1.1 Introduction to business management

"It does not take much strength to do things, but it requires a great deal of strength to decide what to do."
Elbert Green Hubbard (1856 – 1915), American author and philosopher

SL/HL content	Assessment objective
The role of businesses in combining human, physical and financial resources to create goods and services	AO2
The main business functions and their roles: • human resources • finance and accounts • marketing • operations	AO2
Primary, secondary, tertiary and quaternary sectors	AO2
The nature of business activity in each sector and the impact of sectoral change on business activity	AO2
The role of entrepreneurship (and entrepreneur) and intrapreneurship (and intrapreneur) in overall business activity	AO3
Reasons for starting up a business or an enterprise	AO2
Common steps in the process of starting up a business or an enterprise	AO2
Problems that a new business or enterprise may face	AO2
The elements of a business plan	AO2

The role of businesses

The role of businesses in combining human, physical and financial resources to create goods and services. AO2

A **business** is a decision-making organization involved in the process of using inputs to produce goods and/or to provide services (see Figure 1.1.a). *Inputs* are the resources that a business uses in the production process, e.g. labour and raw materials. This process generates *outputs* (also known as products). The term **product** can refer to both goods and services. **Goods** are physical products, e.g. cars, computers, books and food. **Services** are intangible products, e.g. haircuts, bus rides, education and health care. Businesses can also provide goods and services to other organizations, such as freight transportation and distribution.

Management guru Peter Drucker famously said that the only purpose of a business is to create customers, i.e. the role of businesses is to combine human, physical and financial resources to create goods and services in order to satisfy the needs and wants of people, organizations and governments.

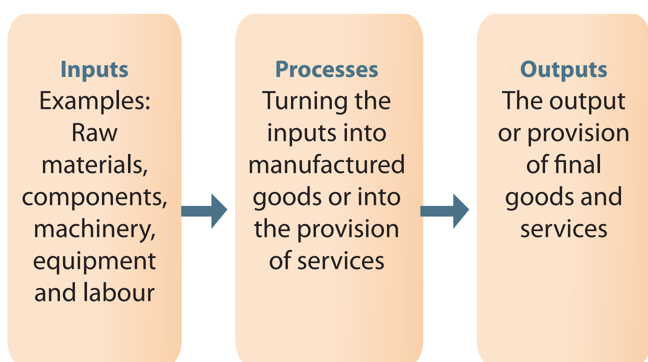

Figure 1.1.a The production process

Needs are the basic necessities that a person must have to survive, e.g. food, water, warmth, shelter and clothing. **Wants** are people's desires, i.e. the things they would like to have, e.g. a cake, a larger home, a new smartphone or to go on an overseas holiday.

Figure 1.1.b Cakes are a desire, not a need

Common mistake

The terms **customer** and **consumer** and are often used interchangeably by candidates, although they have different meanings. Make sure you can distinguish between the two concepts and use them in the right context – *customers* are the people or organizations that buy a product whereas *consumers* are the ones who actually use the product. These may be the same entity (e.g. someone who buys and eats a meal), but not necessarily such as parents (customers) paying for their children's (consumers) birthday presents.

Box 1.1.a Types of products

- **Consumer goods** are products sold to the general public, rather than to other businesses. They can be further split into *consumer durables* (products that last a long time and can be used repeatedly, e.g. electronic gadgets, cars, jewellery, clothes and home furniture), or *non-durables* (those that need to be consumed shortly after their purchase as they do not last or cannot be reused, e.g. fresh food, beverages, medicines and newspapers.
- **Capital goods** (or **producer goods**) are physical products bought by businesses to produce other goods and/or services. Examples include buildings (premises), computers, machinery, tools and specialist equipment.
- **Services** are intangible products provided by businesses. The service is not tangible, but the results are, e.g. health care, transportation, dining, sports (recreation) centres, legal advice, financial advice and education.

The main functions of business

The main business functions and their roles: human resources, finance and accounts, marketing and operations. AO2

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For a business to operate effectively, tasks must be carried out by functional areas (or departments). These interdependent functional areas are: human resources, finance and accounts, marketing and operations management. The main business functional areas must work together in order to achieve the organization's goals.

Human resources – The human resources (HR) department is responsible for managing the personnel of the organization. In managing people, the HR department is likely to deal with the following issues: workforce planning, recruitment, training, appraisal, dismissals and redundancies, and outsourcing human resource strategies (see Unit 2.1).

Finance and accounts – The finance and accounts department is in charge of managing the organization's money. The finance and accounts director must ensure that accurate recording and reporting of financial documentation takes place. This is to comply with legal requirements (e.g. to prevent deliberate understating of profits to avoid corporate taxes) and to inform those interested in the financial position of the business (such as shareholders and potential investors). Finance and accounts topics are covered in Units 3.1–3.9.

Marketing – The marketing department is responsible for identifying and satisfying the needs and wants of customers. It is ultimately in charge of ensuring that the firm's products sell. This is done through a series of activities such as market research, test marketing, advertising and branding. Functions of the marketing department can be summed up as the traditional four Ps of marketing (see Unit 4.5):

- **Product** – ensuring that goods and services meet the customer's requirements, such as a product's various sizes, colours, packaging and core functions. Other roles related to the product include product differentiation and product position mapping (see Unit 4.2).

- **Price** – using various pricing strategies to sell the products of a business. Numerous pricing strategies (see Unit 4.5) can be used, depending on factors such as the level of demand, the costs of producing the good or service, and the number of substitute products available.

- **Promotion** – making sure that customers know about the firm's products. This is often done through the mass media, e.g. television and newspaper advertising. Alternatively, cheaper methods include the use of sales promotions, social networking and guerrilla marketing (see Unit 4.5).
- **Place** – ensuring that goods and services are available in convenient places for consumers to buy. Marketing managers must ensure that they select appropriate ways to distribute products to the marketplace, e.g. online purchases, retail outlets, vending machines.

Operations – Also known as **operations management** or **production**, this functional area of an organization is responsible for the process of converting raw materials and components into finished goods, ready for sale and delivery to customers. Examples of production include the extraction of crude oil, car manufacturing and the construction of roads. Operations also applies to the process of providing services to customers as in the case of hotels, restaurants, beauty salons and financial institutions. Operations topics are covered in Units 5.1–5.7.

A large organization is able to allocate resources to each of the four functional areas, making their roles easily identifiable. In a small business owned by just one person, each function would need to be carried out by the same person. In practice, the four functional areas of a business are highly interrelated, e.g. the production department relies on the talents of effective marketing staff to sell their products. Equally, marketers can only do their jobs if they have a decent product to sell and the necessary financial resources to do so.

Business organization and environment

Question 1.1.1 The business of education

Education is big business. Schools can earn **revenue** from numerous sources, such as tuition fees (for fee-paying schools), grants from the government and fund-raising events. They might also lease out their facilities (such as classrooms, sports hall, drama studios and swimming pool) during weekends and school holidays. Schools use the revenues to finance their **costs of production**, such as staff salaries and the maintenance of the buildings. Parents might also have to pay for items such as school uniform, textbooks, stationery, sports equipment and food.

(a) Distinguish between **revenue** and **costs of production**. *[4 marks]*

(b) Examine how business functions operate in an organization such as a school. *[6 marks]*

CORE

Business sectors

Primary, secondary, tertiary and quaternary sectors. AO2
The nature of business activity in each sector and the impact of sectoral change on business activity. AO2

Businesses can be classified according to the stage of production that they are engaged in.

Primary sector

Businesses operating in the primary sector are involved with the extraction, harvesting and conversion of natural resources, e.g. agriculture, fishing, mining, forestry and oil extraction. Primary sector activities tend to account for a large percentage of output and employment in *less economically developed countries* (LEDCs). Businesses operating in the primary sector in *more economically developed countries* (MEDCs) use mechanisation and automation, such as combine harvesters and automatic watering systems.

