Course Companion

International Baccalaureate · IB Diploma · Business Management · HL

Every topic handout in one volume

exercises.lol

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Introduction to business management (1.1-1.6)

International Baccalaureate · IB Diploma · Business Management · HL

Introduction to business management

IB Diploma Programme Business Management HL, Unit 1 *Introduction to business management* (first assessment 2024). This topic covers sections 1.1 to 1.6: what a business is, types of business entities, business objectives, stakeholders, growth and evolution, and multinational companies. Unit 1 has no HL-only sections; HL students need deeper analysis, and Paper 3 asks them to plan for a social enterprise. The course's four concepts, **change**, **creativity**, **ethics** and **sustainability**, run through every section. The worked examples follow one car-repair business from its start, and its numbers fit every later unit.

In 1995 Wang Chuanfu started BYD in Shenzhen with about 20 workers, making batteries for mobile phones. It grew by building more factories, then by buying a small car maker in 2003. By 2023 BYD sold more new-energy cars than any other company in the world. This topic shows the choices behind a story like that: what form a business takes, what it aims for, whom it must keep happy, and how it grows.

Must-know for this topic:

Idea	Key content
business	resources → goods and services; four functions; four sectors; entrepreneurs
entities	sole trader, partnership, privately and publicly held companies; social enterprises
objectives	vision and mission; strategic and tactical objectives; CSR
stakeholders	internal and external; conflicts between them
growth	economies and diseconomies of scale; internal and external growth
MNCs	good and bad effects on the host country

What a business is

A **business** is an organisation that uses resources to make goods or services that people want. It combines:

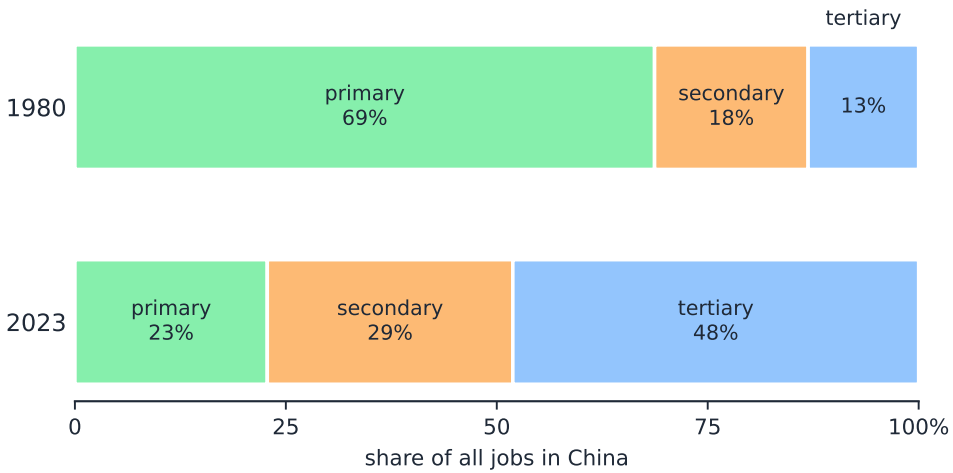
- **human resources**: the people who work in it;
- **physical resources**: buildings, machines, materials;
- **financial resources**: the money to start and run it.

Every business has four **business functions** , and each is one unit of this course: human resources (Unit 2), finance and accounts (Unit 3), marketing (Unit 4) and operations (Unit 5).

Businesses work in four **sectors** :

Sector	What it does	Examples
primary sector	takes natural resources from the earth	farming, fishing, mining
secondary sector	makes goods from materials	car factories, building
tertiary sector	provides services	shops, banks, car repairs
quaternary sector	works with knowledge and information	software, research, consulting

As a country develops, jobs move from the primary sector to the secondary and then the tertiary sector. This is called **sectoral change** .



China's jobs moved from farming to services in four decades

An **entrepreneur** starts a new business and takes the risk that it may fail. An **intrapreneur** has new ideas and leads new projects inside an existing business. People start businesses to be their own boss, to follow an idea, or to earn more. They meet problems: finding finance, finding customers, little experience, strong rivals and the law's rules.

Types of business entities

The **private sector** is owned by individuals and private firms. The **public sector** is owned by the government.

The most important difference between the types is **liability** , which means who pays the business's debts if it fails.

- With **unlimited liability** , the owners must pay the debts from their own money, even by selling their home.
- With **limited liability** , owners can only lose the money they put into the business. This is possible because a company is a separate legal person from its owners.

Type	Owners	Liability	For	Against
sole trader	one person	unlimited	easy to set up; owner keeps all profit and makes every decision	hard to raise money; long hours; the business may end when the owner stops
partnership	two or more partners	usually unlimited	more money and more skills; work is shared	partners may disagree; each is responsible for the others' decisions
privately held company	shareholders, often a family; shares are not sold to the public	limited	owners keep control; limited liability	must register and publish some accounts; harder to raise large sums
publicly held company	anyone can buy shares on a stock exchange	limited	can raise very large amounts of money	must publish full accounts; owners can lose control in a takeover; pressure for short-term profit

A **social enterprise** is a business whose main aim is to help people or the environment. It earns money by trading, but it puts its **surplus** back into its aim.

- **For-profit social enterprises** include private-sector companies with a social aim, public-sector companies owned by the government, and **cooperatives**, which are owned and run by their members (such as workers or farmers) and share profits among them.
- **Non-profit social enterprises** include **non-governmental organisations** (NGOs) and charities. They depend on donations and grants as well as trading.

> **Worked example.** The car-repair business starts as a sole trader with 20,000 of savings. After a year the owner takes a partner, who adds another 20,000 and shares the long working week. Now each partner is responsible for the other's decisions and debts. When the business opens a second workshop, the owners form a privately held company. Their homes are now safe if the business fails, but they must register the company and publish accounts.

Business objectives

A business sets its aims from the top down.

- A **vision statement** says what the business hopes to become in the long run: "To be the repair garage every family in the city trusts."
- A **mission statement** says what the business does, for whom and how: "We repair family cars quickly, at a fair price, and explain every bill."
- **Strategic objectives** are long-term aims set by senior managers: growth, profit, market share, protecting the value of the shares, and ethical aims.
- **Tactical objectives** are shorter-term, smaller steps, often set for one department, that help to reach a strategic objective.



Each level turns the one above it into more detailed, shorter-term aims

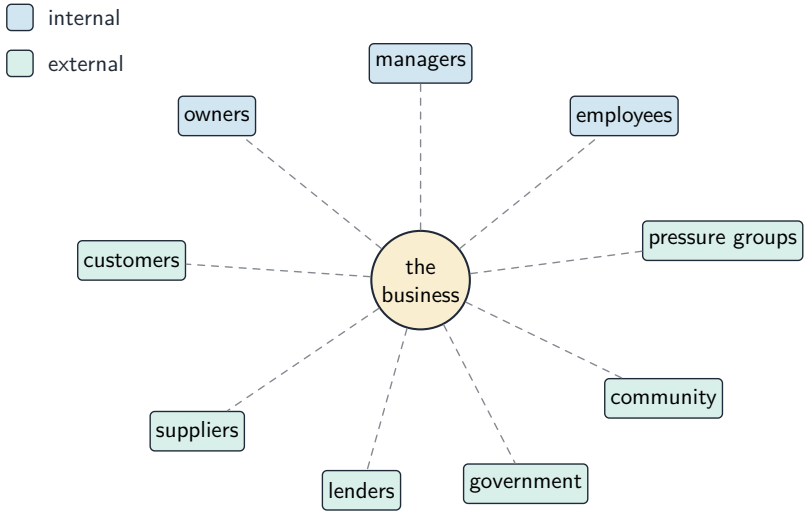
> **Worked example.** The repair business sets a strategic objective of 30% of the local repair market within three years. Its tactical objectives are to open on Saturdays within six months and to reach an average online review of 4.5 stars.

Objectives change when the situation changes. A new rival, a recession, new technology such as electric cars, or a new owner can all make a business rethink its aims.

Corporate social responsibility (CSR) means a business aims to act ethically towards workers, customers, the community and the environment, not only to make a profit. The repair business recycles all its oil and old batteries and trains two young apprentices a year. CSR costs money in the short term, but it can build a good reputation, attract customers and staff, and avoid fines. Critics say some firms use CSR only for advertising.

Stakeholders

A **stakeholder** is any person or group affected by what a business does.



Internal stakeholders work inside the business; external stakeholders are affected from outside

- **Internal stakeholders** are inside the business: owners or shareholders, managers and employees.
- **External stakeholders** are outside it: customers, suppliers, banks and other lenders, the government, competitors, **pressure groups** (groups that campaign on an issue, such as the environment) and the local community.

Stakeholders often want different things, so there is **stakeholder conflict** . Shareholders want higher dividends, but employees want higher wages. Customers want low prices, but suppliers want high prices. The local community wants peace and quiet, but the business wants to grow. Managers deal with conflict by deciding whose needs matter most, by talking and agreeing a compromise, or by changing the plan so that more groups gain.

> **Worked example.** Saturday opening pleases customers and the owners, but the mechanics lose their weekend. The owners agree a rota, so each mechanic works one Saturday in four, and pay 50% extra for Saturday hours.

Growth and evolution

Economies and diseconomies of scale

Economies of scale are the fall in average cost (cost per unit) as a business grows. **Internal economies of scale** come from the business's own growth:

- **purchasing economies** : discounts for buying in bulk;
- **technical economies** : bigger, better machines used fully;
- **managerial economies** : hiring specialist managers;
- **financial economies** : big firms borrow more cheaply;
- **marketing economies** : one advert reaches more customers per unit sold.

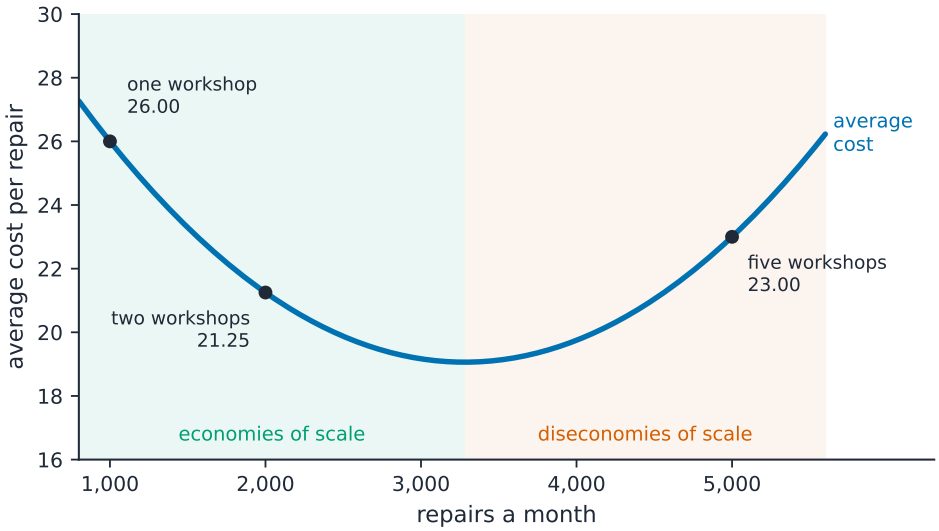
External economies of scale come from the growth of the whole industry in an area, such as colleges that train mechanics, or parts suppliers that open nearby.

Diseconomies of scale are the rise in average cost when a business grows too big. Communication becomes slow, managers lose control, decisions take longer, and workers feel less valued, so motivation falls.

> **Worked example.** Average cost = total cost ÷ output.

	Repairs a month	Total cost	Average cost
one workshop	1,000	26,000	26.00
two workshops	2,000	42,500	21.25
five workshops	5,000	115,000	23.00

Going from one workshop to two lowers average cost by 4.75 a repair: bulk discounts on parts and one manager for both sites. At five workshops the owners expect average cost to rise again, because they could no longer watch every site and parts would have to travel between them. This is the point where diseconomies begin.



Average cost falls with economies of scale, then rises once diseconomies set in

Small businesses have advantages too. They can give personal service, change quickly, and keep the owner in control. Many owners choose to stay small for these reasons.

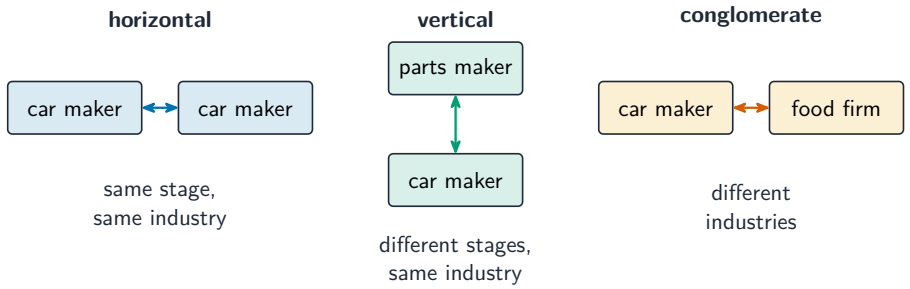
Internal and external growth

Internal growth (organic growth) means growing from inside: opening new branches, selling new products, or winning more customers. It is slow but safe, and the business keeps its own culture.

External growth means growing by joining with other firms. It is faster, but it is expensive and the two cultures may clash.

Method	Meaning
merger	two firms agree to join and become one new firm
acquisition / **takeover**	one firm buys more than half the shares of another; a takeover is an acquisition the target does not want
joint venture	two firms create a new firm together and share its costs, profits and control
strategic alliance	firms work together on a project but stay separate and do not create a new firm
franchising	a franchisor sells others the right to use its brand and methods, for a fee and a share of sales

When firms join, the type of integration depends on how their businesses relate.



