

Cambridge IGCSE · Business Studies 0450

Business Studies 0450 formulas and definitions

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1 Understanding business activity

1.1 Business activity

Added value = selling price — cost of bought-in materials

Added value rises if the price rises (costs the same) or material costs fall (price the same)

Need: essential for survival (food, water, shelter, clothing); want: desired but not essential

Scarcity: not enough resources to satisfy all wants, so choices must be made

Opportunity cost: the next best alternative given up when making a choice

Specialisation: people or businesses concentrate on what they are best at

Factors of production: land, labour, capital, enterprise

1.2 Classification of businesses

Primary sector: extracts natural resources to produce raw materials

Secondary sector: manufactures goods from raw materials (from the primary sector)

Tertiary sector: provides services to consumers and other businesses

Private sector: owned and controlled by individuals (usually for profit)

Public sector: owned and controlled by the government (the state)

Primary + secondary + tertiary shares = 100% of output or workers; a change in a share is in percentage points

As a country develops, the primary share falls and the tertiary share rises

1.3 Enterprise, business growth and size

Entrepreneur: a person who organises the factors of production and takes the risk of starting a new business

Business plan: a document setting out the business's objectives and how they will be achieved (product, market, operations, finance)

Measures of size: employees, value of output, value of sales, capital employed (**not** profit)

Internal growth: expanding the business's own activities; external growth: a merger or takeover

Merger: two businesses agree to join into one; takeover: one business buys control of another

Liquidity problem: not enough cash to pay debts when they are due

$$\text{"n times as large"} = \frac{\text{larger value}}{\text{smaller value}}$$

1.4 Types of business organisation

Sole trader: a business owned by one person

Partnership: a business owned by two or more people who share capital, decisions and profits

Unincorporated business: a business with no separate legal identity from its owners

Limited company: an incorporated business owned by shareholders, with limited liability

Limited liability: shareholders can lose only the money they invested

Unlimited liability: owners are responsible for all the business's debts, using personal assets if needed

Private limited company sells shares privately; public limited company sells shares to the public

Franchise: the franchisor lets a franchisee trade under its brand for a fee and royalties

Joint venture: two or more businesses share the costs, risks and profits of one project

Public sector: organisations owned and controlled by the government (e.g. public corporations)

$$\text{Royalty paid} = \text{royalty rate} \times \text{revenue}$$

1.5 Business objectives and stakeholder objectives

Business objective: an aim or target that a business works towards

Main business objectives: survival, growth, profit, market share

Stakeholder: a person or group with an interest in, or affected by, a business

Internal stakeholders: owners/shareholders, managers, employees

External stakeholders: customers, suppliers, lenders, government, local community

Social enterprise: a business with social or environmental objectives that reinvests its profit

$$\text{Profit} = \text{revenue} - \text{total costs}$$

$$\text{Market share} = \frac{\text{business's sales}}{\text{total market sales}} \times 100$$

Public sector organisations: owned by the government, aim to provide a service; private sector: aim mainly for profit

2 People in business

2.1 Motivating employees

Motivation: the drive that makes a person want to put effort into a job

Benefits of a motivated workforce: higher labour productivity, lower absenteeism, lower labour turnover, better quality

Maslow's levels, bottom to top: physiological, safety, social, esteem, self-actualisation

Taylor: people work mainly for money; pay by output (piece rate); split jobs into simple timed tasks

Herzberg hygiene factors: pay, working conditions, job security, supervision, relationships at work, company policy

Herzberg motivators: achievement, recognition, responsibility, promotion, the work itself, personal growth

Financial rewards: wage (time rate), piece rate, salary, bonus, commission, profit sharing, fringe benefits

Non-financial methods: job enrichment, job rotation, teamworking, training, opportunities for promotion

Pay with commission = basic pay + commission rate $\times$ value of sales

Pay by piece rate = rate per item $\times$ number of items

2.2 Organisation and management

Organisational structure: the levels of authority in a business and how responsibilities are divided between them

Span of control: the number of subordinates who report directly to one manager

Chain of command: the route by which authority and instructions pass down from the top of the hierarchy to the bottom

Tall structure = many levels, narrow spans, long chain; flat (short) structure = few levels, wide spans, short chain

The five functions of management: planning, organising, coordinating, commanding, controlling

Delegation: a manager giving a subordinate the authority to carry out a task

Autocratic: the leader makes all the decisions; democratic: the leader involves employees before deciding; laissez-faire: employees make the decisions within broad aims

Trade union: an organisation of employees that acts together to protect and improve its members' pay, conditions and rights