Figure 1.1.c Agriculture is part of the primary sector

1.7 Organizational planning tools

"Those who say it cannot be done, should not interrupt those doing it." - Chinese proverb

HL content only	Assessment objective
The following planning tools in a given situation: • fishbone diagram • decision tree • force field analysis • Gantt chart	AO2, AO4
The value to an organization of these planning tools	AO3

Fishbone diagram

Fishbone diagram as a planning tool in a given situation. AO2, AO4

The value of the fishbone diagram as a planning tool to an organization. AO3

All businesses, irrespective of their legal status or size, have to plan how they are to achieve their organizational objectives. **Organizational planning tools** are the various methods that businesses use to aid their decision-making, e.g. fishbone diagrams, decision trees, force field analysis, and Gantt charts. These tools enable businesses to deal with their problems, issues or concerns in a systematic way.

The **fishbone diagram** is a graphical representation of the most likely causes and effects of an important decision. It was devised in the 1960s by Japanese quality guru Professor Kaoru Ishikawa (1915–1989). Ishikawa is also credited for coining the term 'quality circles' (see Unit 5.3).

As a qualitative organizational planning tool, the fishbone diagram is used to identify the root causes of a problem or issue. The fishbone diagram is also known as the **cause and effect diagram**. The problem or issue being investigated is shown on the right hand side of the diagram (see Figure 1.7.a).

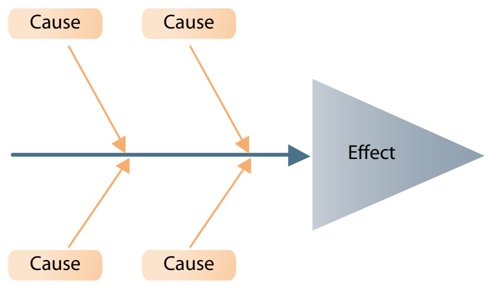


Figure 1.7.a Example 1 of a Fishbone diagram

The 4Ms (management, manpower, machines and materials) is one method that can be used to identify different categories of causes of a problem or issue, such as demotivated or unproductive employees.

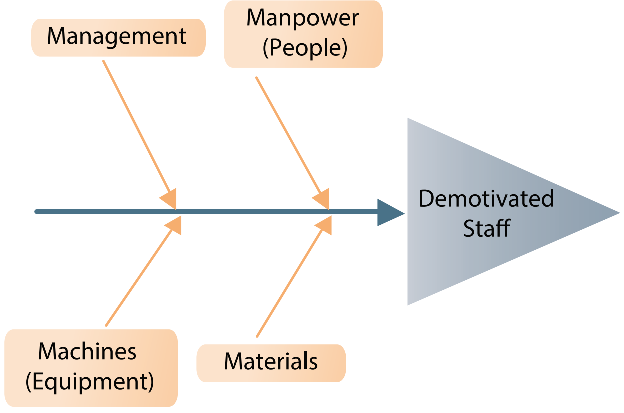


Figure 1.7.b Example 2 of a Fishbone

The following causes can be found from using the fishbone diagram:

- Management, e.g. unsuitable management style and miscommunication with the workforce
- Manpower, e.g. unskilled workers, a lack of training and insufficient personnel
- Machinery, e.g. technological failures, faulty equipment and the use of outdated machinery
- Materials, e.g. sub-standard (poor quality) materials and delayed deliveries.

Note that there is flexibility in the use of the nodes or 'bones' (not just the 4Ms). For example, *paraphernalia*, *policies*, *procedures*, and *people* (the 4Ps) are the bones often used for administrative and service-related problems (see Figure 1.7.c). Essentially, the categories used must meet the needs of the organization.

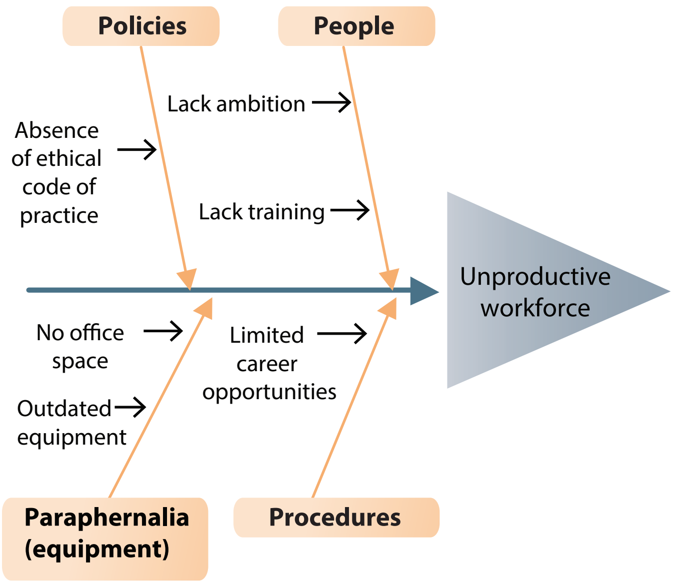


Figure 1.7.c Example 3 of a Fishbone diagram

When the fishbone diagram is completed, discussion takes place to decide on the most likely root causes of the problem. The ultimate purpose the fishbone diagram is to find the key source(s) of the problem so that they can be targeted for improvement. In Figures 1.7.b and 1.7.c, managers can identify the various aspects of the problem which must undoubtedly be addressed, such as providing adequate training and updating office equipment.

To successfully construct a fishbone diagram, the following steps must be observed:

1. The problem or issue must be clearly stated and agreed upon before further discussions begin.
2. Contributors must be concise and to the point. Causes rather than symptoms must be stated.
3. For each 'bone', brainstorm the possible causes and place these onto the node.
4. Consider combining nodes that are rather empty or scrapping them altogether.
5. Consider separating overcrowded nodes.
6. Consider which root causes warrant further investigation by circling these on the diagram.
7. Discuss how each circled item affects the problem or issue being investigated.

Once the root causes have been established, the fishbone is complete and decision makers move onto devising appropriate strategies to deal with the sources of the problem.

A key strength of the Ishikawa model is that it is easy to use and understand. It allows decision makers to brainstorm ideas in a systematic, holistic and logical way. It facilitates a visual diagnosis of a problem or issue. Today, computer programmes based on Ishikawa's ideas, such as SmartDraw, can be used to aid decision-making.

However, the fishbone diagram model tends to be rather simplistic for some real-world problems. In practice, the fishbone diagram is often used in conjunction with other decision-making frameworks to establish and quantify the root cause(s) of a problem.

Common mistake

Many students claim that certain decisions should not be pursued due to the risks involved, yet there is an element of risk associated with almost every business decision. It is the role of skilled managers to ensure that decision-making carries as much quantifiable, rather than unquantifiable, risk as possible.

Decision trees

Decision trees as a planning tool in a given situation. AO2, AO4
The value of decision trees as a planning tool to an organization. AO3

A **decision tree** is a quantitative decision-making tool. It is a diagrammatic representation of the different options that are available to a business in the decision-making process, showing their probable outcomes. The tool allows managers to calculate the expected value of each decision in order to plan the best option to follow.

For example, consider the following options available to Chris McCorkell who is deciding whether or not to sell his apartment in New York. If he sells it this year, he could get $600,000. However, waiting until next year when the housing market is expected to improve increases his chances of selling the apartment at a higher price. Suppose the following factors need to be considered:

- Chris McCorkell could sell the property at the current market price of $600,000. This option would incur costs of $10,000 for estate agency and solicitors' fees, i.e. this option yields a return of $590,000.

- He could postpone the sale until next year with a 65% chance of receiving a higher price for the apartment. The estimated value of Chris McCorkell's property is $650,000 if he sells it next year. Costs would rise to $12,000, i.e. the net return would be valued at $638,000.

- However, reports suggest there is a 25% chance of house prices remaining stable and a 10% chance of the prices declining within the year. If property prices drop, Chris McCorkell's apartment is estimated to be worth $530,000 after associated costs.

Chris McCorkell can now use this information to calculate the expected value of each decision. This is done by multiplying the values of each outcome by its probability and then adding up the results. A decision tree is the diagrammatic version of this process (see Figure 1.7.d). The rules used to construct and interpret decision trees are:

- The diagram is constructed from left to right.

- **Decision nodes** are shown as squares. These are used when there is a decision to be made, e.g. whether to launch a new product, to invest in new machinery or to move into overseas markets. In the above example, Chris McCorkell has two options, one of which has a definite outcome (selling today). The decision maker has at least some control over decision nodes.