Horizontal, vertical and conglomerate integration: same stage, different stages, different industries

Multinational companies

A **multinational company** (MNC) has operations in more than one country. The country where it opens a factory or office is the **host country**.

Good effects on the host country	Bad effects on the host country
new jobs and better training	profits may be sent back to the MNC's home country
investment and new technology	local firms may not survive the competition
tax revenue for the government	local culture may change, with fewer local brands
more choice for consumers	pollution and heavy use of resources
local suppliers win new orders	an MNC may pressure the government on tax or rules

The balance depends on the MNC, the host country and the time period. A car factory may bring thousands of jobs, but if it closes ten years later the town loses most of them at once. Governments try to keep the good effects by setting rules on pay, pollution and local partners.

Checklist

- Resources; the four functions; the four sectors and China's sectoral change; entrepreneurs and intrapreneurs; why businesses start and the problems they meet (1.1).
- Private and public sector; sole trader, partnership, privately held and publicly held company with liability and finance compared; for-profit and non-profit social enterprises, including cooperatives and NGOs (1.2).
- Vision and mission statements; strategic and tactical objectives; why objectives change; CSR (1.3).
- Internal and external stakeholders; conflicts between them and how managers deal with them; the Saturday-opening example (1.4).
- Internal and external economies of scale, diseconomies, the average cost of 26.00, 21.25 and 23.00; reasons to stay small; internal and external growth; mergers, acquisitions, joint ventures, strategic alliances and franchising; horizontal, vertical and conglomerate integration (1.5).
- The good and bad effects of MNCs on host countries (1.6).

Paper 1 asks you to define terms, explain them and discuss them in the case-study business. Paper 2 may ask for the average-cost calculation. Paper 3 (HL) asks you to plan for a social enterprise, so the types of social enterprise and the stakeholder map are your starting kit. All numbers about the repair business are original.

Human resource management (2.1-2.7)

International Baccalaureate · IB Diploma · Business Management · HL

Human resource management

IB Diploma Programme Business Management HL, Unit 2 *Human resource management* (first assessment 2024). This topic covers sections 2.1 to 2.7: human resource planning, organisational structure, leadership, motivation, organisational culture (HL), communication and employee relations (HL). The worked examples follow the course's repair business, which has now grown to 80 employees in four workshops.

Every year Google, Haidilao and many other firms spend large sums on staff benefits, training and team events. Haidilao's waiters are famous for their friendly service, and the company gives them real power to please customers: a waiter can give a free dish or a discount without asking a manager. Why would a firm trust its lowest-paid workers like this? This topic is about the people in a business: how they are organised, led, motivated and kept.

Must-know for this topic:

Idea	Key content
HR planning	workforce planning; internal and external factors; recruitment, training, appraisal, dismissal
labour turnover	$\frac{\text{number of staff leaving}}{\text{average number of staff}} \times 100$: $12 \div 80 \times 100 = 15\%$
structure	span of control, levels, chain of command, delegation; tall against flat; matrix; HL shamrock
leadership	autocratic, paternalistic, democratic, laissez-faire, situational
motivation	Taylor, Maslow, Herzberg, McClelland, Deci and Ryan; HL equity and expectancy; financial and non-financial rewards
culture (HL)	Handy's power, role, task and person cultures; culture clashes

Idea	Key content
communication	formal and informal; barriers
employee relations (HL)	sources of conflict; collective bargaining, strikes; conciliation and arbitration

Introduction to human resource management

Workforce planning

Human resource management (HRM) makes sure the business has the right number of people, with the right skills, in the right jobs, at the right time. **Workforce planning** compares the staff a business will need with the staff it has, and plans how to close the gap.

Labour turnover measures how many workers leave in a year:

$$\text{labour turnover} = \frac{\text{number of staff leaving in a year}}{\text{average number of staff}} \times 100$$

> **Worked example.** The repair business has an average of 80 staff. In one year 12 leave. Labour turnover $= 12 \div 80 \times 100 = 15\%$. Each leaver must be replaced, so the business pays for recruitment and training, and it loses skills and customer knowledge. Some turnover is healthy: new staff bring new ideas.

Internal and external factors

Internal factors include the firm's objectives, its budget, its structure, and changes in technology. External factors include:

- **demographic change**: for example, an ageing workforce;
- **labour mobility**: how easily workers move between jobs and places;
- **migration**: workers coming from or going to other countries;
- new working patterns: **flexi-time** (choosing when to work the agreed hours), **teleworking** (working from home or elsewhere), and the **gig economy** of short-term jobs paid task by task, as for delivery riders.

Recruitment, training, appraisal and dismissal

Recruitment follows common steps: identify the vacancy, write a **job description** (the tasks of the job) and a **person specification** (the skills and qualities needed), advertise, shortlist, interview or test, and appoint.

- **Internal recruitment** fills the job with someone already in the firm. It is quicker and cheaper, and the person knows the business. But it brings no new ideas, and it leaves another job empty.
- **External recruitment** brings in new skills and ideas, but it costs more and takes longer.

Training:

- **Induction training** introduces new staff to the firm, its rules and its people.
- **On-the-job training** happens while working, for example by watching an experienced worker. **Off-the-job training** happens away from the workplace, such as a college course.
- **Cognitive training** develops thinking skills; **behavioural training** develops how people act with others, such as teamwork and dealing with customers.

Appraisal judges how well an employee is doing:

- **formative**: ongoing feedback to help the person improve;
- **summative**: a final judgement at the end of a period, often linked to pay;
- **360-degree**: feedback from managers, colleagues, junior staff and sometimes customers;
- **self-appraisal**: employees judge their own work.

Employment can end through **dismissal** (for a fair reason, such as serious misconduct) or **redundancy** (the job itself is no longer needed). Redundancy is not the worker's fault, so laws often require a payment.

■ Resistance to change (HL)

Workers often resist change in the workplace. The main reasons are:

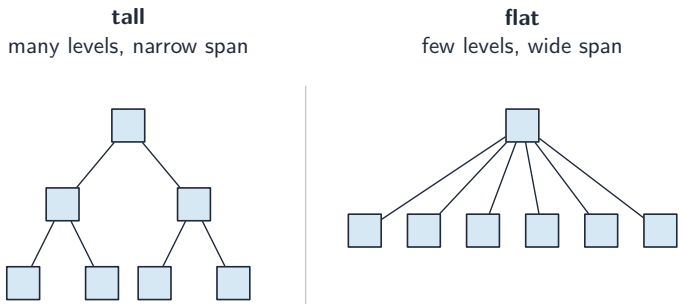
- **self-interest**: they fear losing pay, status or their job;
- **low tolerance of change**: they want security and routine;
- **misinformation**: they do not know the real reasons for the change;
- **different interpretation**: they judge the situation differently from managers.

HR strategies to reduce resistance include explaining the reasons early, involving workers in planning the change, training them for new tasks, offering support, and negotiating where some workers clearly lose. **Managing change** means planning and controlling it carefully; **leading change** means inspiring people to want it. A business that builds **flexibility** and **adaptability** into its workforce finds every later change easier.

Organisational structure

■ The key terms

- **Span of control**: the number of people a manager directly supervises.
- **Levels of hierarchy**: the number of layers of management.
- **Chain of command**: the line of authority from the top to the bottom.
- **Delegation**: passing authority to a junior. The manager still keeps the responsibility.
- **Centralisation** keeps decisions at the top; **decentralisation** passes them down.
- **Bureaucracy**: many rules and procedures.
- **Delayering**: removing levels of management.



A tall structure has many levels and narrow spans; a flat one has few levels and wide spans

	Tall structure	Flat structure
levels	many	few
span of control	narrow	wide
communication	slow, through many levels	fast and direct
supervision	close	less close; workers need more trust
promotion	many small steps	fewer chances
cost of managers	high	low

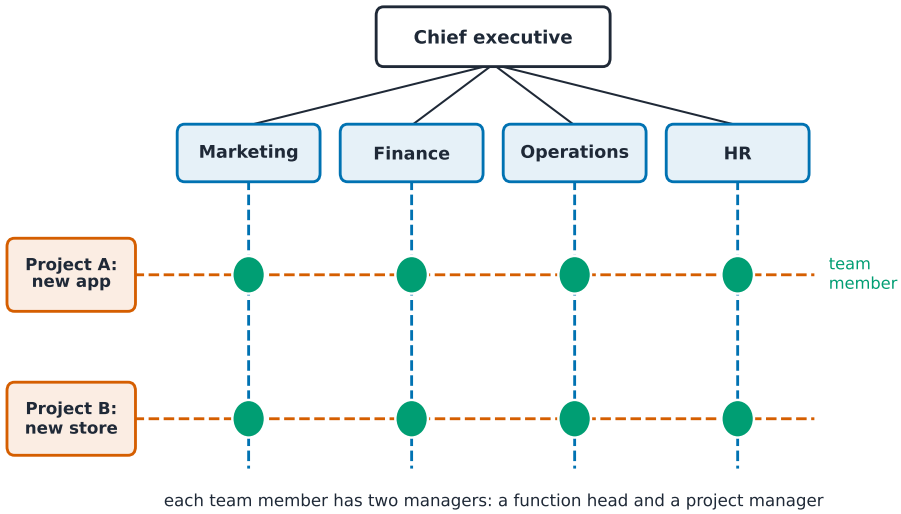
> **Worked example.** At the repair business, the owner and four workshop managers supervise 75 mechanics: three levels, and a span of 18 or 19 mechanics per workshop manager. That is too wide for coaching new mechanics. The owner adds a senior mechanic in each workshop. Now there are four levels and each senior mechanic supervises 9 or 10 people. Training improves, but a customer complaint now passes through one more link in the chain of command.

■ Types of structure

An **organisation chart** can be arranged:

- by function, as a **functional structure**: departments for marketing, finance, operations and HR;
- by product, as a **product-based structure**: a division for each product line;
- by region, as a **regional structure**: a division for each country or area.

A **matrix structure** crosses functions with projects. Each person works in a project team but also belongs to a department, so they have two managers. This brings mixed skills together, but two bosses can give different orders.

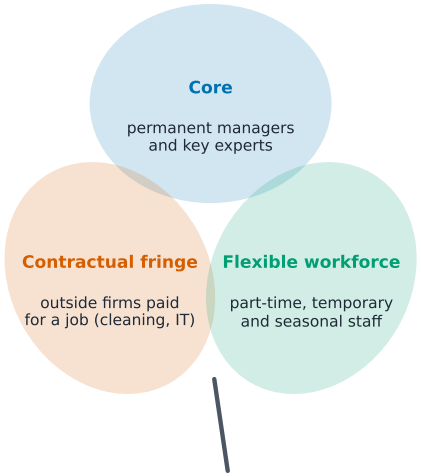


In a matrix structure, each person reports to a function head and a project manager

Project-based organisation and the shamrock (HL)

In a **project-based organisation**, work is arranged around projects. Teams form for a project and break up when it ends. Advertising agencies and building firms often work this way.

Charles Handy's **shamrock organisation** has three groups of workers, like the three leaves of a shamrock:



Handy's shamrock: a small permanent core supported by contractors and flexible staff

- the **core workers**: permanent managers and experts who are vital to the business;
- the **contractual fringe**: outside firms paid to do particular jobs, such as cleaning, IT or catering;
- the **flexible workforce**: part-time, temporary and seasonal staff.

The shamrock lowers costs and lets the business grow or shrink quickly. But the flexible workers may feel little loyalty, and quality is harder to control.

Leadership and management

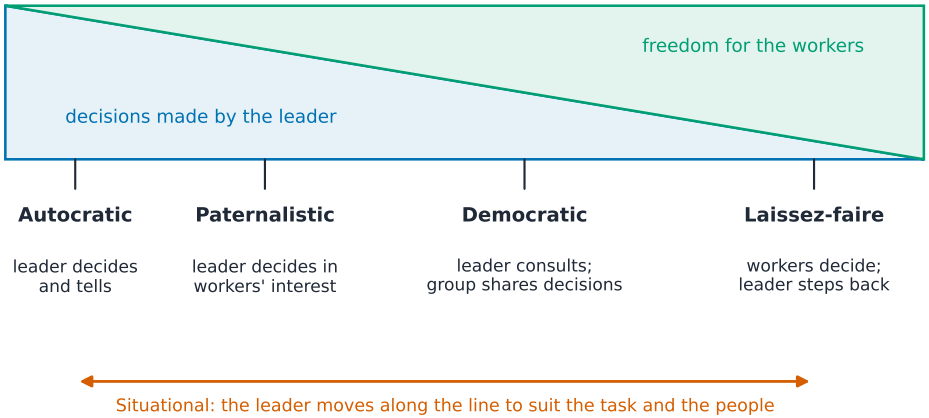
Management and leadership

Management is about getting things done. Henri Fayol listed its functions: planning, organising, commanding, coordinating and controlling. **Leadership** is about setting a direction and inspiring people to follow it. A good manager is not always a good leader, and the reverse is also true.

Leadership styles

Style	How decisions are made	Works well when	Problems
autocratic	the leader decides alone and gives orders	quick decisions are needed; a crisis; unskilled staff	workers feel unvalued; no ideas from below
paternalistic	the leader decides, but in what they think is the workers' interest	staff want security and care	workers may become dependent
democratic	the leader consults and the group shares decisions	skilled staff; complex problems	slow; needs good communication
laissez-faire	the leader leaves decisions to the workers	creative experts who need freedom	lack of direction; poor coordination
situational	the leader changes style to fit the task and the people	most real businesses	needs a very skilled leader

The best style depends on the situation: the task, the time available, the skills of the workers, and the culture of the business.