Managers needed on a level = people on the level below $\div$ span of control

Links from the top to the bottom = number of levels $- 1$

2.3 Recruitment, selection and training of employees

Recruitment: attracting suitable people to apply for a job; selection: choosing the best of the applicants

Stages of recruitment and selection: job analysis, job description, person specification, advertise, applications, shortlist, interviews and tests, job offer

Job description: a document setting out the title, duties, tasks and responsibilities of a particular job

Person (job) specification: the skills, qualifications, experience and qualities needed by the person who does the job

Internal recruitment: filling a vacancy with an existing employee; external recruitment: filling it with someone from outside the business

Part-time employee: works fewer hours than the business's normal full working week (part-time is not the same as temporary)

Induction training: introduces new employees to the business, their role and its health and safety rules

On-the-job training: training at the workplace while doing the job, often by watching an experienced worker

Off-the-job training: training away from the workplace, for example at a college or by specialist trainers

Dismissal: the employer ends someone's employment because of their poor performance or behaviour

Redundancy: an employee loses their job because the job is no longer needed; the worker did nothing wrong

Legal controls over employment: contracts of employment, unfair dismissal, discrimination, health and safety, legal minimum wage

Weekly wage = hourly wage $\times$ hours worked a week

First-year cost of an employee = weekly wage $\times$ weeks worked + one-off training cost

Weeks for a redundancy to pay for itself = redundancy payment $\div$ weekly wage saved

2.4 Internal and external communication

Effective communication: a message reaches the right receiver, is understood as intended and leads to the right action

The communication process: sender, message, medium, receiver, feedback

Feedback: the receiver's reply, which shows the sender the message was received and understood

Internal communication is within the business; external communication is with people outside it, such as customers and suppliers

One-way communication allows no reply; two-way communication allows instant feedback and questions

Benefits of effective communication: fewer mistakes and less waste, faster decisions, better coordination, higher motivation, higher efficiency

Factors in choosing a method: number of receivers, need for feedback, length of message, need for a written record, urgency, confidentiality, cost, access to technology

Communication barrier: anything that stops a message being received or understood as intended

Barriers arise from the sender (jargon, unclear wording), the message (too long, wrong person), the medium (wrong medium, technical failure, long chain of command), the receiver (not listening, distrust, language) and lack of feedback

Reducing barriers: plain language, short messages, the right medium, feedback, a shorter chain of command, translation

3 Marketing

3.1 Marketing, competition and the customer

Four roles of marketing: identify customer needs, satisfy customer needs, maintain customer loyalty, build customer relationships

Customer loyalty: previous customers keep coming back to buy from the business rather than from its rivals

Mass market: the same, standard product sold to the whole market, so a very large number of sales of one product

Niche market: a small, specialised part of a larger market, whose customers have particular needs

Market segment: a group of customers within a market who share a characteristic that affects what they buy

Ways to segment: age, gender, income, socio-economic group, location, ethnic background or culture, family size, lifestyle, use of product

Why markets have become more competitive: globalisation and free trade, the internet and e-commerce, better transport, changes in the law

Customers in a segment = customers in the market $\times$ the segment's share (%)

3.2 Market research

Market-orientated business: finds out what customers want before deciding what to produce

Primary (field) research: collecting new, first-hand information for the business's own purpose

Secondary (desk) research: using information that already exists, collected by someone else, often for another purpose

Primary research methods: postal questionnaire, online survey, interview, focus group, observation, test marketing

Secondary research sources: online sources, government statistics, commercial market research reports, newspapers and trade journals, the business's own records

Sample: a smaller group of people chosen to represent the whole target market; used because it is cheaper and quicker than asking everyone

Accuracy depends on: sample size, who is in the sample, question wording, interviewer bias, honesty of answers, age of the data, who collected it

Percentage of a sample = number giving that answer $\div$ number asked $\times 100$

Estimate for the whole market = size of the market $\times$ percentage from the sample

3.3 Marketing mix

Marketing mix: the 4Ps, product, price, place and promotion

Brand image: the impression or identity customers have of a product or business that sets it apart from rivals

Product life cycle stages: development, introduction, growth, maturity, decline (saturation is a point in maturity)

Extension strategies: new features, new markets or outlets, new advertising or packaging, price cuts

Cost-plus price = cost per unit + cost per unit $\times$ mark-up %

Competitive pricing: set at or just below rivals' prices

Penetration pricing: a low price at launch to win customers and market share, raised later

Price skimming: a high price at launch for a new or unique product, lowered later

Promotional pricing: a price cut for a short period

Price elastic demand: quantity bought changes by a bigger percentage than price; price inelastic: by a smaller percentage