- **Chance nodes** are shown as circles. These are used to show the different possible outcomes of a decision. Typical outcomes include criteria such as 'failure or success' and 'improvements or deteriorations'. If Chris McCorkell, opts to sell his apartment next year (i.e. chance node B), there are three possible outcomes, none of which will definitely happen. Businesses and decision makers do not have direct control over chance nodes.

- For each chance node, there will be two or more routes (outcomes). These show the **probability** of the different outcomes for each chance node. The probabilities for each chance node must add up to 1.

- The actual values of each outcome are stated at the end of each **branch**. The costs of each option must be deducted when calculating the net figure for each outcome.

- Each unwanted branch of the decision tree is cut-off (rejected), indicated by two parallel lines. This will leave just one best option to follow.

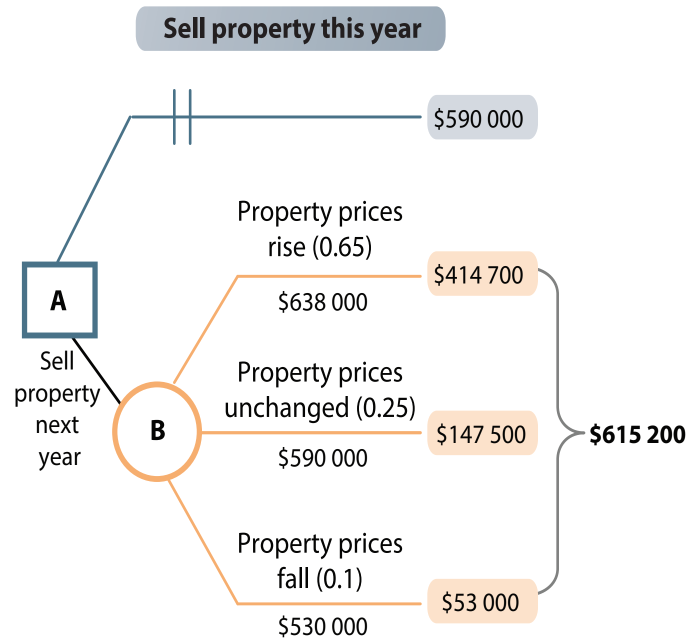


Figure 1.7.d Decision tree for Chris McCorkell

The expected values in Figure 1.7.d (those appearing at the end of each branch) are calculated as follows:

- The decision to sell the property today would generate a known value of $590,000, i.e. $600,000 minus the transactions costs of $10,000.

- For chance node B, the decision to postpone the sale has a 65% chance of earning $638,000 (after associated costs) so the expected value is $414,700 (i.e. $638,000 × 0.65).

- There is a 25% chance that property prices will remain unchanged in the next year. Hence the expected net outcome here is $147,500 (i.e. $590,000 × 0.25).

- Finally, there is a 10% chance that property prices will fall within the year. Therefore, the expected value in this case is \$53,000 (i.e. \$530,000 × 0.1).

- Therefore, the total expected value of chance node B is \$615,200.

The above analysis suggests that Chris McCorkell should delay the sale of his property because the total expected value will be higher (\$615,200 compared to \$590,000, i.e. a net gain of \$25,200). The expected value refers to the average outcome if the decision was made many times over and is calculated by multiplying the net value of a decision by its probability.

Figure 1.7.e Decision trees can help with investment decisions

Table 1.7.a Advantages and disadvantages of decision trees

Advantages	Disadvantages
They allow managers to set out problems in a clear and logical manner.	The probabilities given in a decision tree are only estimates and subject to forecasting errors.
All potential options can be seen at the same time, thereby speeding up decision-making.	They are based on quantitative data only, so qualitative issues (such as the effects on staff morale or the compatibility of a decision with the firm's aims) are ignored.
They consider the risks involved in decision-making, such as possible negative outcomes.	The technique does not necessarily reduce the amount of risk involved in decision-making.
They enable more scientific and objective decisions to be made as all likely costs of decisions are considered.	Delays in the planning process can void the data by the time a decision is actually made, yet time lags are often inevitable in the real business world.
As a visual stimulus, they provide a tangible insight to a problem, rather than having to rely on people's views or emotions of the problem.	The task of assigning probabilities is rather subjective so results can be deliberately biased to justify the preference of the management.

Question 1.7.1 Drisner Traders Ltd.

Drisner Traders Ltd. is considering a move into overseas markets. The Australian company is deciding between two locations: Kazakhstan or South Korea. Market research results are shown in the table below. All financial figures are expressed in \$ for ease of comparison.

Kazakhstan	**Probability**	**Costs/Revenues (\$)**
Cost		250 000
High return	0.6	400 000
Low return	0.4	250 000

South Korea	**Probability**	**Costs/Revenues (\$)**
Cost		175 000
High return	0.75	300 000
Low return	0.25	180 000

(a) Construct a decision tree to show which of the two locations is best, based on financial grounds. *[5 marks]*

(b) Discuss the value of decision trees as an organizational planning tool for *Drisner Traders Ltd.* *[10 marks]*

Figure 2.4.f The more hours worked, the more wages a worker receives

Piece rate is a payment system that can get around the problem of wages by rewarding more productive workers. Piece rate, advocated by FW Taylor, pays workers for each item that they produce or sell per time period, e.g. if a machinist in a clothing factory gets paid $1.20 per garment and manages to produce 200 items of clothing in a week, then the gross earnings would be $240. This ensures that workers are paid for the amount of work they actually do, e.g. the more rides taxi drivers complete, the higher their incomes become.

The key advantage is that employees have an incentive to work hard to maximise their incomes. However, there might be a trade-off between the quantity and quality of output so there tends to be a need for supervision and quality control. Staff might also be demoralised due to the uncertain level of income, often caused by factors beyond their own control (such as mechanical failure), which would reduce their productivity and hence their pay.

Common mistake

Students often use the terms 'salary' and 'wage' interchangeably. However, salaries are a fixed cost whereas wages are a variable cost. Instead, it might be better for you to use the terms 'remuneration' and 'earnings'.

IB Learner Profile – Be an inquirer

Go to the KPMG website (www.kpmg.com) or a similar website to investigate which countries charge the highest rates of income tax and which countries charge a *zero* rate of income tax.

Question 2.4.4 Calculating financial rewards

(a) Outline the meaning of a time-rate financial reward system. *[2 marks]*

(b) Pravin earns $5 per hour as a part-time worker at a fast-food restaurant. His contracted hours are 12.5 hours per week. Calculate his weekly gross pay. *[2 marks]*

(c) Marj earns $2,400 per month. Income tax rate is 15% and his personal tax allowance is $15,000 per year. Use these figures to calculate Marj's:

(i) annual gross income *[2 marks]*

(ii) annual taxable income *[2 marks]*

(iii) annual take-home pay. *[2 marks]*

(d) Buki is a salaried teacher at a school, earning $3,400 per calendar month. Calculate how much she earns per week. *[2 marks]*

(e) As a salesperson, Phil earns a basic salary of $1,250 per month. Last month, he sold goods to the value of $12,000 for which he earns 5% commission. Calculate Phil's gross pay for the month. *[3 marks]*

Exam tip !

The earnings of most employees are subject to personal income tax and other deductions. The total amount earned during a period of time is called the gross earnings. The government allows people to earn a certain amount of money (known as the tax allowance) before they pay income tax. The amount received after all deductions are paid is known as net earnings, i.e. the take-home pay.

Commission

Commission pays workers based on a proportion (percentage) of sales or output contributed by a worker. This contrasts with *piece rate* which is a fixed amount per unit made or sold. For example, real estate agents might get paid 1% (the commission) of the value of each property personally sold. So, an agent that sells a $500,000 property would earn $5,000 in commission. This payment system is commonly found in jobs where financial rewards act as an incentive to sell more, e.g. insurance brokers receive a percentage of the premiums paid on policies that they have arranged.

It is common for those on piece rate or commission to receive a basic salary. To some extent, this helps to meet their physiological needs so even if the person does not manage to sell anything, then they will still be paid a basic amount. However, for each item sold, salespeople will earn commission thereby boosting their overall earnings.