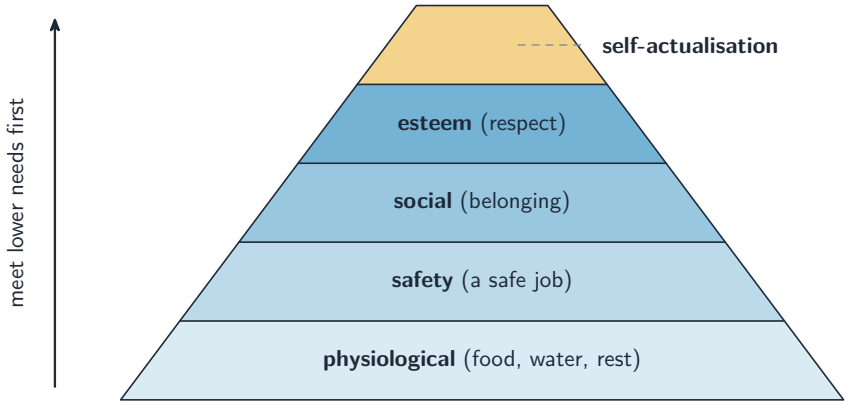
Leadership styles differ in how much decision-making the leader shares

Motivation and demotivation

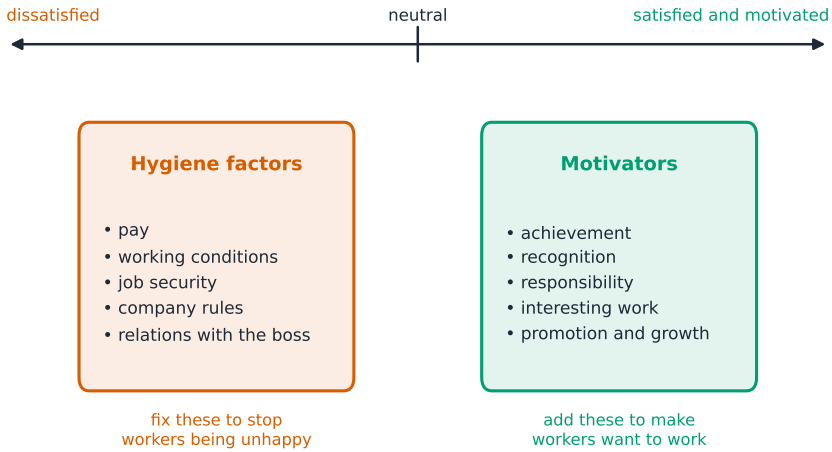
Motivation is the will to work hard and well. Motivated workers produce more, make fewer mistakes, and are less likely to leave. **Demotivation** shows up as absence, low effort and high labour turnover.

Content theories

- **Frederick Taylor**: workers are motivated mainly by money. He used **scientific management**: break each job into simple tasks, find the fastest method, and pay by output (**piece rate**). Critics say people want more than money, and repeated simple tasks are boring.
- **Abraham Maslow**: people have a **hierarchy of needs**. A lower need must be met before the next one motivates.
  At work: pay meets physiological needs; a safe job and a contract meet safety needs; teams meet social needs; praise and job titles meet esteem needs; challenging work meets **self-actualisation** needs. The order does not fit everyone: an artist may chase self-actualisation before security.
- **Frederick Herzberg**: two separate sets of factors. **Hygiene factors** such as pay and conditions do not motivate, but if they are poor, workers become unhappy. **Motivators** such as recognition and responsibility create real motivation.
- **David McClelland**: people are driven by three learned needs: the **need for achievement** (to do well), the **need for affiliation** (to be liked and belong) and the **need for power** (to influence others). Managers should match jobs to each person's strongest need.
- **Deci and Ryan**: **self-determination theory**. People are most motivated when they feel **autonomy** (control over their work), **competence** (being good at it) and **relatedness** (connection to others).



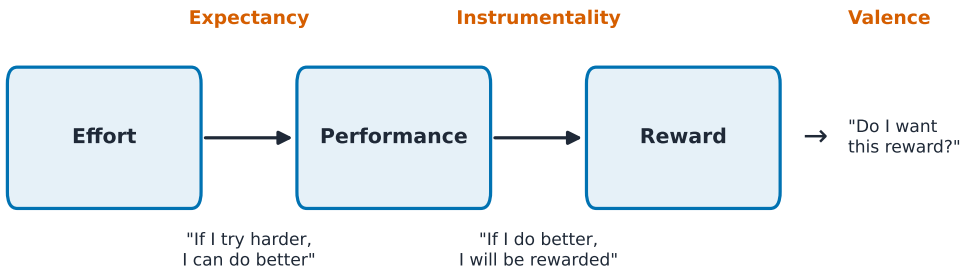
Maslow: lower needs are met first, from physiological to self-actualisation



Herzberg: fixing hygiene factors removes unhappiness; only motivators create motivation

Process theories (HL)

- **Equity theory** (Adams): workers compare what they put in (effort, skill, time) and what they get out (pay, praise) with other workers. If they feel it is unfair, they lose motivation, work less, or leave.
- **Expectancy theory** (Vroom): workers are motivated only if they believe that effort leads to better performance, that performance leads to a reward, and that the reward is worth having. If any one link breaks, motivation falls.



Expectancy theory: if any link is broken, extra effort seems pointless

Financial and non-financial rewards

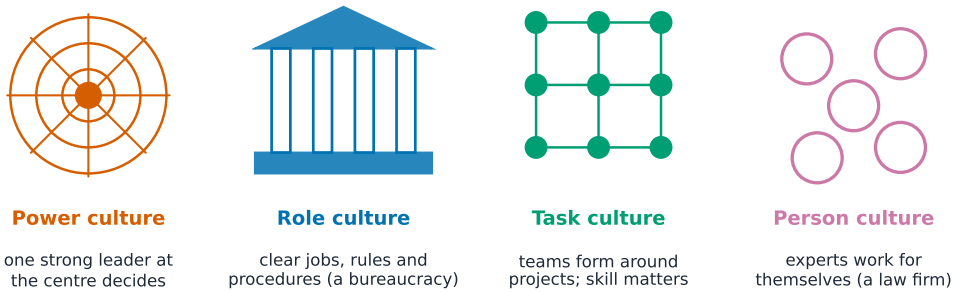
Financial rewards	Non-financial rewards
salary (a fixed yearly amount)	**job enrichment** : more challenging tasks and responsibility
wages paid by time or by output (piece rate)	**job rotation** : moving between tasks
commission : a share of the value of sales	**job enlargement** : more tasks at the same level
profit-related pay : a share of the firm's profit	**empowerment** : freedom to make decisions
performance-related pay : pay linked to targets	**purpose** : work that feels meaningful
employee share ownership	**teamwork**
fringe payments : free meals, health insurance, a car	

> **Worked example.** At the repair business, most of the 12 leavers were mechanics on piece rates. They felt their effort was wasted when spare parts arrived late. Herzberg would say late parts and pay disputes are hygiene failures to fix first. Expectancy theory (HL) says the link from effort to reward is broken. The owner fixes parts delivery, changes pay to a basic salary plus a team bonus, and starts formative appraisal. If turnover falls to 6 leavers a year, the rate becomes $6 \div 80 \times 100 = 7.5\%$, and the business saves the cost of six replacements.

Organisational culture (HL)

Organisational culture is the shared values, beliefs and habits of the people in a business: "the way we do things here". It shows in dress, language, office layout, stories about the founder, and how mistakes are treated.

Charles Handy described four types:



Handy's four cultures: power, role, task and person

- **Power culture** : one powerful person or small group at the centre controls everything. Decisions are fast, but depend on that person.
- **Role culture** : clear jobs, rules and procedures, as in a government office or a large bank. Stable, but slow to change.
- **Task culture** : teams form to solve problems; expertise matters more than rank. Flexible and creative, but hard to control.
- **Person culture** : individuals with their own expertise work under one roof, as in a law firm or a group of doctors.

Culture clashes happen when two cultures meet: after a merger or takeover, when a new leader arrives, or when a firm expands into another country. Clashes can cause conflict, lower motivation, staff leaving and poor decisions. Leaders influence culture strongly: what they reward, and how they behave, slowly becomes "the way we do things".

> **Worked example.** The repair business takes over a rival. The rival has a role culture with written procedures for every job. The repair business has a task culture of self-managing teams. The new mechanics feel lost without clear rules, and the original mechanics dislike the extra paperwork. This is a culture clash. The owner keeps a few simple written procedures, mixes the two groups in new teams, and explains what will and will not change.

Communication

Communication is the passing of information from a sender to a receiver.

- **Formal communication** follows official channels: meetings, reports, emails and notices.
- **Informal communication** happens outside them: chats and rumours (the **grapevine**). It is fast, but often wrong.

Barriers to communication include language and **jargon** (technical words others do not know), too much information, the wrong channel (bad news by email), physical distance and time zones, cultural differences, and lack of trust. A tall structure adds another barrier: messages change as they pass through many levels.

Employee and employer relations (HL)

Industrial relations are the relations between employers and employees. Conflict comes from pay, working conditions, job security, and change (new technology, new shifts, closures).

Employees usually act together through a **trade union**. Their methods include:

- **collective bargaining** : the union negotiates for all its members;
- **work-to-rule** : doing only exactly what the contract says;
- an **overtime ban**;
- a **strike** : stopping work completely.

Employers may respond with negotiation, changes to contracts, threats of closure or redundancy, or a **lock-out** (keeping workers out of the workplace).

Ways to settle conflict:

- **Conciliation** : a neutral third party helps the two sides talk and reach their own agreement.
- **Arbitration** : a neutral third party listens to both sides and then makes the decision. **Binding arbitration** must be accepted.
- **Employee participation** : workers have a say in decisions, for example through works councils.
- **No-strike agreements** : the union agrees not to strike, often in return for binding arbitration.

Conciliation keeps the decision with the two sides, so they are more likely to accept it. Arbitration is faster and gives a clear answer, but one side may feel it lost.

Checklist

- The role of HRM and workforce planning; labour turnover $= 12 \div 80 \times 100 = 15\%$ and its costs (2.1).
- Internal and external factors: demographic change, labour mobility, migration, flexi-time, teleworking and the gig economy (2.1).
- Recruitment steps, job description and person specification, internal against external; induction, on-the-job, off-the-job, cognitive and behavioural training; formative, summative, 360-degree and self-appraisal; dismissal against redundancy (2.1).
- HL resistance to change: self-interest, low tolerance, misinformation, different interpretation; strategies; managing against leading change (2.1).

- Span of control, levels, chain of command, delegation, centralisation, bureaucracy, delayering; tall against flat; by function, product or region; matrix; HL project-based and shamrock (2.2).
- Management functions; management against leadership; autocratic, paternalistic, democratic, laissez-faire and situational styles (2.3).
- Taylor, Maslow, Herzberg, McClelland, Deci and Ryan; HL equity and expectancy theory; financial and non-financial rewards; the turnover fix from 15% to 7.5% (2.4).
- HL culture: Handy's power, role, task and person cultures; culture clashes and the role of leaders (2.5).
- Formal and informal communication; the barriers (2.6).
- HL employee relations: sources of conflict; collective bargaining, work-to-rule, overtime bans, strikes, lock-outs; conciliation, arbitration, participation, no-strike agreements (2.7).

Finance and accounts (3.1-3.9)

International Baccalaureate · IB Diploma · Business Management · HL

Finance and accounts

IB Diploma Programme Business Management HL, Unit 3 *Finance and accounts* (first assessment 2024). This topic covers sections 3.1 to 3.9: why businesses need finance and where they get it, costs and revenues, final accounts, ratio analysis, cash flow, investment appraisal and budgets. Debt/equity ratio analysis (3.6), budgets (3.9), net present value, intangible assets and depreciation are HL only. The worked examples use the course's repair business in its second year as a company, so every number below fits with every other.

In 2017 the bike-sharing company ofo had millions of yellow bikes on the streets of Chinese cities and had raised billions of dollars from investors. By the end of 2018 it had spent most of that money, and more than ten million users were waiting in an online queue to get their deposits back. Customers liked the product. The company failed because cash ran out. This topic shows how a business plans its money, reads its accounts and checks whether a project is worth the cost.

Must-know for this topic:

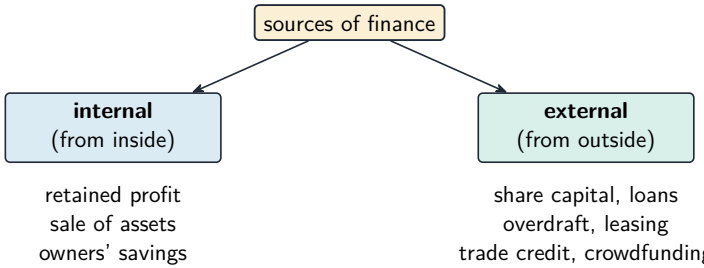
Idea	Key content
finance	capital against revenue expenditure; internal against external sources
final accounts	income statement; statement of financial position; HL depreciation
profitability	gross profit margin 40%, profit margin 15%, ROCE 25%
liquidity	current ratio 2.0, acid test 1.25
efficiency (HL)	stock turnover 15 times, debtor days 27, creditor days 25, gearing 44%
cash flow	profit is not cash; working capital cycle; forecast
appraisal	payback 3 years, ARR 8.3%; HL: NPV +18,600 at 6%
budgets (HL)	cost and profit centres; favourable and adverse variances

Finance and its sources

A business spends money in two ways.