Revenue = price $\times$ quantity sold

Channels: producer $\rightarrow$ consumer; producer $\rightarrow$ retailer $\rightarrow$ consumer; producer $\rightarrow$ wholesaler $\rightarrow$ retailer $\rightarrow$ consumer

Marketing budget: the money a business plans to spend on marketing over a period

Cost per new customer = cost of the promotion $\div$ number of new customers it brings

E-commerce: buying and selling goods and services over the internet

3.4 Marketing strategy

Marketing strategy: a plan that sets out how a business will reach a marketing objective, through its choice of target market and marketing mix

The most important part of the mix depends on the product, the target market, the competition, the life cycle stage, the budget and the objective

Legal controls over marketing: no misleading promotion; no faulty or dangerous goods; accurate weights and measures; labelling and packaging rules; limits on advertising some products; no price fixing

Effects of legal controls: higher costs, less freedom in promotion, time to check, fines or court action if broken, possibly more customer trust

Reasons to enter foreign markets: growth potential (rising population and incomes), saturated or slow home market, more sales and profit, spreading risk, economies of scale

Problems of foreign markets: cultural and language differences, lack of market knowledge, different laws, import restrictions, exchange rates, transport costs, being unknown

Tariff: a tax on imported goods; quota: a limit on the quantity of a good that can be imported

Licensing: a business gives another business permission to make or sell its branded products in return for a fee

Joint venture: two or more businesses agree to work together on a project, often by setting up a new business they own together, sharing its costs, risks and profits

Franchising: a business (the franchisor) sells another business (the franchisee) the right to trade under its name and use its methods, in return for a fee and usually a share of revenue

Cost after a tariff = cost before + cost before $\times$ tariff %

4 Operations management

4.1 Production of goods and services

Production: turning resources into goods and services that customers want; it is measured by total output

Productivity: the output produced from the inputs used in a period, usually measured as output per worker (labour productivity)

Labour productivity = $\frac{\text{total output}}{\text{number of workers}}$

Percentage change = $\frac{\text{new} - \text{old}}{\text{old}} \times 100$

Efficiency: producing goods and services with as few resources, and as little waste, as possible

Ways to increase efficiency: automation and technology, improving labour skills (training), motivating workers, lean production

Inventory: the stocks of raw materials, part-finished goods (work in progress) and finished goods that a business holds

Reasons to hold inventory: meet (unexpected) demand, keep production going if supplies are late, bulk-buying discounts, seasonal peaks, replace faulty goods

Lean production: a group of methods that cut waste of every kind (time, materials, inventory, movement, faulty work) so that a business produces more with fewer resources

Just-in-time (JIT): materials and components arrive just before they are needed in production, and finished goods are sent out as soon as they are made, so little or no inventory is held

Kaizen: continuous improvement through many small changes suggested by employees, usually working in teams

Job production: one product, or a small number, is made at a time, each to a customer's own order

Batch production: a set quantity of identical products is made together, the whole group moving through each stage of production before the machines are changed to make a different product

Flow production: large quantities of identical products are made continuously, moving from one stage to the next along a production line

CAD: computer-aided design; CAM: computer-aided manufacture

4.2 Costs, scale of production and break-even analysis

Fixed costs: costs that do not change when output changes, in the short run (rent, insurance, salaries, interest, advertising)

Variable costs: costs that change directly with the level of output (raw materials, packaging, wages paid per item)

Total variable cost = variable cost per unit $\times$ output

Total cost = fixed costs + total variable cost

Average cost = $\frac{\text{total cost}}{\text{output}}$

Total revenue = price $\times$ quantity sold; profit = total revenue – total cost

Economies of scale: the cost advantages of being large: as a business increases its scale of production, the average cost of each unit falls (purchasing, marketing, financial, managerial, technical)

Diseconomies of scale: the problems of being very large that make the average cost of each unit rise as a business keeps growing (poor communication, lack of commitment, weak coordination)

Break-even output: the number of units a business must make and sell so that its total revenue just covers its total cost; at this output it makes neither a profit nor a loss

Contribution per unit = selling price – variable cost per unit

Break-even output = $\frac{\text{fixed costs}}{\text{selling price} - \text{variable cost per unit}}$

Margin of safety: the number of units by which current (or forecast) sales are above the break-even output

Margin of safety = current output (or sales) – break-even output

4.3 Achieving quality production

Quality: a good or service meets customers' expectations: it does the job it is meant to do, has no faults and is worth the price paid

Why quality matters to a business: reputation and brand image, customer loyalty, a higher price, fewer returns and less waste, meeting legal and safety standards, competitive advantage

Quality control: checking finished products at the end of production, usually by inspectors, so that faulty ones are found and removed before they reach customers