Output-based reward systems such as commission can overcome the problems of time-based systems such as wages. However, they suffer from their own limitations:

- Speedy production or aggressive selling techniques do not necessarily correlate with high quality output or good customer care.
- There is added pressure on workers to sell more or to perform at a faster pace.
- Tasks can be quite repetitive and monotonous, thereby causing boredom.
- As commission depends on fluctuating sales or output levels, it is difficult to meet security needs because workers do not know how much they will be paid.
- There could be a need to hire more quality controllers, especially in manufacturing jobs.

Profit-related pay

As a form of financial motivation, profit-related pay involves linking pay to the level of profits in the firm, i.e. the greater the profits, the higher the pay. Profit-related pay is usually paid as an annual bonus.

In 2018, Southwest Airlines paid its workers an extra 11.3% (the equivalent of 5 weeks' extra pay) as part of its $543 million profit-sharing scheme with its employee. Some some airline companies pay a thirteenth month bonus, paid along with the employee's December salary. The amount paid will usually be linked to the employee's salary and length of service, so those on higher salaries and who have been with the firm the longest are rewarded the most. This is seen to be a fairer way to share any profits with the workers.

Profit-related pay is used to strengthen employee loyalty and to foster team spirit (since profits can only be achieved by combined team efforts rather than by an individual's input). Hence, profit sharing should boost labour efficiency and limit the possibility of labour conflict. Another advantage is that it can help to break down a 'them and us' culture (see Unit 2.5) since managers and employees work together to achieve higher levels of profit.

However, the proportion of profits paid to employees is often seen as too small to provide an incentive to work any harder. Walmart, the world's largest retailer, announced in 2007 that it was to bring back annual bonuses paying an average of $651 to its 1.3 million hourly-paid workers (but the Walmart payout equated to under $1.80 per day for each worker!) Also, individual efforts are not explicitly recognised by this payment system, so there is no reason for any individual to improve their performance. In reality, profit sharing is often used to reward senior managers rather than for the whole workforce, especially as individuals lower down in the hierarchy have no direct influence in changing the firm's overall level of profits.

Performance-related pay (PRP)

Performance-related pay (PRP) is more flexible than profit-related pay as a reward system. PRP rewards employees (as individuals, teams or as a whole workforce) who meet certain goals. These goals may be related to sales targets, competence in a job or successful completion of a contract. PRP can be paid in various ways:

- Pay rise – an increase in a person's pay due to meeting or exceeding his/her performance targets.
- Performance bonus – paid to workers who have reached output or quality targets, e.g. sales staff might receive a cash bonus for reaching their sales targets.
- Gratuity – paid to staff who complete their employment contracts, e.g. international schools typically pay teachers hired from overseas a gratuity (an end-of-contract bonus based on a predetermined percentage of the employee's annual salary).

A key advantage of PRP is that it creates incentives for people to work and perform better, especially if targets are clearly set. PRP is also seen as a fair system since hard work is rewarded (see Adams's equity theory above). Furthermore, PRP helps to develop a performance culture where people strive to achieve their targets in return for the benefits of PRP, such as opportunities for promotion or a financial bonus.

However, PRP does suffer from several disadvantages:

- Targets might be unrealistic or unachievable so this can cause resentment and hinder job performance.
- The pressure imposed on workers to meet their targets can cause stress (especially if their pay is linked to achieving set targets).
- PRP is not appropriate for some professions where quality is more important than quantity, e.g. public sector doctors and teachers because it is difficult to quantify their level of 'performance'.
- It might not encourage teamwork since individual targets are set in performance appraisal meetings (even though team targets can be set). This can lead to workers feeling rather alienated and demoralised, especially if they feel their colleagues are being better rewarded.
- Non-financial motivators are ignored.

Employee share ownership schemes

This payment system rewards workers, managers and directors by giving them shares in the company or by selling the shares at a discounted price. It is often used as an alternative to awarding a cash bonus or profit sharing. The motive for using share ownership schemes is that employees (who become shareholders of the company) will have a more direct interest in the wellbeing of the organization. Subsequently, employers benefit from lower rates of absenteeism and staff turnover.

In reality, share ownership schemes tend to be used for rewarding those in the senior leadership team. The majority of employees do not qualify for share ownership, and even if they did the amount distributed is hardly sufficient to sustain their level of motivation. Hence, this reward system might prove to be impractical for many businesses.

Fringe payments (perks)

Fringe payments (or perks) are the financial benefits to employees in addition to their wage or salary. Examples include health insurance, housing allowance, contributions to the worker's retirement fund, staff discounts, subsidised meals, gym membership, paid holidays and paid sick leave. Perks vary from one firm to another and might depend on the employee's position or rank in the organization.

Figure 2.4.g Gym membership is a financial perk

A key advantage of using fringe payments is that they encourage employee loyalty. Perks can help to meet an employee's safety needs (see Maslow's hierarchy of needs theory) and make workers feel more valued as the employer provides these extra benefits to enhance their overall remuneration.

3.6 Efficiency ratio analysis

"A good decision is based on knowledge and not on numbers." - Plato (427–347 BCE), Greek philosopher

HL content	Assessment objective
The following further efficiency ratios: • inventory/stock turnover • debtor days • creditor days • gearing ratio	AO2, AO4
Possible strategies to improve these ratios	AO3

Efficiency ratios

The following further efficiency ratios: inventory/stock turnover, debtor days, creditor days and gearing ratio. AO2, AO4

Possible strategies to improve these ratios. AO3

Efficiency ratios show how well an organization's resources have been used, such as the amount of time taken by the business to sell its stock (inventory) or the average number of days taken to collect money from its debtors. Supermarkets, for example, sell their stocks faster than luxury jewellers. There are four main additional efficiency ratios for HL students to learn: stock turnover, debtor days, creditor days and the gearing ratio.

Stock turnover

The stock turnover ratio (or **inventory turnover** ratio) measures the number of times an organization sells its stocks within a time period, usually one year. The ratio therefore indicates the speed at which a business sells and replenishes all its stock. There are two alternative ways to calculate stock turnover:

$$\textbf{Stock turnover (number of times)} = \frac{\textbf{Cost of goods sold}}{\textbf{Average stock}}$$

Or

$$\textbf{Stock turnover (number of days)} = \frac{\textbf{Average stock}}{\textbf{Cost of goods sold}} \times 365$$

When looking at stock turnover, *cost of goods sold* is used (rather than sales turnover) as stocks are valued at *cost* value of the inventory (to the business) rather than *selling price*. For example, if a business has COGS equal to $100,000 and an average stock level valued at $20,000 then the stock turnover ratio is 5 times a year (or every 73 days on average). This means that the business sells all of its inventory, which is then replenished, five times a year. Using this calculation, the higher the ratio the better it is for the business because more stock is sold and therefore the more efficient it is in generating profit. A high stock turnover also means that perishable stock such as fresh milk or freshly baked cakes, do not expire or stocks do not become out-dated.

Figure 3.6.a Firms selling perishable products need to have a high stock turnover rate

There are several ways that a organization's stock level can be reduced to improve its stock turnover ratio:

- Holding lower stock levels requires inventories to be replenished more regularly (which can have both advantages and disadvantages – see Unit 5.5).

- Divestment (disposal) of stocks which are slow to sell, i.e. getting rid of obsolete stock and unpopular products in the firm's portfolio.

- Reduce the range of products being stocked by only keeping the best-selling products.

When comparing this ratio, it is important (as always) to compare like-with-like. Different businesses have different benchmark figures for stock turnover. For example, a restaurant should expect a significantly higher stock turnover ratio than a seller of luxury motor vehicles. A stock turnover rate of 5 is perhaps acceptable to suppliers of consumer durables, but unacceptable to a florist or fresh fish monger. Hence, a low stock turnover ratio is not necessarily a bad sign; all ratios must be put into context.