- **Capital expenditure** buys **non-current assets**, things the business keeps for more than a year: a workshop, a machine, a van.
- **Revenue expenditure** pays for day-to-day running: wages, parts, rent and electricity.

The money for each should come from a source that fits. A long-term asset needs long-term finance. Paying for a new workshop with an overdraft is risky, because the bank can ask for the overdraft back at any time.



Internal finance comes from inside the business; external finance comes from outside

Internal finance comes from inside the business:

- **personal funds**: the owner's own savings, the main source for a sole trader;
- **retained profit**: profit kept in the business instead of being paid to the owners. It costs no interest, but a new or loss-making business has none;
- the **sale of assets** the business no longer needs, such as an old van.

External finance comes from outside:

Source	What it is	For and against
share capital	money from selling shares (companies only)	never repaid and no interest; the owners lose some control
loan capital	a bank loan repaid with interest over years	large sums; interest must be paid even in a bad year
overdraft	the bank lets the account go below zero	flexible and quick; expensive, and the bank can end it at any time
trade credit	suppliers let the business pay 30 to 60 days later	free; paying late harms the relationship
crowdfunding	many people each give a small amount online	also tests the idea; most campaigns fail to reach their target
leasing	renting equipment instead of buying it	no large payment; costs more in total

Source	What it is	For and against
microfinance	small loans to people that banks will not serve	helps very small and new businesses; amounts are small
business angels	rich individuals who invest and give advice	money plus experience; they want a share of the business

Sources are also short term (under a year: overdraft, trade credit), medium term (one to five years: leasing, most loans) or long term (over five years: share capital, long loans). To choose, a manager weighs the cost, the amount needed, how long it is needed for, control of the business, and how much the business has already borrowed.

> **Worked example.** The repair business built a second workshop for 120,000. Half came from retained profit and half from a five-year bank loan. The workshop will earn money for many years, so long-term finance fits. The monthly parts bill uses trade credit. For eleven days in December, when wages were paid before customers paid their bills, the business used its overdraft.

Costs, revenues and final accounts

Costs and revenues

- A **fixed cost** does not change with output: rent, salaries, insurance.
- A **variable cost** changes with output: car parts, paint, energy for the machines.
- A **semi-variable cost** has a fixed part and a variable part, such as a phone contract with a monthly charge plus a cost per call.

- A **direct cost** belongs to one product or department, such as the parts used in one repair. An **indirect cost**, or **overhead**, is shared, such as the manager's salary.

Total revenue is price × quantity sold. The repair business does 2,000 repairs a month at an average price of 25, so its revenue is $2{,}000 \times 25 \times 12 = 600{,}000$ a year. Many businesses also have other **revenue streams**: the repair business sells tyres, rents out its car wash and earns a fee from an insurance company for every customer it sends.

Final accounts

The **final accounts** are prepared at the end of each year. Many **stakeholders** read them: owners and shareholders check profit, banks check the business can repay, suppliers check it can pay its bills, employees check their jobs are safe, and the government checks tax.

The **income statement** shows how much profit the business made over the year.

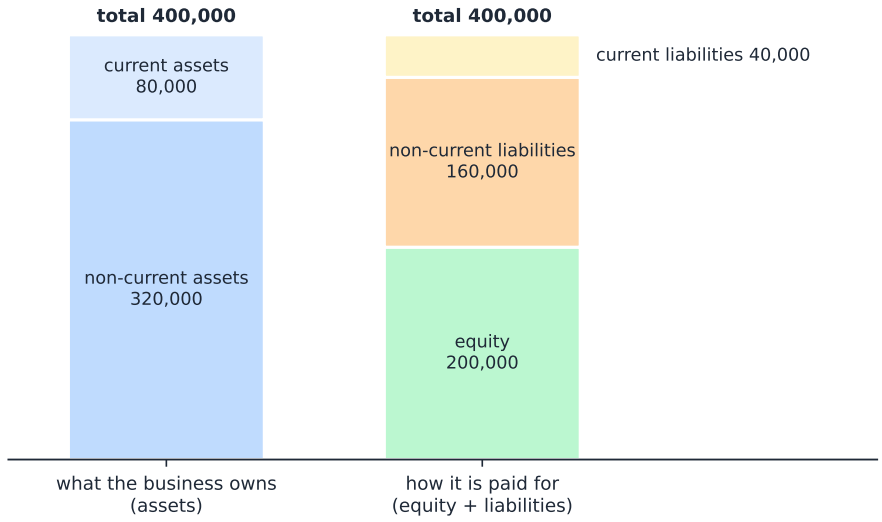
Income statement for the year	**$**
sales revenue	600,000
cost of sales	(360,000)
gross profit	240,000
expenses (wages, rent, marketing)	(150,000)
profit before interest and tax	90,000
interest	(10,000)
profit before tax	80,000
tax at 25%	(20,000)
profit for the period	60,000
dividends	(20,000)
retained profit	40,000

Brackets mean the number is taken away. **Cost of sales** is the direct cost of the repairs that were sold: opening stock 18,000, plus parts bought 372,000, minus closing stock 30,000, gives 360,000.

The **statement of financial position**, or balance sheet, is a picture of the business on one day: what it owns (**assets**), what it owes (**liabilities**) and the owners' money (**equity**).

Statement of financial position on 31 December	**$**
non-current assets: property 240,000; equipment 80,000	320,000
current assets: stock 30,000; debtors 45,000; cash 5,000	80,000
current liabilities: creditors 25,000; overdraft 5,000; short-term loan 10,000	(40,000)
net current assets (working capital)	40,000
non-current liabilities: bank loan	(160,000)
net assets	200,000
equity: share capital 120,000; retained earnings 80,000	200,000

Current assets turn into cash within a year. **Debtors** are customers who still owe money. **Current liabilities** must be paid within a year; **creditors** are suppliers the business still owes. Current assets minus current liabilities is **working capital**: $80{,}000 - 40{,}000 = 40{,}000$, the money available for day-to-day running. Net assets always equal equity, because everything the business owns is paid for either by borrowing or by the owners.



The balance sheet balances: total assets of 400,000 are paid for by equity, long-term debt and short-term debt

■ Intangible assets and depreciation (HL)

An **intangible asset** has value but cannot be touched: a brand, a **patent**, a copyright, a trademark, or **goodwill** (the extra a buyer pays for a business's reputation and customers). They are hard to value, and the value can fall fast after a scandal.

Depreciation is the fall in value of a non-current asset as it is used and gets older. It spreads the cost of the asset over its life and is counted as an expense each year. The repair business buys a diagnostic machine for 22,000. It expects to use it for 4 years and then sell it for 2,000, its **residual value**.

- **Straight-line method**: $\dfrac{\text{cost} - \text{residual value}}{\text{years of life}} = \dfrac{22{,}000 - 2{,}000}{4} = 5{,}000$ a year, the same every year.
- **Units of production method**: the machine is expected to do 20,000 tests in its life, so each test costs $(22{,}000 - 2{,}000) \div 20{,}000 = 1$. In a year with 6,000 tests, depreciation is 6,000. This method fits machines that are used more in some years than in others.

Profitability and liquidity ratios

Ratio analysis compares numbers from the final accounts so that a business can be compared with last year and with its rivals.

Profitability ratios measure profit against sales or against the money invested.

$$\text{gross profit margin} = \frac{\text{gross profit}}{\text{sales revenue}} \times 100 = \frac{240{,}000}{600{,}000} \times 100 = 40\%$$

$$\text{profit margin} = \frac{\text{profit before interest and tax}}{\text{sales revenue}} \times 100 = \frac{90{,}000}{600{,}000} \times 100 = 15\%$$

Capital employed is non-current liabilities plus equity: $160{,}000 + 200{,}000 = 360{,}000$.

$$\text{ROCE} = \frac{\text{profit before interest and tax}}{\text{capital employed}} \times 100 = \frac{90{,}000}{360{,}000} \times 100 = 25\%$$

The **return on capital employed** (ROCE) of 25% is far above the roughly 6% interest on the bank loan, so borrowing to invest has paid off. To raise profitability, a business can raise prices where customers are loyal, buy parts more cheaply, cut waste, or sell more of its high-margin services.

Liquidity ratios show whether the business can pay its short-term debts.

$$\text{current ratio} = \frac{\text{current assets}}{\text{current liabilities}} = \frac{80{,}000}{40{,}000} = 2.0$$

$$\text{acid test ratio} = \frac{\text{current assets} - \text{stock}}{\text{current liabilities}} = \frac{80{,}000 - 30{,}000}{40{,}000} = 1.25$$

A current ratio between 1.5 and 2 is usually safe. The **acid test ratio** leaves out stock, because stock may be slow to sell; a result above 1 is usually safe. Both results here are healthy. A ratio far above the safe range is not good either: money is sitting idle instead of earning a return. To improve liquidity, a business can sell old stock, collect money from debtors faster, or turn an overdraft into a long-term loan. Each step has a cost: discounts to sell stock lower profit, and pushing customers to pay faster may lose some of them.

Efficiency ratios and gearing (HL)

Efficiency ratios show how well the business manages its stock and its credit. Average stock is (opening stock + closing stock) $\div$ 2 = $(18{,}000 + 30{,}000) \div 2 =$ 24,000.

$$\text{stock turnover} = \frac{\text{cost of sales}}{\text{average stock}} = \frac{360{,}000}{24{,}000} = 15 \text{ times a year}$$

or, in days, $\dfrac{24{,}000}{360{,}000} \times 365 = 24.3$ days. The business sells and replaces its stock of parts about every 24 days. Faster **stock turnover** frees cash; too little stock means customers wait for parts.

$$\text{debtor days} = \frac{\text{debtors}}{\text{sales revenue}} \times 365 = \frac{45{,}000}{600{,}000} \times 365 = 27.4 \text{ days}$$

$$\text{creditor days} = \frac{\text{creditors}}{\text{cost of sales}} \times 365 = \frac{25{,}000}{360{,}000} \times 365 = 25.3 \text{ days}$$

Debtor days is how long customers take to pay; **creditor days** is how long the business takes to pay its suppliers. Here customers pay about two days more slowly than the business pays its suppliers, so the business pays out before it is paid. It could ask insurance companies to pay within 20 days, or ask suppliers for 45-day terms.

$$\text{gearing ratio} = \frac{\text{non-current liabilities}}{\text{capital employed}} \times 100 = \frac{160{,}000}{360{,}000} \times 100 = 44.4\%$$

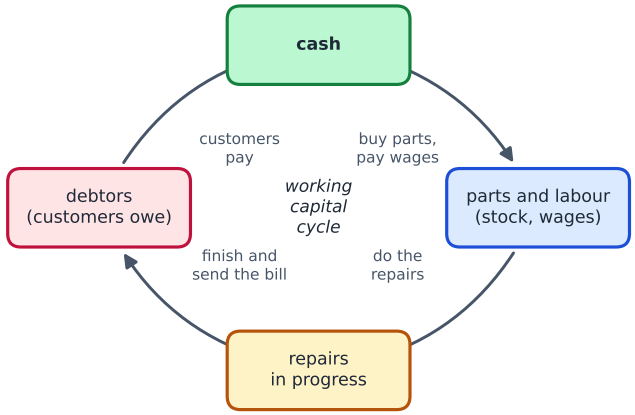
The **gearing ratio** shows how much of the long-term finance is borrowed. Above 50% a business is usually called highly geared. High gearing is risky: interest

must be paid even when sales fall, and banks may refuse more loans. When profit is strong, though, borrowing lets the owners earn more without giving away shares. At 44.4% the repair business is close to the line, so its next project should be paid for with share capital or retained profit, not another loan.

Cash flow

Profit and **cash flow** are different. Profit is revenue minus costs for the year. Cash flow is the money that actually comes in and goes out, and when. A repair finished on 28 December counts as revenue in December, but if the customer pays in February, the cash arrives in February. A profitable business can still fail if it has no cash to pay wages and suppliers. A business with cash can survive a loss-making year.

The **working capital cycle** is the time between paying for inputs and receiving cash from customers.



The longer the working capital cycle, the more cash the business needs to keep running

Businesses hold cash for three reasons: to pay day-to-day bills, to keep a safety reserve for surprises, and to take chances when they come, such as a supplier's discount for buying in bulk.

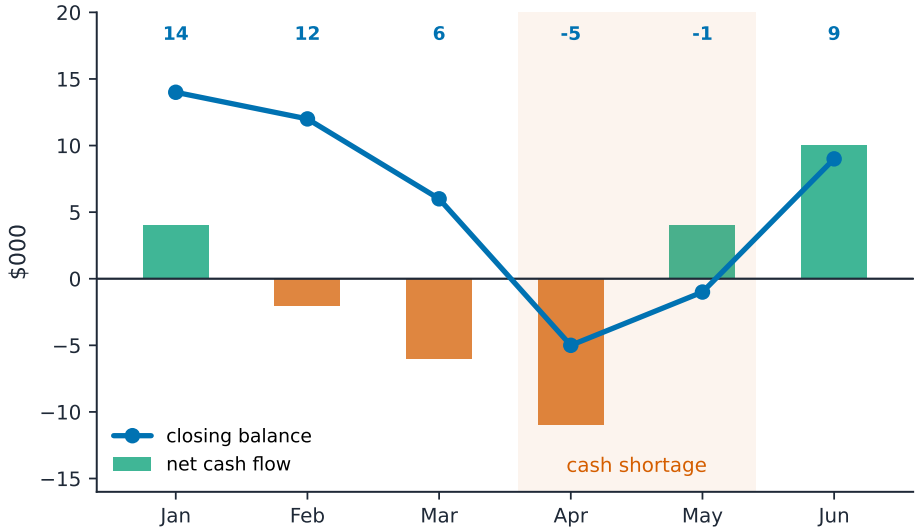
A **cash flow forecast** shows the cash a business expects to receive and pay out, month by month. Each month:

- net cash flow = cash in − cash out;
- closing balance = opening balance + net cash flow;
- the closing balance becomes next month's opening balance.

