the chance of b*
2. *A steady flow of stock also means firms can always fulfil their demand*
3. *Keeping more stock than enough allows a firm to react to spikes in demand*
4. *Bulk-buying of stock can lead to economies of scale through a reduction in pr*