Debtor days

The debtor days ratio measures the number of days it takes a business, on average, to collect money from its debtors. Hence, it is sometime referred to as the debt collection period. Debtors are the customers who have purchased items on trade credit and therefore owe money to the business. It is calculated using the formula:

$$\text{Debtor days} = \frac{\text{Debtors}}{\text{Sales revenue}} \times 365$$

For example, if an organization's debt (shown on its balance sheet) totals \$1 million whilst its sales turnover is \$5 million, then the ratio is 73 days, i.e. it takes the business an average of 73 days to collect debts from its customers who have bought items on credit. Logically, the less time it takes for customers to pay their debts, the better it is for the business. There are two reasons for this: first, the business improves its cash flow if customers pay on time and second, due to the opportunity cost of holding onto money, the business could invest this money in other revenue-generating projects. However, a ratio that is too high or too low can also be problematic:

- Although businesses may allow customers to buy on credit, it is important that the credit period granted is not too long otherwise the businesses could face liquidity problems (see Unit 3.7).

- Equally, too low a ratio suggests customers may seek other suppliers if the credit period given to them is uncompetitive because clients prefer better credit terms.

It is quite common to allow customers 30–60 days trade credit. The organization's ability to collect debts within a suitable timeframe is known as credit control. A business is generally seen as having good **credit control** if it can collect debts within 30–60 days. Businesses can improve their debt collection period in several ways:

- Impose surcharges on late payers. For example, banks and utility companies add a fine to those who pay their bills late. In some countries, such as Hong Kong, the government will impose a surcharge on income tax bills for late payers.

- Give debtors incentives to pay earlier, such as giving a discount to those who pay their bills before the due date. Many businesses encourage their credit customers to use *direct debit* or *autopay*. These are financial services that involve transferring money owed to creditors by using funds directly from the client's bank account on designated days. This saves customers having to remember when to pay their bills and hence avoid penalties for paying late.

- Refuse any further business with a client until payment is made. This may include stopping supplies to a customer or suspending an order until payment is received.

- Threaten legal action. The threat of taking a customer to court is rather extreme but is often used for clients who repeatedly pay late.

Some businesses, such as suppliers of expensive luxury goods, rely more on credit sales than others. Hence, for these businesses it is more acceptable to have a higher debt collection period. Fast food restaurants or hair salons, on the other hand, have customers paying for their goods at the time of purchase so their debt collection period would be much lower.

Figure 3.6.b Suppliers of luxury goods, such as yachts, rely on credit sales

Creditor days

The creditor days ratio measures the number of days it takes, on average, for a business to pay its trade creditors. The formula for this ratio is:

$$\text{Creditor days} = \frac{\text{Creditors}}{\text{Cost of goods sold}} \times 365$$

For example, if a business has \$225,000 owed to its suppliers (as seen from its balance sheet) with \$2 million worth of cost of goods sold (COGS), then the creditor days ratio is 41 days. This means the business takes 41 days on average to pay its suppliers. It is common to provide customers with 30–60 days credit, so a creditor days ratio in this range would seem acceptable.

A high creditor days ratio means that repayments are prolonged. This can help to free up cash in the business for other use (in the short term). However, a high ratio might also mean that the business is taking too long to pay its creditors so suppliers may impose financial penalties for late payment. In this case, a high creditor days ratio will harm the firm's cash flow position.

The efficiency position of a business can be enhanced by improving any of its efficiency ratios, i.e. increasing stock turnover, reducing debtor days, and increasing creditor days. Strategies to achieve this include:

- Developing closer relationships with customers, suppliers and creditors, thereby helping to reduce the debt collection time and extend the credit period.
- Introduce a system of just-in-time production (see Unit 5.5) to eliminate the need to hold large amounts of stock and to improve stock control.
- Improve credit control, i.e. managing risks regarding the amount of credit given to debtors. For example, giving customers an incentive to pay earlier or on time helps to reduce the chances of bad debts (loans that do not get repaid).

Gearing ratio

The gearing ratio is used to assess an organization's *long-term liquidity* position. This is done by examining the firm's capital employed that is financed by long-term debt, such as mortgages and debentures (see Unit 3.1). Gearing enables managers to gauge the level of efficiency in the use of an organization's capital structure.

The gearing ratio formula is:

$$\text{Gearing ratio} = \frac{\text{Long-term liabilities}}{\text{Capital employed}} \times 100$$

Or

$$\text{Gearing ratio} = \frac{\text{Loan capital}}{\text{Capital employed}} \times 100$$

For example, a business with long-term liabilities totalling \$5 million whilst its capital employed is \$15 million has a gearing ratio of 33.3%. This means that one-third of the organization's sources of finance comes from external interest-bearing sources, whilst the other two-thirds represent internal sources of finance. Recall from Unit 3.5 that Capital employed = loan capital (or long-term liabilities) + share capital + retained profit. The higher the gearing ratio, the larger the firm's dependence on long-term sources of borrowing. This means that the business incurs higher costs due to debt financing, such

Question 3.6.1

(a) Use Tables 3.5.a and 3.5.b to calculate the following ratios for *JKL Ltd.*, for both years:

(i) stock turnover *[2 marks]*

(ii) debtor days and *[2 marks]*

(iii) creditor days. *[2 marks]*

(b) Examine the ways in which *JKL Ltd*. could improve its efficiency position. *[6 marks]*

(c) Using your answers from part **(a)** above, explain the efficiency position of *JKL Ltd*. *[6 marks]*

as interest repayments to banks or debenture holders. This can therefore limit the net profit for the firm.

Creditors and investors are interested in the level of gearing of a business. A firm is said to be *highly geared* if it has a gearing ratio of 50% or above. Such businesses are more vulnerable to increases in interest rates. This situation is similar to an individual who has a large mortgage with a bank. A rise in interest rates will mean such individuals will have higher monthly interest repayments on their outstanding mortgages. Similarly, a highly geared business will be more exposed to interest rate increases or if there is a downturn in the economy as loan repayments remain high, while cash inflow from sales will tend to fall in a recession. Other financiers are less likely to lend money to firms that are already highly geared due to their large loan commitments. Such businesses are more prone to experience financial difficulties and may be taken over by larger rivals.

Shareholders and potential investors are also interested in the gearing ratio as it helps to assess the level of risk. Since financiers have to be repaid first (with interest), this may reduce the amount paid to shareholders and the amount retained for reinvestments. However, if the profitability of the business is high, then potential returns can be very attractive even in highly geared firms.

Although gearing can make profits more volatile, businesses tend to require external finance to fund their expansion. The phrase 'you need money to make money' suggests that external financing can help businesses to grow. Many years before becoming US President, Donald Trump made his wealth largely through high gearing as internal sources of finance are rarely sufficient to fund the rapid growth of a business. The problem facing finance managers is how much debt the business can handle before the benefits of growth outweigh the costs of high gearing and financial risks. The level of gearing that is acceptable to a business will depend of several factors such as:

- The size and status of the business – Generally, there is a positive correlation between a firm's size and status and its ability to repay long-term debts. Most stakeholders would not worry too much if McDonald's had a gearing ratio of 50% as it is likely to be able to repay the debt.

- The level of interest rates – If interest rates are low, then businesses are less vulnerable (at least in the short term) even with high gearing. For example, during Japan's recession in the 1990s, interest rates were close to zero per cent. This would minimise the interest repayments on long-term external finance.

- Potential profitability – If businesses have good **profit quality** (long-term prospects of earningg profit) then high gearing is less likely to be an issue. This applies to many businesses in high-tech industries that invest heavily in research and development. They may need external finance to fund the expenditure on R&D but the potential for high returns can minimise their exposure to gearing.

Theory of knowledge

At what time does a business decide to expand?

Exam tip !

Examination questions typically ask students to use financial ratios to comment on an organization's:

a) profitability
b) liquidity position
c) efficiency position
d) gearing

These are the main categories of ratios! Make sure that you know their meaning and the different types of ratios within each category.