Worked example. The repair business forecasts the first half of next year (in $000).

	Jan	Feb	Mar	Apr	May	Jun
opening balance	10	14	12	6	−5	−1
cash in	46	44	42	44	50	54
cash out	42	46	48	55	46	44
net cash flow	4	−2	−6	−11	4	10
closing balance	14	12	6	−5	−1	9

In April the yearly insurance and a large parts order are paid in the same month, and the balance falls to −5,000. The forecast shows the problem in January, so the manager has three months to arrange an overdraft or move a payment.



The closing balance falls below zero in April and May: the forecast warns of a cash shortage three months early

A forecast is only as good as its guesses. Sales may be lower than expected, customers may pay late, and costs may rise. Managers should change it as new information comes in.

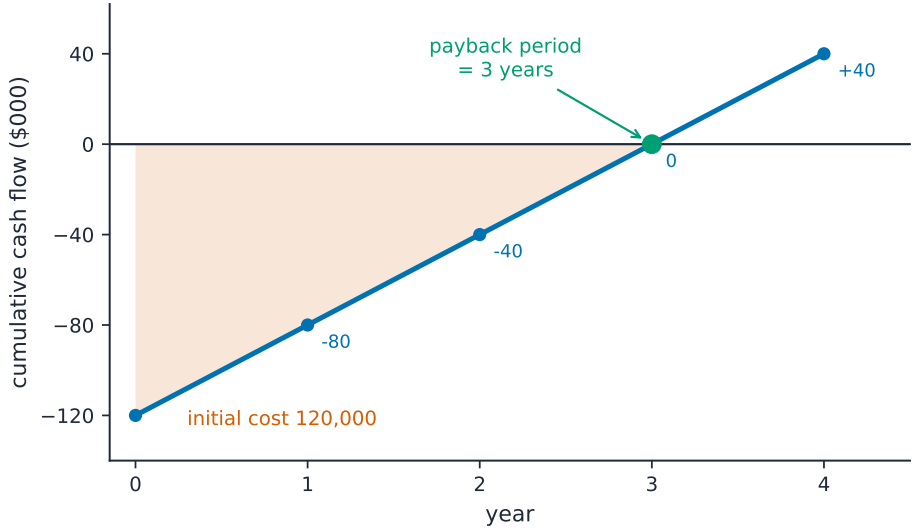
A business can deal with a cash flow problem in three ways:

Approach	Examples	Drawback
reduce cash outflows	delay buying new equipment; lease instead of buy; ask suppliers for longer credit	old equipment may break; suppliers may refuse
improve cash inflows	ask customers to pay faster; offer a discount for paying cash; sell old stock	discounts lower profit; customers may go elsewhere
find more finance	overdraft; short-term loan; sell an asset	interest costs; the asset may be needed later

Investment, profit and cash flow are linked. A new workshop uses a lot of cash now and earns profit only later, so even a good investment can cause a cash shortage in its first months.

Investment appraisal

Investment appraisal checks whether a capital project is worth its cost. The repair business plans a third workshop. It costs 120,000 and should bring in a net cash flow of 40,000 a year for four years.



The third workshop pays back its 120,000 cost after exactly three years

The **payback period** is the time a project takes to earn back its cost. After three years the workshop has earned $3 \times 40{,}000 = 120{,}000$, so the payback period is 3 years. If the cash flow is not the same each year, add the years until the total covers the cost, then work out the part year: $\text{months} = \dfrac{\text{amount still needed}}{\text{cash flow in that year}} \times 12$. Payback is simple and shows risk, because money that comes back sooner is safer. It ignores everything that happens after the payback date.

The **average rate of return** (ARR) is the average yearly profit as a percentage of the cost.

$$\text{ARR} = \frac{(\text{total returns} - \text{capital cost}) \div \text{years of use}}{\text{capital cost}} \times 100 = \frac{(160{,}000 - 120{,}000) \div 4}{120{,}000} \times 100 = 8.3\%$$

ARR uses all the years of the project and can be compared with the interest rate on a loan. It ignores timing: 40,000 received in year 4 is treated the same as 40,000 received in year 1.

■ Net present value (HL)

Money received in the future is worth less than money today, because money today could be saved and earn interest. **Net present value** (NPV) turns each future cash flow into its value today with a **discount factor**, then subtracts the cost. At a discount rate of 6%:

Year	Net cash flow	Discount factor (6%)	Present value
1	40,000	0.943	37,720
2	40,000	0.890	35,600
3	40,000	0.840	33,600
4	40,000	0.792	31,680
		total	138,600

NPV = 138,600 − 120,000 = +18,600. A positive NPV means the project earns more than the 6% the money could earn elsewhere, so it is worth doing. NPV counts timing, but the result depends on the discount rate chosen, and it is harder to explain to non-specialists.

All three methods depend on forecasts of cash flow, which may be wrong. Managers also weigh things the numbers leave out: the effect on staff, the business's image, and the risk that a rival opens nearby.

Budgets (HL)

A **budget** is a financial plan for a future period, such as next year's sales or costs for one workshop. A forecast predicts what will happen; a budget sets a target for what should happen. Budgets help a business plan, share out resources, give managers clear targets, and check results.

A **cost centre** is a part of the business whose costs are recorded, such as the repair business's IT department. A **profit centre** has both costs and revenues recorded, so its profit can be measured, such as each workshop. Profit

centres show which parts do well, but they can make managers compete with each other instead of working together.

A **variance** is the difference between the budget and the actual result. It is **favourable** (F) when it raises profit and **adverse** (A) when it lowers profit.

> **Worked example.** Workshop 3, one month:

	Budget	**Actual**	**Variance**
repairs	520 at 25	560 at 24	
revenue	13,000	13,440	440 F
parts	4,160	4,760	600 A
wages	5,000	4,900	100 F
profit	3,840	3,780	60 A

Revenue rose because the workshop cut its price to win more repairs. But the extra repairs needed more parts, and parts became dearer, so profit is 60 below budget. A manager should find the cause of each variance before acting: was the price cut a good decision, or did parts cost more because of a new supplier? Used this way, budgets and variances feed back into the business's plans for next year.

Checklist

- Capital and revenue expenditure; internal sources (personal funds, retained profit, sale of assets) and eight external sources; short, medium and long term; matching the source to the need (3.1–3.2).
- Fixed, variable, semi-variable, direct and indirect costs; total revenue and revenue streams (3.3).
- The income statement from sales revenue 600,000 to retained profit 40,000; the statement of financial position with net assets and equity of 200,000; who reads the accounts. HL: intangible assets; straight-line depreciation 5,000 a year and units of production 1 per test (3.4).
- Gross profit margin 40%, profit margin 15%, ROCE 25%; current ratio 2.0, acid test 1.25; ways to improve each (3.5).
- HL: stock turnover 15 times (24.3 days), debtor days 27.4, creditor days 25.3, gearing 44.4%; ways to improve each (3.6).
- Profit against cash flow; the working capital cycle; the January–June forecast with its −5,000 in April; three ways to fix a cash problem (3.7).
- Payback 3 years, ARR 8.3%; HL: NPV +18,600 at 6%; what each method can and cannot show (3.8).
- HL: budgets, cost and profit centres, the variance table with its 60 A profit variance (3.9).

Paper 2 tests the calculations: write the formula, put in the numbers and give the answer with its unit, then say what it means for the business. Paper 1 asks about sources of finance and cash flow in the case-study business. All numbers here are original.

Marketing (4.1-4.6)

International Baccalaureate · IB Diploma · Business Management · HL

Marketing

IB Diploma Programme Business Management HL, Unit 4 *Marketing* (first assessment 2024). This topic covers sections 4.1 to 4.6: the role of marketing, marketing planning, sales forecasting (HL), market research, the seven Ps of the marketing mix, and international marketing (HL). The worked examples use the course's repair business. Its city has a market of 8,000 car repairs a month, and the business does 2,000 of them.

Luckin Coffee opened its first shop in Beijing in 2017. Within two years it had more shops in China than Starbucks. It did not win with better coffee alone. It used an app for every order, small pick-up shops instead of big cafés, and large discounts to win first-time buyers. Every one of those choices is a marketing decision: product, price, place and promotion. This topic shows how a business decides who its customers are and how to reach them.

Must-know for this topic:

Idea	Key content
orientation	market orientation against product orientation
market share	$\frac{\text{firm's sales}}{\text{total market sales}} \times 100$: $2{,}000 \div 8{,}000 \times 100 = 25\%$
planning	segmentation, targeting, positioning; position map; USP
forecasting (HL)	three-part moving average; seasonal variation = actual − trend
research	primary and secondary; qualitative and quantitative; sampling
the 7Ps	product, price, promotion, place, people, processes, physical evidence
international (HL)	reasons; entry methods; standardise or adapt

The role of marketing

Marketing means finding out what customers want and supplying it at a profit. It links the business to its customers.

- A business with **market orientation** starts with customers: it researches what they want, then makes it. This is the usual approach today, because tastes change fast.
- A business with **product orientation** starts with the product: it makes what it is good at, then tries to sell it. This can work for new technology, where customers do not yet know what they want, but it is risky.

Social enterprises market too, but their aim may be to change behaviour (for example, to make people recycle) rather than to earn profit.

Market share is a firm's sales as a percentage of the whole market's sales.

> **Worked example.** The city's garages do 8,000 repairs a month, and the repair business does 2,000. Its market share = $2{,}000 \div 8{,}000 \times 100 = 25\%$. If the market grows to 10,000 repairs and the business does 2,400, its sales rise by 20% but its market share falls to 24%. Rivals grew faster.

A high market share brings economies of scale, a strong brand and power over suppliers. The firm with the largest share is the **market leader**.

Marketing planning

A **marketing plan** sets out the marketing objectives, the target market, the marketing mix, the budget and how success will be measured. Marketing objectives must fit the business's main objectives: for example, "raise market share from 25% to 30% in two years".

Segmentation, targeting and positioning

1. **Segmentation**: dividing a market into groups of customers with similar needs. Common ways: by **demographics** (age, income, gender), by geography, and by **psychographics** (lifestyle, values, interests).
2. **Targeting**: choosing which segments to serve. A **niche market** is a small, specialised segment; a **mass market** is a large one with similar needs.
3. **Positioning**: deciding how the product should be seen compared with rivals in the customer's mind.

A **position map** (perception map) places rival products on two features that customers care about, such as price and quality. It shows where competition is crowded and where there is a gap.



A position map shows where rivals compete and where gaps exist

A gap is not always a chance: there may be no customers there, or it may cost too much to serve. A business stands out through its **unique selling point** (USP): something rivals do not offer. The repair business's USP is a 24-hour repair promise with a free replacement car.

The **Ansoff matrix** (from the business management toolkit) shows four growth strategies and their risk:

	Existing products	New products
Existing markets	**Market penetration** sell more to the same market	**Product development** new product, same market
New markets	**Market development** same product, new market	**Diversification** new product, new market (riskiest)

Exam: risk rises toward diversification — new product × new market is highest risk

Ansoff matrix: risk rises from market penetration to diversification

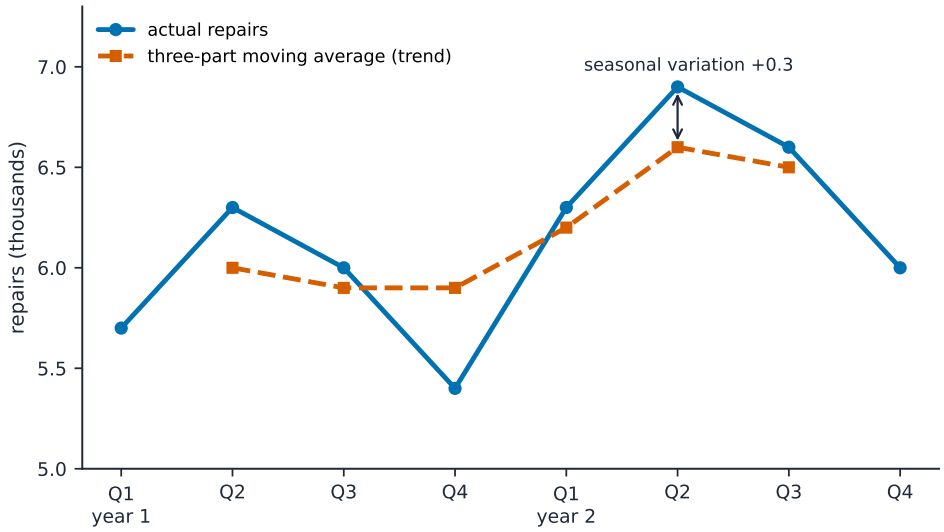
Sales forecasting (HL)

A **sales forecast** predicts future sales. It helps the business plan its stock, staff, cash flow and production. A common method is the **moving average** : the average of a fixed number of periods, moved forward one period at a time. It smooths out short-term ups and downs so that the **trend** is clear.

> **Worked example.** The repair business's quarterly repairs (in thousands):

Quarter	Y1 Q1	Y1 Q2	Y1 Q3	Y1 Q4	Y2 Q1	Y2 Q2	Y2 Q3	Y2 Q4
repairs	5.7	6.3	6.0	5.4	6.3	6.9	6.6	6.0
three-part moving average		6.0	5.9	5.9	6.2	6.6	6.5	
seasonal variation		+0.3	+0.1	−0.5	+0.1	+0.3	+0.1	

1. The first three-part moving average is $(5.7 + 6.3 + 6.0) \div 3 = 6.0$. It is placed in the middle quarter, Y1 Q2.
2. The next is $(6.3 + 6.0 + 5.4) \div 3 = 5.9$, placed in Y1 Q3, and so on.
3. The **seasonal variation** is the actual value minus the trend: in Y2 Q2, $6.9 - 6.6 = +0.3$. Repairs are above trend in the second quarter and below it in the fourth.



The moving average shows the trend; actual sales swing around it with the seasons

Besides seasonal variation, sales show **cyclical variation** (the business cycle) and **random variation** (one-off events such as a flood). Forecasts

are only as good as the past data. A new competitor or a recession can make any forecast wrong.

Market research

Market research collects information about customers, competitors and markets to reduce the risk of decisions.

- **Primary research** collects new data for the business's own purpose: **surveys**, interviews, **focus groups** (a small group discussing a product), observation and test marketing. It fits the question exactly and is up to date, but it is slow and costly.
- **Secondary research** uses data that already exists: government statistics, industry reports, newspapers, competitors' websites and the firm's own sales records. It is quick and cheap, but it may be out of date or collected for another purpose.

Quantitative data is numbers ("62% of drivers service their car once a year"). **Qualitative data** is opinions and reasons ("drivers distrust garages that do not explain the fault"). Good research uses both.

Researchers usually ask a **sample** instead of everyone:

Sampling method	How it works	Weakness
random sampling	everyone has an equal chance of being chosen	needs a full list of the population
stratified sampling	the sample matches the population's groups (age, area)	needs data on the groups
quota sampling	the researcher fills a set number from each group	not random, so bias is possible
convenience sampling	whoever is easy to reach	often unrepresentative
snowballing	each person suggests others	biased towards one social circle

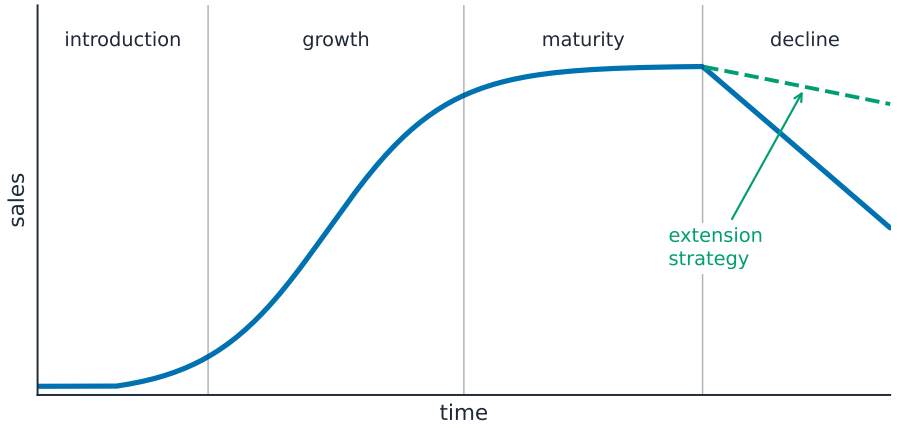
Sampling error happens when the sample does not represent the population, often because it is too small. Research can also be biased by leading questions. And collecting customer data online raises ethical questions about privacy and consent.

The seven Ps of the marketing mix

The **marketing mix** is the set of decisions a business makes to sell its product. For goods there are four Ps: product, price, promotion and place. Services add three more: people, processes and physical evidence. All seven must fit together: a premium brand with a very low price confuses customers.

Product

The **product life cycle** shows the stages of a product's sales over time:



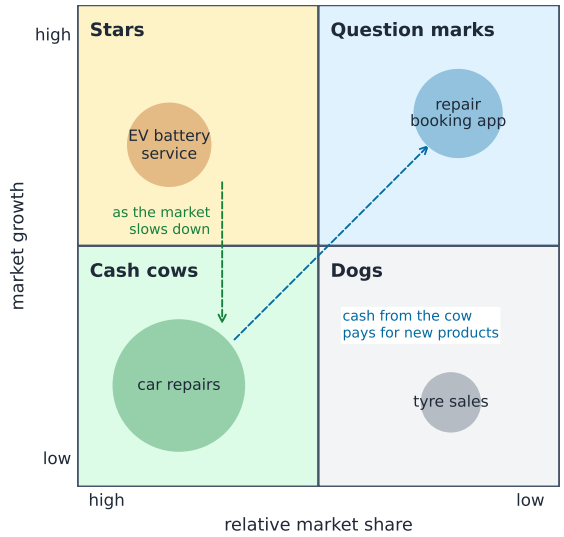
introduction → growth → maturity → decline (sales over time)

Sales through introduction, growth, maturity and decline; an extension strategy can delay the decline

Stage	Sales	Cash flow	Typical marketing
development	none	negative	research and testing
introduction	low, slow growth	negative	heavy promotion; skimming or penetration price
growth	rising fast	turning positive	more outlets; build the brand
maturity	high, levelling off	strongly positive	compete on price and features; extension strategies
decline	falling	falling	cut costs, then withdraw

Extension strategies delay the decline: a new feature, a new design, a new market, or a new use.

The **Boston Consulting Group matrix** (BCG matrix) looks at a firm's whole range of products, its **product portfolio**, using market growth and relative market share:



The repair business's products on the Boston matrix: the cash cow pays for the star and the question mark

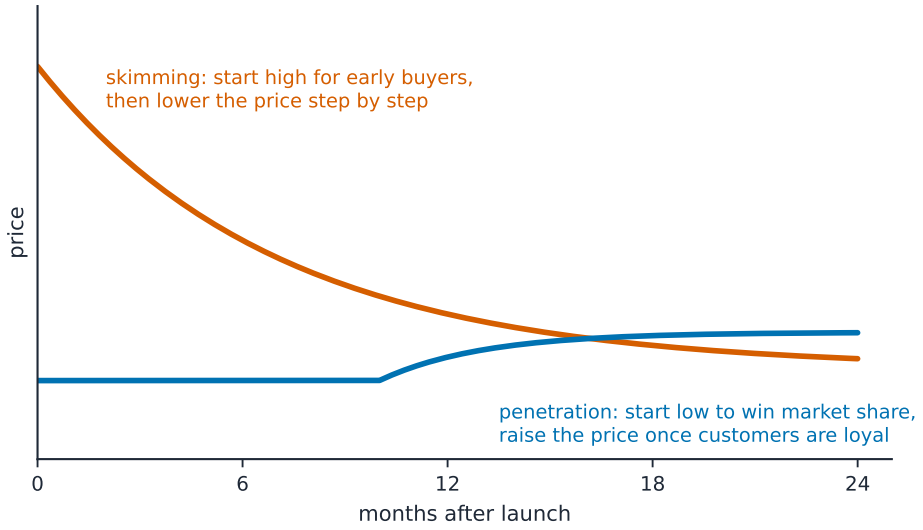
- **Stars** : high share of a fast-growing market. They need cash to keep growing. *EV battery servicing.*
- **Cash cows** : high share of a slow-growing market. They earn more cash than they need. *Ordinary car repairs.*
- **Question marks** : low share of a fast-growing market. Invest to build share, or drop them. *The new repair booking app.*
- **Dogs** : low share of a slow-growing market. Usually sold or closed. *Tyre sales, where large chains are much cheaper.*

A balanced portfolio uses the cash from cows to turn question marks into stars, which later become the next cash cows.

Branding gives a product a name, logo and identity. A strong brand builds **brand loyalty** and lets the firm charge more. Packaging protects the product, but also informs and attracts buyers.

Price

Pricing method	How it works	When it is used
cost-plus pricing	average cost plus a fixed percentage	simple; common in shops
penetration pricing	a low price at launch to win market share	mass markets; new firms
price skimming	a high price at launch, lowered over time	new technology with keen early buyers
psychological pricing	prices such as 99 instead of 100	consumer goods
loss leader	one item sold below cost to bring in customers	supermarkets
price discrimination	different prices for different groups for the same product	cinemas, airlines, student discounts
dynamic pricing	prices change with demand in real time	ride-hailing apps, hotels
competitive pricing	prices set close to rivals'	many similar products
contribution pricing	price covers the variable cost and adds something towards fixed costs	spare capacity



Skimming and penetration pricing move in opposite directions after launch

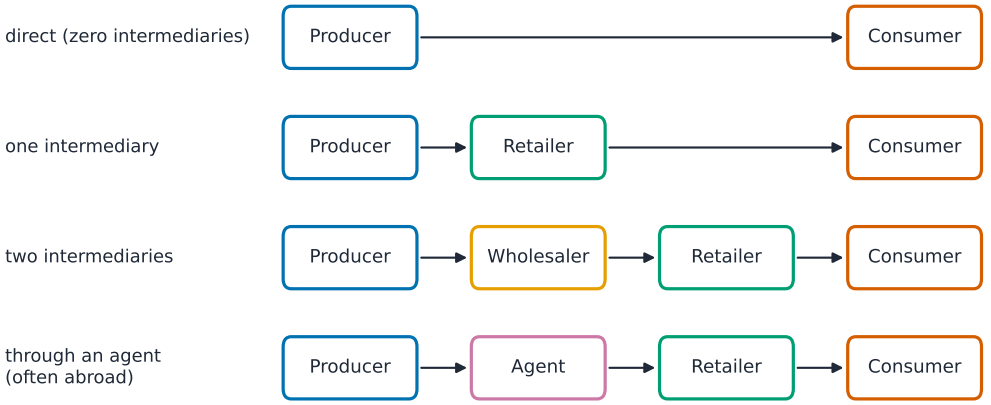
Promotion

- **Above-the-line promotion** uses paid mass media: television, newspapers, cinema, billboards and online adverts. It reaches many people, but it is costly and hard to target.
- **Below-the-line promotion** is targeted and often cheaper: sales promotions (discounts, free gifts), sponsorship, direct marketing, personal selling and **public relations** (PR).
- **Social media marketing** uses platforms such as WeChat, Douyin and Instagram. It is cheap and two-way, and messages can go viral, but bad comments spread just as fast.
- **Guerrilla marketing** uses surprising, low-cost stunts in public places to get attention.

The **promotional mix** is the combination a business chooses.

Place

Place is how the product reaches the customer. A **distribution channel** is the path from producer to consumer.



Each intermediary adds reach but takes a share of the price

Each **intermediary** (wholesaler, retailer or agent) adds reach and convenience, but takes part of the profit and reduces the producer's control. Selling online (**e-commerce**) lets even small firms sell directly to customers far away.

People, processes and physical evidence

- **People**: the staff who deal with customers. In a service, the mechanic who explains a fault clearly is part of the product.
- **Processes**: how the service is delivered: online booking, waiting times, how complaints are handled.
- **Physical evidence**: what customers can see: a clean workshop, uniforms, a clear invoice, online reviews.

International marketing (HL)

Firms market abroad to find new customers when the home market is **saturated** (full), to spread risk across countries, to gain economies of scale, and to extend a product's life cycle.

Entry methods, from lowest risk and control to highest:

Entry method	How it works	Risk and control
exporting	sell goods made at home to foreign buyers	lowest risk, least control
licensing and franchising	a foreign firm uses the brand or patent for a fee	low cost; less control over quality
joint venture	share a new business with a local partner	shared risk, local knowledge; possible conflict
direct investment or acquisition	build or buy a business abroad	full control; highest cost and risk

A key choice is whether to **standardise** the marketing mix (the same product and message everywhere, which saves money) or to **adapt** it to local tastes, laws, language and culture. Many firms "think global, act local": KFC in China serves rice dishes, soy milk and youtiao for breakfast, while keeping its global brand. Firms must also manage exchange-rate changes, different laws, and cultural differences that can make an advert offensive in another country.

Checklist

- Marketing; market against product orientation; marketing in social enterprises; market share 2,000 ÷ 8,000 = 25% and why share can fall as sales rise; market leadership (4.1).
- The marketing plan; segmentation by demographics, geography and psychographics; targeting niche and mass markets; positioning, position maps and the USP; the Ansoff matrix (4.2).
- HL sales forecasting: three-part moving averages (6.0, 5.9, …), seasonal variation as actual minus trend (+0.3 in Y2 Q2), cyclical and random variation, and the limits of forecasts (4.3).
- Primary and secondary research; qualitative and quantitative data; random, stratified, quota, convenience and snowball sampling; sampling error and ethics (4.4).
- The seven Ps: the product life cycle and extension strategies; the BCG matrix with stars, cash cows, question marks and dogs; branding; the nine pricing methods; above- and below-the-line, social media and guerrilla promotion; distribution channels and intermediaries; people, processes and physical evidence (4.5).
- HL international marketing: reasons; exporting, licensing and franchising, joint ventures and direct investment; standardise against adapt (4.6).