Question 3.6.2

(a) Calculate the gearing ratio for *JKL Ltd.* for both years. *[2 marks]*

(b) Explain what the gearing ratios tell you about *JKL Ltd.*'s long-term liquidity position. *[4 marks]*

(c) Examine whether high gearing can actually be beneficial to organizations like *JKL Ltd.* *[6 marks]*

4.1 The role of marketing

"The greatest pleasure in life is doing what people say you cannot do."- Walter Bagehot (1826–1877), British journalist

SL/HL content	Assessment objective
Marketing and its relationship with other business functions	AO1
The differences between marketing of goods and marketing of services	AO2
Market orientation versus product orientation	AO2
The difference between commercial marketing and social marketing	AO2
Characteristics of the market in which an organization operates	AO1
Market share	AO4
The importance of market share and market leadership	AO3
The marketing objectives of for-profit organizations and non-profit organizations	AO3
How marketing strategies evolve as a response to changes in customer preferences	AO3
How innovation, ethical considerations and cultural differences may influence marketing practices and strategies in an organization	AO3

CORE

Definition and nature of marketing

Marketing and its relationship with other business functions. AO1

People have different needs and wants. **Needs** are the essential necessities that all humans must have to survive: food, shelter, warmth and water. **Wants** are human desires, i.e. things that people would like to have. Irrespective of personal income or wealth, humans have infinite wants. **Marketing** exists to address people's needs and wants. It is about making customers want to buy the products of a particular business. It therefore looks at the reasons behind people's decisions, such as the price and the product's features (e.g. colour, size, quality or special features of a product). Meeting the needs and wants of customers is particularly important for businesses aiming to make a profit.

Legendary reggae songwriter and singer Bob Marley (1945–1981) famously said that he did not need a BMW (what he described as an expensive car) as he already had an alternative 'BMW' (Bob Marley and the Wailers). This sums up the challenge facing marketers who must tempt customers to buy their products. Management guru Peter F. Drucker famously said, *"Business has only two functions - marketing and innovation"*.

The marketing department of an organization tends to have four main or generic objectives:

- Ensure that the right **products** are supplied to fulfill the needs and wants of customers.
- Set the correct **price** so that customers can afford to buy the product (and to ensure that they do not buy from a rival business).
- Distribute (or **place**) the products conveniently for customers to buy the product.
- Ensure that there is adequate and effective **promotion** to convince customers to buy the firm's products.

There is no single universally accepted definition of the term 'marketing' because it is a complex process and differs from one type of organization to another. For example, the marketing objectives and strategies of charitable and non-profit organizations differ from those of large multinational companies. A widely used and accepted definition is provided by the Chartered Institute of Marketing which defines marketing as:

"The management process involved in identifying, anticipating and satisfying consumer requirements profitably".

This definition is commonly used as it covers the various roles of marketing:

- Marketing is a management process, so it requires people to take responsibility for decision-making.
- Marketing involves identifying the needs and wants of customers. This can be done through market research (see Unit 4.4) and data analysis.
- Marketing involves anticipating or predicting what customers might want in the future. For example, market research and new product development have created markets for laptops, smartphones, hybrid cars and smart TVs. The movie industry is constantly trying to produce films that audiences might want to see.
- Price, availability and quality are essential factors that customers consider when assessing value for money. Satisfied customers are more likely to become loyal customers.
- Marketing is about earning profit profit (or a financial surplus for non-profit organizations). Prices must therefore cover the costs of production. Car manufacturers would not use promotions such as 'buy one get one free' as part of their marketing. All organizations must ensure that the benefits of their marketing outweigh the costs.

Marketing is fundamental to the success of a business as it affects the sales and profits of the organization. However, marketing alone does not ensure success. Its relationship with other business functions should also be considered:

- **Operations management** The production department works closely with the marketers in using sales forecasts (from market research) to prepare their production schedules. These departments also work directly with each other to research, develop and launch products to meet the changing needs of customers. There may, however, be some conflict between the two departments as production managers may prefer a longer time period in which to test and develop products whereas marketing managers may urge for a quick launch to maximise sales revenues. Delays in launching a product not only means lost sales but can also be damaging to the organization's corporate image.
- **Finance and accounts** The marketing department works closely with the finance department to set appropriate budgets. Again, there can be conflict between these departments. For example, marketers might wish to exceed their budget to get maximum marketing exposure. However, the finance team wants all departments to work within their allocated budgets. The finance department would want prices to cover costs of production to generate a profit for the organization. However, marketers might feel that low prices (that do not necessarily cover all costs) are necessary for some products in the short term to get established in the market. Marketers might also use extended credit facilities (such as interest-free repayment plans) to entice customers. However, the finance department will be aware that extended credit can lead to liquidity problems (see Unit 3.7). Hence, both departments need to work collaboratively to strike a balance between their potentially conflicting interests.
- **Human resources (HR)** Marketing data can help the HR department to identify staffing needs. For example, the introduction of a new product might require hiring extra production staff and sales personnel. The HR department's role is to ensure the business has the right quantity and quality of workers through effective workforce planning (see Unit 2.1) to meet the wants and needs of its customers.

Figure 4.1.a Marketing alone does not ensure success

CORE

Marketing

Marketing goods and services

The differences between marketing of goods and marketing of services. AO2

There are similarities and differences in the marketing of goods and services. For example, both use promotion to build brand recognition, brand awareness and trust. The differences between the marketing of goods and services include the following characteristics:

- **Intangibility** Whilst goods are tangible (physical), services are intangible. Marketers face a challenge to communicate the benefits of the service, e.g. why should customers use a particular hair salon? The choice is based largely on trust. By contrast, marketers tend to have less challenges selling a physical product with tangible attributes that customers can inspect before buying.

- **Inseparability** Services are consumed at the time of purchase, e.g. bus ride, watching a movie at the cinema, or having a massage at a health spa. Inseparability means it is not possible to separate the production and consumption of a service. Marketers strive to ensure the staff are well trained at providing outstanding and consistent customer services.

- **Heterogeneity** It is common to mass produce standardised (homogeneous) goods such as smartphones, books or soft drinks. However, services are heterogeneous because the experience is different for different customers. If customers experience poor customer service, they are likely to opt to use the services provided by other providers.

- **Perishability** Unlike goods, services cannot be stored. For example, each bus, cinema or airline seat that is empty means a loss in potential revenues to the businesses. By contrast, most goods are durable to some extent. For example, Coca-Cola is mass produced and stored in warehouses before distribution to wholesalers and retailers so can be marketed using international marketing strategies (see Unit 4.7).

- **Product strategy** Many businesses provide value-added services to attract customers, e.g. supermarkets and fast food restaurants in many parts of the world offer a free delivery service. Coffee shops, banks and hotels often offer free Wi-Fi. Service companies also have to decide on whether their offerings will be standardised or customised.

Figure 4.1.b Most coffee shops provide wi-fi services

- **Price strategy** As people are a fundamental aspect of marketing services, the cost and hence the price can to be quite high. A challenge for marketers is to get the right pricing strategy for a service that appeals to customers, covers costs of production and generates profit for the business. The pricing decision depends on the source of value to customers, e.g. lawyers, accountants and surgeons provide highly specialised services that would be reflected in the price. Some service providers base their pricing strategy on time spent on providing the service whilst others base it on the level of skills required to provide the service.

- **Promotional strategy** Promoting a service can be a challenge for marketers as it is intangible. Businesses often use the physical environment to promote their services, (such as hotels, gyms and schools) so that customers can visualise the quality of the service being provided. Other common promotional strategies include the use of branding, slogans, logos and celebrity endorsements (see Unit 4.5).

- **Place strategy** The location decision is vital for the marketing of services - customers are unlikely to visit restaurants, hotels, theatres, banks and retailers in highly inconvenient or remote locations. By contrast, most goods can be ordered online (such as books, music, DVDs, clothes or even food products), so the location decision is less important provided there are effective distribution channels to deliver the products to customers. Some retailers, such as petrol stations or supermarkets, often have ATM cash machines, providing added convenience for their customers.

5.3 Lean production and quality management

"I'm a slow walker, but I never walk back." - Abraham Lincoln (1809–1865), 16th president of the USA

HL content	Assessment objective
The following features of lean production: • less waste • greater efficiency	AO1
The following methods of lean production: • continuous improvement (*kaizen*) • just-in-time (JIT) • *kanban* • *andon*	AO2
Features of cradle to cradle design and manufacturing	AO2
Features of quality control and quality assurance	AO1
The following methods of managing quality: • quality circle • benchmarking • total quality management (TQM)	AO2
The impact of lean production and TQM on an organization	AO3
The importance of national and international quality standards	AO2

Features of lean production

The following features of lean production: less waste and greater efficiency. AO1

Lean production is the process of streamlining operations and processes to reduce all forms of waste and to achieve greater efficiency. Thus, lean production should lead to improved quality and reduced costs. It was first used in Japan during the 1950s. Businesses are increasingly trying to reduce wastage (or **muda**, the Japanese term for 'waste') in the production process. "OTHER"© examples of muda include:

- **O**ver-processing - This means a business adds more features or functions to a product than is necessary to meet the needs of customers. Over-processing does not add much value for the customer, but increases the organization's production costs. Consider the many functions and features on your smartphone or computer that you do not use (or are even aware of).