Operations management (5.1-5.9)

International Baccalaureate · IB Diploma · Business Management · HL

Operations management

IB Diploma Programme Business Management HL, Unit 5 *Operations management* (first assessment 2024). This topic covers sections 5.1 to 5.9: the role of operations, operations methods, lean production and quality (HL), location, break-even analysis, production planning (HL), crisis management (HL), research and development (HL) and management information systems (HL). The worked examples use the course's repair business, and the numbers fit Unit 3: each repair sells for 25 on average, uses 15 of parts and direct labour, and fixed costs are 12,500 a month.

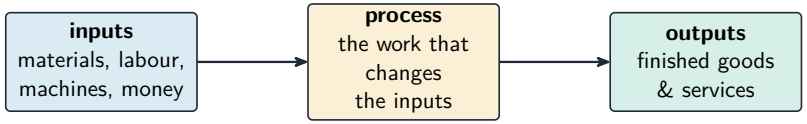
In March 2011 a huge earthquake and tsunami hit north-east Japan. Many of Toyota's suppliers stopped work. Toyota was famous for holding very little stock, so within days some of its factories in Japan and abroad had no parts, and output stayed low for months. Toyota did not give up its low-stock system. Instead it built a database of every supplier behind its suppliers, so it could act faster next time. This topic is about how a business makes its products, and the choices behind that: how much stock to hold, where to produce, and how to plan for things going wrong.

Must-know for this topic:

Idea	Key content
operations	inputs → process → outputs; links to finance, HR and marketing
methods	job, batch, mass/flow, mass customisation
lean and quality (HL)	kaizen, JIT, kanban, andon; cradle to cradle; quality control against quality assurance; TQM
location	reasons; outsourcing, offshoring, insourcing, reshoring
break-even	contribution 10; break-even 1,250 repairs; margin of safety 750
planning (HL)	JIT and JIC; reorder level 1,200; capacity 80%; defect rate 2.5%; make or buy
crisis, R&D, MIS (HL)	contingency planning; four types of innovation; data and ethics

The role of operations and operations methods

Operations management is the part of a business that makes its goods or provides its services. It turns **inputs** (labour, materials, machines, money and information) into **outputs** that are worth more than the inputs. The extra value is **value added**.



the output is worth more than the inputs ⇒ value added

Inputs are transformed into outputs worth more than the inputs: value added

Operations links to every other part of the business. Marketing says what customers want; finance pays for the machines; human resources finds the skilled staff. Operations must also be sustainable: a workshop that recycles oil and old tyres cuts its costs and its harm to the environment.

There are four main **operations methods**:

Method	What it is	Example	For and against
job production	one item made to a customer's order	restoring a classic car	high quality and high prices; slow, skilled staff, high cost per unit
batch production	a group of identical items, then a switch to the next group	servicing 40 taxis from one company in one week	some variety, lower cost; time is lost when switching between batches
mass production (flow)	the same item made without stopping	a car factory line	lowest cost per unit; expensive to set up, little choice, boring work
mass customisation	flow-line speed, but each customer chooses features	a car ordered online in your choice of colour and wheels	choice at a low cost; needs flexible machines and good data

Lean production and quality management (HL)

Lean production means using fewer resources, cutting waste and making the business more efficient. Waste includes making too much, waiting, moving things around, holding too much stock, and faulty work. The main methods are:

- **kaizen**: continuous improvement in many small steps. Every worker suggests better ways of doing the job.
- **just-in-time** (JIT): parts arrive just when they are needed, so almost no stock is held.
- **kanban**: a card or signal that tells the earlier stage to send more parts. When a box of brake pads is empty, its card goes back to the store and a new box comes.
- **andon**: a signal, often a light or a cord, that any worker can use to stop the line when there is a problem, so faults are fixed at once.

Cradle to cradle design plans products so that, at the end of their life, every part can be reused or recycled. Nothing becomes waste.

Quality means meeting customers' expectations. There are two approaches:

- **Quality control** checks the finished product and rejects faulty ones. It finds faults after they happen, so the work is wasted.
- **Quality assurance** builds quality into every stage, so faults do not happen in the first place. It is usually cheaper in the long run.

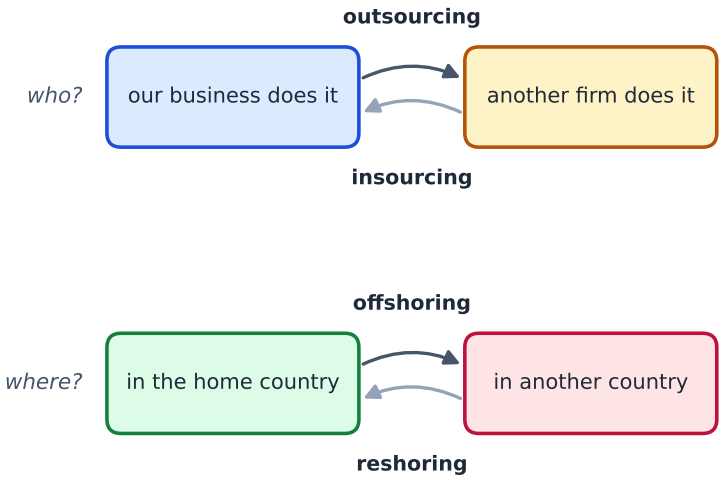
Ways to manage quality include **quality circles** (small groups of workers who meet to solve quality problems), **benchmarking** (comparing your methods with the best firm in the industry and copying what works), and **total quality management** (TQM), where everyone in the business is responsible for quality, all the time. Businesses can also meet national and international quality standards. ISO 9001 is the best-known international standard for quality management; in China, many products need the CCC mark before they can be sold. Standards build trust with customers, but meeting them takes time and money.

Location

Businesses choose a location by weighing:

- costs: land, rent, wages and transport;
- the labour available and its skills;
- nearness to customers (most important for services, such as repairs) and to suppliers (important for heavy materials);
- infrastructure: roads, ports, power and internet;
- government: taxes, grants, rules and political stability;
- culture and language, for a business moving abroad.

A business can also change who does the work and where.



Outsourcing and insourcing change who does the work; offshoring and reshoring change where

- **Outsourcing** (subcontracting) gives a task to another firm, such as the repair business paying a firm to run its booking app. It is often cheaper and uses the other firm's skills, but the business loses some control over quality.
- **Offshoring** moves work to another country, for lower costs or to be near new markets.
- **Insourcing** brings an outsourced task back inside the business, usually for better control or quality.
- **Reshoring** brings work back to the home country, often after supply problems abroad.

Break-even analysis

Contribution per unit is the price minus the variable cost per unit. It is the amount each sale adds towards paying the fixed costs.

$$\text{contribution per unit} = 25 - 15 = 10$$

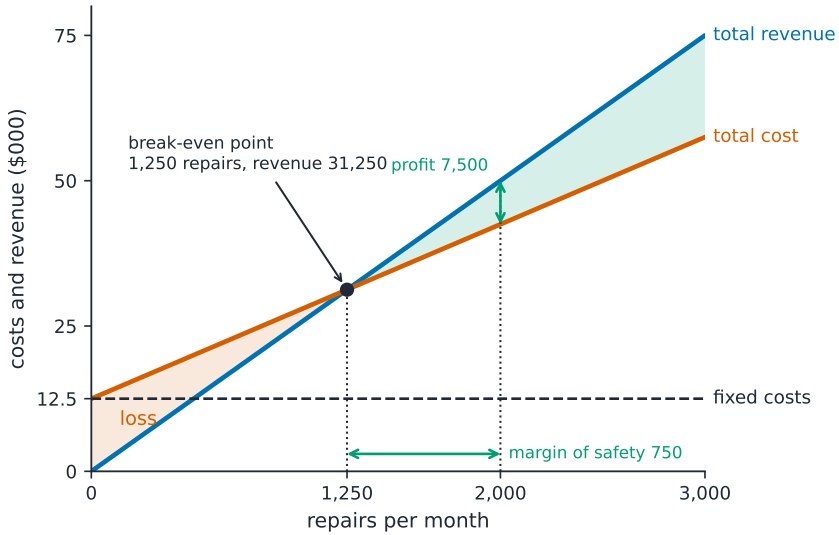
Total contribution is contribution per unit $\times$ output. At 2,000 repairs a month it is $2{,}000 \times 10 = 20{,}000$. Profit is total contribution minus fixed costs: $20{,}000 - 12{,}500 = 7{,}500$ a month.

The **break-even** output is where total revenue equals total cost, so there is no profit and no loss.

$$\text{break-even output} = \frac{\text{fixed costs}}{\text{contribution per unit}} = \frac{12{,}500}{10} = 1{,}250 \text{ repairs a month}$$

The **margin of safety** is how far sales can fall before the business makes a loss.

$$\text{margin of safety} = \text{actual output} - \text{break-even output} = 2{,}000 - 1{,}250 = 750 \text{ repairs}$$



Break-even at 1,250 repairs a month; at 2,000 repairs the margin of safety is 750 repairs

A business can also work out the output or price it needs for a **target profit**:

- target output $= \dfrac{\text{fixed costs} + \text{target profit}}{\text{contribution per unit}}$. For a profit of 15,000: $(12{,}500 + 15{,}000) \div 10 = 2{,}750$ repairs.
- target price $= \dfrac{\text{fixed costs} + \text{target profit}}{\text{output}} + \text{variable cost per unit}$. For a profit of 10,000 at 2,000 repairs: $(12{,}500 + 10{,}000) \div 2{,}000 + 15 = 26.25$.

> **Worked example: a change in price and cost.** The business raises its price to 27, so contribution rises to 12. In the same month the rent rises by 3,000, so fixed costs become 15,500. The new break-even output is $15{,}500 \div 12 = 1{,}291.7$, which rounds up to 1,292 repairs. If sales stay at 2,000, profit rises to $2{,}000 \times 12 - 15{,}500 = 8{,}500$, but the margin of safety falls from 750 to 708. If the higher price drives some customers away, the business is closer to a loss than before.

Break-even analysis is quick and easy to show on a chart, and it helps when planning prices or a new product. But it assumes that every unit made is sold, that the price and the variable cost per unit stay the same at every output, and that fixed costs never change. In real life, buying in bulk lowers variable costs, a bigger output may need a new workshop, and sales forecasts can be wrong.

Production planning (HL)

A **supply chain** is every step from raw materials to the final customer. A local supply chain is short and easier to control; a global one is often cheaper but longer, so there is more that can go wrong.

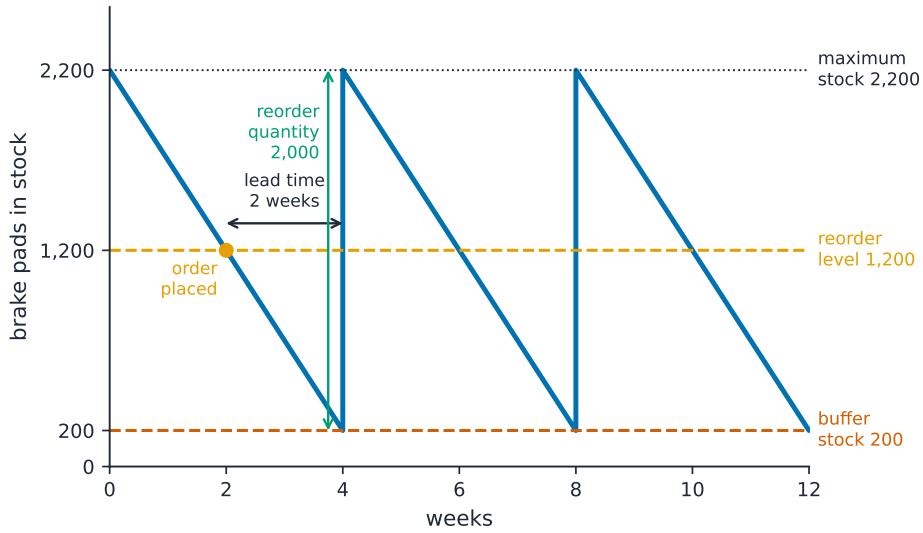
Businesses choose between two ways of holding stock. With just-in-time (JIT), parts arrive only when needed; this saves storage costs and money tied up in stock, but one late delivery can stop work. With **just-in-case** (JIC), the business keeps a large **buffer stock** for emergencies; this protects production but costs more to store, and stock can go out of date.



Just-in-time holds almost no stock; just-in-case holds a buffer

A **stock control chart** shows how stock falls as it is used and rises when a delivery arrives. The repair business uses 500 brake pads a week. A delivery takes 2 weeks to arrive (the **lead time**), and it keeps a buffer stock of 200.

- **Reorder level** = buffer stock + usage × lead time = $200 + 500 \times 2 = 1{,}200$. When stock falls to 1,200, the business orders more.
- **Reorder quantity** = the amount ordered each time, here 2,000.
- Maximum stock = buffer stock + reorder quantity = 2,200.



The order is placed at 1,200 and arrives two weeks later, just as stock reaches the buffer of 200

Operations managers measure their work with these ratios:

$$\text{capacity utilisation rate} = \frac{\text{actual output}}{\text{productive capacity}} \times 100 = \frac{2{,}000}{2{,}500} \times 100 = 80\%$$

Capacity utilisation compares what the business makes with the most it could make. A low rate means machines and staff stand idle and fixed costs are spread over few units. A rate near 100% leaves no time for maintenance or for a sudden rush of orders.

$$\text{defect rate} = \frac{\text{defective units}}{\text{total output}} \times 100 = \frac{50}{2{,}000} \times 100 = 2.5\%$$

The **defect rate** shows quality: here 50 repairs a month have to be done again.