- **T**ime - Delays in the production process (perhaps due to inefficient machinery or poor training) or the delivery process have a large negative impact on productivity and perceptions of quality. Delays can also occur due to excess movement of employees between workstations, which wastes time and reduces labour productivity.

- **H**uman effort - Tasks may need to be reworked (done again) due to waste from substandard and defective output.

- **E**nergy - Leaving on lights, heating or air conditioning when not needed is a huge and unnecessary drain on financial resources.

- **R**esources and materials - There can be wastage of materials and resources that have not been used efficiently, such as floor space. Wastage also occurs if there is underproduction (resulting in shortages and causing a loss of potential customers) or overproduction (producing more than necessary, which leads to stockpiling).

Figure 5.3.a Overstocking is a source of muda (waste)

In adopting lean production, several principles are followed:

- Waste minimisation – This requires the business to remove any operation or process that does not add value to the product. It involves making more efficient use of a firm's scarce resources (its land, labour and capital resources).
- 'Right first time' approach - Businesses aim for zero defects by identifying and resolving all problems at source. It is more efficient to use resources to prevent mistakes rather than trying to correct them as this eliminates the need for quality controllers to spend time checking the quality of the output.
- Flexibility - Resources must be adaptable to the changing needs of the business, e.g. firms might use multi-skilled workers who can work on several projects simultaneously.
- Continuous improvement - Lean production requires the continual strive to improve quality and efficiency, thereby reducing average costs of production.
- Supply Chain Management - Businesses must develop and maintain good professional working relationships with their suppliers and intermediaries to help streamline the supply chain process (see Unit 5.5).

Question 5.3.1 Subway

Subway is a private limited company, founded in 1965, that specialises in the sale of fresh 'submarine sandwiches'. Operating on a global scale, it is the world's largest **franchise** restaurant operator. The secret to its success has been the focus on promoting an image of being a health-conscious restaurant chain. With over 45,000 restaurants in around 105 countries, **quality management** is a critical aspect of *Subway's* operations and its growth strategy. Its homepage (www.subway.com) has a dedicated section for customers to comment on their experiences at *Subway*, which helps the company to gain customer feedback to further improve its quality standards.

(a) (i) Define the term **franchise**. *[2 marks]*

(a) (ii) Define the term **quality management**. *[2 marks]*

(b) Explain why quality management is important to a global franchise business such as *Subway*. *[4 marks]*

(c) Examine the potential problems of quality management as *Subway* continues its rapid expansion plans. *[6 marks]*

Methods of lean production

The following methods of lean production: continuous improvement (*kaizen*), just-in-time (JIT), *kanban* and *andon*.
AO2

Kaizen (continuous improvement)

Dutch artist Vincent Van Gogh (1853–1890) said, "*Great things are not done by impulse, but by a series of small things brought together*". **Kaizen** is the Japanese word for a philosophy of **continuous improvement**. Kaizen is made up of two words –'Kai' meaning *change* and 'Zen' meaning *better*. Hence, kaizen comes about by changing for the better. It has become a widespread approach in the workplace where workers and managers constantly try to find ways to improve work processes and efficiency.

The concept of kaizen is therefore a process of productivity and efficiency gains that come from *small and continuous* improvements being made, rather than a large one-off improvement. The Turkish have a saying, *'Stairs are climbed step by step'*. Confucius, the Chinese philosopher, said, "*It does not matter how slowly you go so long as you do not stop*". These sayings are similar to the famous children's fable about the hare and the tortoise (see Box 5.3.a).

Figure 5.3.b Kaizen is about making small steps to continually improve

Box 5.3.a The hare and the tortoise (a case of continuous improvement)

A hare and a tortoise were in a race together. The hare thought that its natural superiority would mean winning the race would be simple. The hare leapt ahead and after a short while the tortoise was nowhere in sight. Complacent, the hare decided to take a rest and fell asleep. This allowed the tortoise, with its small but continuous steps, to eventually overtake the hare and win the race.

The kaizen process involves forming small groups of employees whose role is to identify changes and improvements to the organization's products, processes and procedures. The aim is to establish a steady flow of small improvements rather than one-off and/or radical changes. This is partly because people tend to be resistant to change, especially change that is large scale and disruptive to the organization. Change is easier to manage when there are small and continuous improvements. Kaizen groups do not tend to directly look at cost cutting; the focus remains on continual improvements in quality. However, by doing so, kaizen often brings about cost savings.

Kaizen also aims to eliminate waste by looking at ways to improve the productivity and efficiency of the firm's operations. For example, if a worker is late to work for just one minute each day, then that equates to 5 minutes per week or over 4 hours per year. If this was the norm for a workforce of 50 people, then the lost production time would be more than 200 hours each year (or around 25 days of lost output). Kaizen is therefore an integral part of quality management. The philosophy behind kaizen is that *anyone* in the organization, irrespective of their rank, can make a contribution. The best suggestions often come from employees who have direct contact with customers. They are the ones best positioned to understand the benefits of changes to certain operations. This has the added benefit of motivating staff as they are able to use their initiative and have some input in the decision-making process.

Just-in-time (JIT)

Just-in-time (JIT) is an inventory management system based on stocks being delivered as and when they are needed in the production process. As stocks are delivered just before they are used, there is no need to have a stock control system as buffer stocks are not required (see Unit 5.5). Finished goods are dispatched as soon as they have been produced, thereby eliminating the need for storage. JIT, a Japanese philosophy first advocated by former Toyota Executive Taiichi Ohno, is a method of lean production because inventory is costly and wasteful.

JIT is common in car manufacturing. For example, the BMW Mini is assembled using a JIT system. A customer places a specific order before the vehicle is made. Each component is ordered to be available when needed for production. The use of bar codes for these components helps to ensure the right parts are supplied at the right time. Unlike traditional assembly lines used in mass production (see Unit 5.2), JIT allows a series of Mini cars, all of different colours and engine sizes, to be produced on the same production line. The JIT system relies on automation, bar codes and the use of highly skilled and motivated workers. The advantages and disadvantages of JIT are covered in Unit 5.5.

Case study

How's this for an example of lean production? On 17th November 2017, the Metropolitan Intercity Railway Company, a Japanese rail operator, formally apologised after one of its trains left 20 seconds too early. A spokesperson for the rail company said the train conductor had not checked the train's timetable properly, and added that employees were instructed to follow procedures strictly to prevent a recurrence. For passengers who missed the train, the next scheduled one arrived (on time) four minutes later.

Kanban

Kanban is a method of lean production developed by Taiichi Ohno, a Toyota executive, to ensure that inventory is based on actual customer orders rather than sales forecasts. At its simplest level, kanban uses a card system with an inventory number attached to each component in the production process. Kanban is Japanese for visual card. The system starts when a customer places an order – a part (component) is only used (or ordered) if there is a kanban card for it. A kanban must accompany each item or component at all times in the production process and no item is used or moved on without a kanban card. Any defects are identified to prevent it being moved on to the next process.

A typical kanban card shows operatives *what* is to be produced, *how much* of that item is to be produced and by *when* it needs to be made. Traditional sushi restaurants use kanbans, with customers placing their orders using a card system, i.e. what dishes they want and how many of each. Although orders can be placed using computers in modern restaurants, the process is still based on a (computerised) kanban system. Examples of other businesses that have used kanban include Xerox, Expedia, Rovio and Groupon.