- **Labour productivity** = total output ÷ total hours worked. The mechanics work 4,000 hours a month, so $2{,}000 \div 4{,}000 = 0.5$ repairs per hour.
- **Capital productivity** = total output ÷ capital input. With 20 car lifts, $2{,}000 \div 20 = 100$ repairs per lift a month.
- **Productivity rate** = output ÷ input × 100, used to compare one period with another.

> **Worked example: make or buy?** The business uses 6,000 brake pads a year. A supplier sells them for 9 each. The business could make its own with a machine that costs 20,000 a year to run, plus 5 per pad for materials.

- **Cost to buy** (CTB) = price × quantity = 9 × 6,000 = 54,000.
- **Cost to make** (CTM) = fixed costs + variable cost per unit × quantity = 20,000 + 5 × 6,000 = 50,000.

Making is 4,000 cheaper, but the business must also think about quality, the skills it would need, and whether 6,000 pads a year will stay the same.

Crisis management, R&D and information systems (HL)

Crisis management and contingency planning

A **crisis** is a sudden event that threatens the business: a fire, a data breach, a product that injures customers, or a supplier that closes. **Crisis management** is how the business responds while it is happening. Good crisis management needs:

- **transparency**: telling the truth about what happened;
- **communication**: keeping staff, customers, the media and the government informed;
- **speed**: acting quickly before rumours spread;
- **control**: a clear leader and a clear plan.

A **contingency plan** is written before a crisis. It lists the risks, who does what, and the backup options, such as a second supplier or a second workshop. Contingency planning costs time and money, and the crisis may never come. But it lowers the damage and helps the business recover faster, and it reassures insurers, banks and customers.

Research and development

Research and development (R&D) creates new products and new processes. It is expensive and slow, and many projects fail, but without it a business falls behind its rivals. There are four types of **innovation**:

Type	Meaning	Example
product	a new or improved product	a repair service for electric-car batteries
process	a new way of making or delivering the product	booking and paying through an app
positioning	a new image or use for an existing product	a sports drink first sold to people who were ill, later relaunched for athletes
paradigm	a deep change in how a whole industry works	ride-hailing apps changing how people get taxis

How much a business spends on R&D depends on how fast its industry changes (fast in phones, slow in furniture), on its culture (whether staff are encouraged to try new ideas and allowed to fail), and on ethics (such as testing on animals or collecting users' data).

Management information systems

A **management information system** (MIS) collects data and turns it into information that managers use to make decisions. Some key terms:

Term	Meaning
data analytics	studying data to find patterns, such as which repairs are most profitable
database	an organised store of data, such as every customer's car and repair history
big data / **data mining**	very large sets of data; searching them for useful patterns
cloud computing	storing data and running software on remote servers over the internet
data centre	a building full of servers that store and process data
cybersecurity / **cybercrime**	protecting systems from attack; crimes such as hacking and stealing data
artificial intelligence (AI)	computers doing tasks that need human-like thinking, such as reading a fault from engine sounds
artificial neural network	a type of AI that learns from examples, loosely like a brain
Internet of Things (IoT)	everyday objects connected to the internet, such as a car that reports its own faults
virtual reality	a computer-made 3D world, used for training mechanics
customer loyalty programme	rewards for repeat customers, which also collect data on what they buy
digital Taylorism	using technology to measure and control every part of a worker's job
enterprise resource planning (ERP)	one system linking stock, finance, HR and sales

Term	Meaning
critical infrastructure	systems a country cannot work without, such as power, water and banking

Data helps a business decide faster and better, but it raises ethical questions. Customers should know what data is collected and agree to it; the data must be kept safe; and close digital monitoring of workers can harm their motivation and privacy.

Checklist

- The transformation process and value added; links between operations and the other functions; sustainability (5.1).
- Job, batch, mass and mass customisation, with an example and the advantages and disadvantages of each (5.2).
- HL: kaizen, JIT, kanban and andon; cradle to cradle; quality control against quality assurance; quality circles, benchmarking and TQM; ISO 9001 and national standards (5.3).
- Location factors; outsourcing, offshoring, insourcing and reshoring (5.4).
- Contribution 10, total contribution 20,000, break-even 1,250 repairs, margin of safety 750, target output 2,750 for a profit of 15,000, target price 26.25; the change to price 27 and rent +3,000 (break-even 1,292, margin 708); the limits of the model (5.5).
- HL: supply chains; JIT against JIC; reorder level 1,200, reorder quantity 2,000; capacity utilisation 80%; defect rate 2.5%; labour and capital productivity; CTB 54,000 against CTM 50,000 (5.6).
- HL: crisis management and contingency planning (5.7); R&D and the four types of innovation (5.8); the MIS terms and the ethics of data (5.9).

Paper 2 tests the calculations: write the formula, put in the numbers and give the answer with its unit, then say what it means for the business. Paper 1 asks about operations methods, quality and location in the case-study business. All numbers here are original.

The HL toolkit and social-enterprise action planning (toolkit; P3)

International Baccalaureate · IB Diploma · Business Management · HL

The HL toolkit and social-enterprise action planning

IB Diploma Programme Business Management HL (first assessment 2024). This topic covers the BUSINESS MANAGEMENT TOOLKIT and the HL-only PAPER 3 (the social-enterprise paper): the analytical tools (SWOT, Ansoff, STEEPLE, Porter's five forces, force field analysis), the quantitative tools (descriptive statistics, decision trees, critical path analysis) and the action-planning format Paper 3 rewards. The worked case is the shared repair business converting into a COMMUNITY INTEREST COMPANY – repairs at concession prices for jobseekers, funded by full-price trade – so every number cross-checks with Units 1–5.

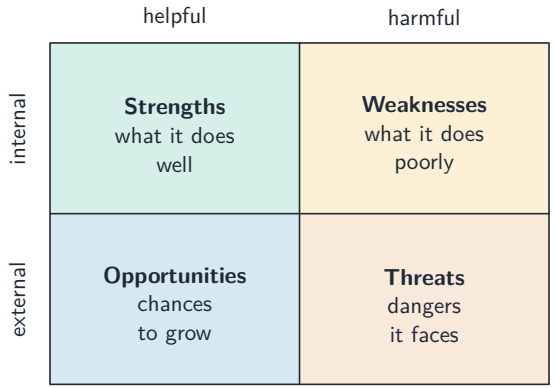
Must-know for the toolkit:

Family	Content
position	SWOT; STEEPLE; five forces (HL)
growth	Ansoff's four strategies by risk
statistics	mean, median, mode; range; IQR $= Q_3 - Q_1$
decisions	expected value: A 40 000 vs B 22 500
projects	critical path 10 weeks; float 4
Paper 3 (HL)	human need → options → plan of action [17]: finance, marketing, operations, HR, impacts, contingency

Position tools: SWOT, STEEPLE and five forces

SWOT analysis SWOT sorts the factors of a decision: STRENGTHS and WEAKNESSES are INTERNAL (today), OPPORTUNITIES and THREATS EXTERNAL (tomorrow) – and the analysis earns its keep when it PAIRS them: strength × opportunity (use it), weakness × threat (fix or hedge it). **STEEPLE** scans the external macro-environment – Social, Technological, Economic, Environmental, Political, Legal, Ethical – one factor per letter, cited from the case, never invented. PORTER'S **FIVE FORCES** (HL) grade an industry's profit pool: COMPETITIVE RIVALRY (strongest in the trade), the THREAT OF NEW ENTRANTS (low barriers in bike repair), the THREAT OF SUBSTITUTES (public transport, new-bike purchases), BUYER POWER (high – many independents) and SUPPLIER POWER (low – parts are commodities). The verdict writes the strategy: strong forces → differentiation or exit. LEWIN'S **force field analysis** maps DRIVING

forces for a change against RESTRAINING forces and scores each – the change proceeds when the driving total beats the restraining total, and management works on weakening the restrainers, not only pushing harder.

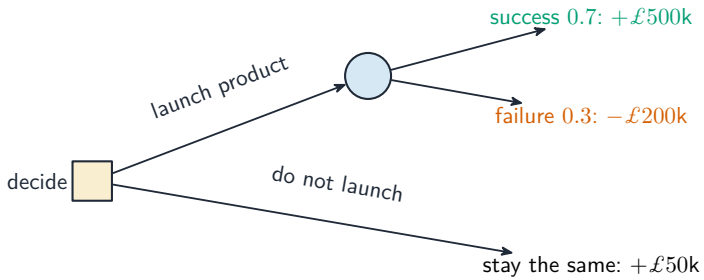


SWOT: internal strengths and weaknesses, external opportunities and threats

Growth direction: ANSOFF'S **matrix** crosses product (existing vs new) with market (existing vs new): MARKET PENETRATION (existing both – promote harder: lowest risk), PRODUCT DEVELOPMENT (new product, existing market – the subscription fleet), MARKET DEVELOPMENT (existing product, new market – the neighbouring country from Unit 4), DIVERSIFICATION (new both – the concession-repair CIC: highest risk, highest need for new competence). **A business plan** gathers all of this for a funder: summary, ownership and objectives, market and marketing, people, operations, finance and risks – the toolkit's writing-up form.

Quantitative toolkit: statistics, decisions, projects

Descriptive statistics summarise data. Daily repairs over eight days: $16, 18, 20, 22, 24, 24, 26, 30$. MEAN $= 184/8 = 23$; MEDIAN $= (22 + 24)/2 = 23$; MODE $= 24$; RANGE $= 30 - 16 = 14$. The **interquartile range** $= Q_3 - Q_1$ measures spread through the middle half: lower half $16, 18, 20, 22$ gives $Q_1 = 19$; upper half $24, 24, 26, 30$ gives $Q_3 = 25$; $IQR = 6$ – robust to the outlier that would distort the range. The box plot shows the five-number summary (min 16, Q_1 19, median 23, Q_3 25, max 30) at a glance.



A decision tree: square nodes are decisions, circles are chance outcomes with probabilities

A **decision tree** prices a choice under uncertainty: launch the concession service nationally (A) or pilot it in one district (B). A costs 20 000 and has a 60% chance of 80 000 revenue and a 40% chance of 10 000: gross expected value $= 0.6 \times 80 + 0.4 \times 10 = 52$ thousand, so net of its cost EV(A) $= 52 - 20 = 32$ thousand. B costs 5 000 and has a 70% chance of 30 000 and a 30% chance of 5 000: gross EV $= 0.7 \times 30 + 0.3 \times 5 = 22.5$ thousand, so EV(B) $= 22.5 - 5 = 17.5$ thousand. A wins on expected value – but the tree also shows A's downside branch (net −10 thousand) and the softness of the probabilities, which is exactly the evaluation Paper 3 wants. CRITICAL PATH analysis (HL) schedules a project's activities: opening the community workshop needs A permits (3 weeks) → B fit-out (5) → C staff training (2), with D tools order (4) running parallel to A and B but before C. Path A–B–C takes 10 weeks; D–C takes 6: the **critical path** is A–B–C, and D carries FLOAT $= 10 - 6 = 4$ weeks – the project's completion date is the critical path's length, and only critical activities delay it.

Paper 3: the social enterprise (HL)

A **social enterprise** trades to meet a human need: the TRIPLE BOTTOM LINE – PEOPLE, PLANET and PROFIT – sets objectives a pure profit firm lacks. The **circular economy** closes the loop on the planet leg: reduce, reuse, recycle (refurbished bikes and parts, not landfill). HL PAPER 3 presents an unseen social enterprise in trouble: Section A tests the toolkit on the stimulus (define, calculate – the statistics and decision-tree arithmetic above); Section B offers two possible actions with financial data and asks for a reasoned choice; the 17-mark Section C integrates everything into a PLAN OF ACTION: identify the HUMAN NEED the enterprise exists to meet, choose the action, then cost it (finance), price and promote it (marketing), deliver it (operations), staff it (HR), weigh the impacts on EVERY stakeholder group, name the risks with contingencies, and conclude with a judgement that the human need leads and the numbers follow. The CIC case in one sentence: concessions for jobseekers fill weekday slack (capacity is at 80%), protect the 37.5% margin of safety on full-price work, and fund themselves through the 10-per-repair

contribution – a social objective that the operations arithmetic supports.

> **Worked example (original, on the shared case).** Which tasks decide the project? Two routes reach launch: A (3 weeks) → B (5) → C (2) totals 10 weeks, while A (3) → D (1) → C (2) totals 6. The critical path is A–B–C at 10 weeks – a week saved on B shortens the whole project, while D carries 4 weeks of float (10 − 6). Critical path, float, and where effort pays: three answers from one network.

Checklist

- SWOT with pairing; STEEPLE with one cited factor per letter; five forces graded strong/weak with the strategic verdict; force field analysis scored and acted on.
- Ansoff's four strategies ranked by risk with the CIC as diversification; the business plan's contents.
- Statistics: mean 23, median 23, mode 24, range 14, Q_1 19, Q_3 25, IQR 6 – and why the IQR beats the range at outliers; the box plot's five numbers.
- Decision tree: net EVs 32 000 vs 17 500, with the downside and probability critique.
- Critical path A–B–C = 10 weeks; float on D = 4; only critical activities move the date.
- Paper 3's shape: toolkit on the stimulus, a reasoned choice between two costed actions, and the 17-mark plan of action led by the human need.

Boundary notes: Paper 3 is HL ONLY and reward-weighted [17] on the final plan – practise the section order and the stakeholder sweep; the statistics, EV and critical-path arithmetic are worth showing in full because Section A marks them method-by-method. All worked numbers are original on the shared case.