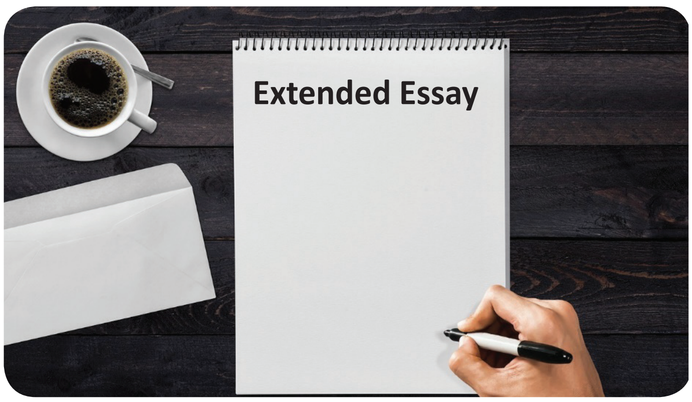
Figure 5.3.c Kanban is commonly used in Japanese restaurants

As a visual tool to monitor and manage workflow, kanban boards are created using named columns to show where each task is in the production process (see Figure 5.3.d). The visual nature of the kanban board makes it easier for operatives to see what tasks have been completed, which ones are works in progress (WIP) and which ones are yet to be started. Each stage in the workflow process has a limited (or maximum) number of tasks that can be worked on at any point in time (shown in brackets). Having these WIP limits helps to ensure that production keeps flowing at a steady pace, workers complete tasks before they take on any more work, and reduce waste as workers do not have to spend too much time switching between tasks. Kanban allows workers to see if there are any bottlenecks in the production process so that teams can work together to solve the problem, thus ensuring workflow continues.

6.4 Extended Essay

"When something can be read without effort, great effort has gone into its writing." - Enrique Jardiel Poncela (1901–1952), Spanish playwright and novelist

The Extended Essay (EE)



The Extended Essay (EE) provides students with the opportunity to complete an extensive piece of academically rigorous research. The EE is compulsory for all IB Diploma students, and should be based on an area of personal interest to the student. Students who fail to submit an EE are not awarded the IB Diploma. The guidelines (first exams 2018) suggest that students spend approximately 40 hours on the EE, writing up to 4,000 words. For the EE Supervisor, it is suggested that 3 to 5 hours are spent with each student, including time spent on three compulsory reflections sessions, ending with the *viva voce* (an oral interview following final submission of the EE). The essay is externally marked out of 34 points by an examiner.

Note: since May 2015, an 'E' grade in the Extended Essay or TOK constitutes a "failing condition" (see http://goo.gl/wPhX89).

Aims of the Extended Essay

The aims of the EE are to provide students with the opportunity to:

- engage in independent research with intellectual initiative and rigour
- develop research, thinking, self-management and communication skills
- reflect on what has been learned throughout the research and writing process.

Responsibilities of the EE Supervisor

- Read and comment on the first and only draft (version) of the completed EE. Supervisors must not edit any of the draft EE.
- Monitor the progress of the supervisee to ensure that the EE is the student's own work.
- Offer guidance to the student in accordance to the guidelines specified in the EE Guide.
- Read the final draft (version) of the EE to confirm its authenticity.
- Complete the EE Supervisor's comments on the Reflections on Planning Progress Form (RPPF). Students must complete 3 written reflections of no more than 500 words in total on the RPPF sheet.
- Submit a predicted grade for the EE based on the Assessment Criteria.

- Conduct three reflection sessions with the candidate: one early on in the process, an interim meeting and then the final *viva voce*. Other sessions are allowed but do not need to be recorded on the RPPF sheet.

Exam tip !

The EE-RPPF has a word limit of 500 words. It is suggested that you write up to 150 words for each of the first two reflections. Write up to 200 words for the third and final reflection.

The Business Management Extended Essay

- The BM EE must be based on conventional (accepted) BM theory – students are therefore advised to stick to the topics within the current BM syllabus.*
- BM EEs can be backwards looking but must enable students to be evaluative in their work (not simply describing historical events).
- Students must avoid hypothetical questions, based on possible future events.
- The EE requires application of BM theory, tools and techniques.
- The essay should be written in a coherent and structured way.
- The EE should include breadth and depth of analysis and embrace extensive and detailed research.
- The emphasis of BM EEs from 2018 is on the use of **secondary data**. Students can use primary research if this helps to address the research question.
- A wide range of sources should be used including: BM textbooks, general business management texts, industry analyses and company annual reports. After all, undue dependence on one particular source is likely to mean the student writes an unbalanced essay that lacks critical thinking.
- Adding conceptual perspectives (the CUEGIS concepts) can add interest and depth to the EE, e.g. the ethical and cultural impacts of business decisions.
- The EE is marked using the assessment criteria in the EE Guide (see https://goo.gl/2pGFLH). Make sure you get a copy of this and become familiar with the expectations for each criterion.
- Examiners will not read beyond the 4,000th word of the EE (excluding the bibliography and appendices). This clearly means that marks will be lost.

* Note that from 2018, students may also use (appropriate) analytical tools that are <u>not</u> included in the syllabus, such as Michael Porter's *five forces analysis* or Porter's *generic strategies*.

Exam tip !

Ensure that all components of the EE are unmistakably related to the research question. This will help you to maintain focus and not drift off the subject.

Note: the 4,000-word limit does not include the: acknowledgements, contents page, maps, charts, diagrams, annotated illustrations, tables, equations, formulae and calculations, citations/references, footnotes or end notes, the bibliography and appendices. Also, the RPPF is not part of the 4,000 word limit.

Formulating an Extended research question

- The essay should be phrased as a probing question, i.e. one that demands inquiry.
- The research question should allow the student to show and use a variety of analytical tools.
- Make sure the research question has a clear focus that allows the application of BM theory, tools and techniques. This is often supported by statistical data to assist discussion and evaluation.

- The essay should also allow the student to engage in broad and detailed research, requiring the selection and use of a range of sources.

Examples of suitable EE research questions:

1. How significant is market positioning in establishing Audi as a premium brand in Hong Kong?
2. How effective has the joint venture between 7-Eleven and Ocean Park been as a growth strategy?
3. How effective have the campaigns of Ronald McDonald House Charities been in raising awareness of McDonald's corporate social responsibility in Bromley, UK?
4. To what extent has the joint venture between Nestle and Haagan Dazs increased its market share in the US ice cream industry in Denver, Colorado?
5. To what extent is cost-plus pricing suitable for Savita Solar?
6. How significant is Maslow's hierarchy of needs in explaining the improved level of motivation at the English Schools Foundation?
7. How effective has the takeover of Cadbury's been as a growth strategy for Kraft Foods in the Chicago, USA?
8. To what extent are ethical objectives relevant to Pamoja in delivering its online courses?
9. Will HTC's release of its latest smartphone save it from insolvency?
10. Should Ford remove its sedans from it product portfolio in order to focus on its SUVs and Mustang models in its Kansas City Assembly Plant?

Should Ford focus on its best-sellers, such as the Mustang?

Exam tip !

You are required to have both a **topic** and **research question** (RQ) for the essay. For example:

- Topic: An evaluation of financial motivation at Dustin Dojo Inc.
- RQ: To what extent has the introduction of differentiated piece rate improved employee motivation at Dustin Dojo?

- Topic: An evaluation of the role of corporate social responsibility practices at VW.
- RQ: How should VW strengthen its corporate social responsibility practices in the aftermath of diesel emissions scandal?

- Topic: An investigation into the success of joint ventures.
- RQ: To what extent has the joint venture between China's *Brilliance Auto* and *BMW* been a success as an external growth strategy?

Format of the Extended Essay

- Title page - include the essay research question, your personal code, and the date of submission.
- Contents page - show all sub-sections of the essay, including page numbers.
- Introduction - this section includes a brief background to the organization and an outline of the methodology used.
- Body - this section includes the findings (results) and analysis. Good essays show evidence of critical thinking within the body of the EE.
- Conclusion - this should stem from the research carried out, with the conclusion backed with evidence presented in the body of the essay.
- References and bibliography - a comprehensive list that references all sources used. Note that the omission of a bibliography is deemed to be unacceptable for Criterion I, so zero marks would be awarded.
- Appendices - supplementary evidence and supporting documentation (such as excerpts of company annual

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Supplementary information