Quality control is carried out by setting a standard, inspecting finished products (often a sample) against it, and scrapping or reworking those that fail

Quality assurance: checking quality at every stage of production, usually by the workers themselves, to stop mistakes happening rather than finding them at the end

Quality assurance is put in place by agreeing standards, using approved suppliers, training workers to check their own work at every stage, fixing the cause of faults and keeping records

4.4 Location decisions

Location factors for a manufacturer: raw materials and suppliers, transport links, labour, land and site, power and water, nearness to the market for heavy or fragile goods, government influence

Location factors for a service business: customers and footfall, competitors nearby, rent and taxes, access and parking, labour, suitable premises, legal controls, infrastructure, owner's preference

Factors when choosing a country: labour, raw materials, land, trade barriers (tariffs and quotas), grants and taxes, legal controls, market, infrastructure, language and culture, exchange rates

Legal controls on location: laws and planning rules that decide where a business may build and how it may operate there; they affect where, how and when it operates, and its costs

Footfall: the number of people who pass a site

$$\text{Cost per item} = \frac{\text{total cost}}{\text{output}}$$

$$\text{Profit per item} = \text{selling price} - \text{cost per item}$$

$$\text{New value after a rise of } r\% = \text{old value} \times \left(1 + \frac{r}{100}\right)$$

5 Financial information and decisions

5.1 Business finance: needs and sources

Start-up capital: the money needed to set the business up before it begins trading

Working capital: the money available for day-to-day spending (current assets minus current liabilities)

Retained profit: profit kept in the business after tax and payments to the owners, used to fund the business

Internal sources: retained profit, sale of non-current assets, running down inventory, owner's savings

Short-term external sources: overdraft, trade credit; long-term: bank loan, mortgage, shares, debentures, leasing, hire purchase, grants

Debt: borrowed money that must be repaid with interest; equity: money from selling a share of the business

Microfinance: the lending of small amounts of money to people on low incomes and to very small businesses that banks will not lend to

Crowdfunding: raising money from a large number of people, each giving a small amount, usually through a website

Factors in choosing a source: purpose, amount, length of time, size and legal form, existing loans, cost, control, collateral, urgency

Interest on a loan at a flat rate = amount borrowed $\times \frac{\text{rate}}{100} \times \text{number of years}$

Total repaid on a loan = amount borrowed + interest

Total paid by hire purchase = deposit + number of payments $\times$ each payment

5.2 Cash-flow forecasting and working capital

Cash-flow forecast: an estimate of the cash a business expects to receive and pay out in each of the coming months

Net cash flow = cash inflows – cash outflows (for the month)

Closing balance = opening balance + net cash flow

Opening balance (the cash a business has at the start of the month) = the previous month's closing balance

Missing outflow = cash inflows – net cash flow; missing inflow = net cash flow + cash outflows

In a forecast, a negative figure is shown in brackets: (2 000) means minus \$2000

Working capital: the money available to pay day-to-day costs (current assets minus current liabilities)

Working capital = current assets – current liabilities

Ways to overcome a short-term cash-flow problem: overdraft, short-term loan, delay paying suppliers, ask customers to pay sooner, delay buying non-current assets, sell unwanted assets

Profit is counted when a sale is made; cash is counted when the money arrives or leaves

5.3 Income statements

Revenue: the income a business receives from selling its goods or services over a period (price $\times$ quantity sold)

Revenue = price $\times$ quantity sold

Cost of sales: the cost of buying or making the goods that were sold in the period

Gross profit = revenue – cost of sales

Expenses: the other costs of running the business that are not part of cost of sales, such as rent, salaries, advertising and interest

Profit: total revenue minus total costs (gross profit minus expenses)

Profit = gross profit – expenses

Retained profit: the profit kept in the business after tax and dividends have been paid

Retained profit = profit – tax – dividends

Expenses = gross profit – profit; cost of sales = revenue – gross profit

Why profit matters: reward for risk-taking and enterprise, source of finance, attracts investors and lenders, measure of success, decide which products to keep, long-term survival

Profit is counted when a sale is made; cash is counted when money comes in or goes out

5.4 Statement of financial position

Statement of financial position: a financial statement that shows the value of a business's assets, liabilities and equity at one particular date

Non-current assets: items of value owned by the business that it expects to keep and use for more than one year (land, buildings, machinery, vehicles, fixtures)

Current assets: items of value owned by the business that it expects to turn into cash or use up within one year (inventory, trade receivables, cash)

Current liabilities: debts the business owes that must be repaid within one year (trade payables, overdraft, short-term loans)

Non-current liabilities: debts the business owes that are repaid over more than one year (long-term bank loans, mortgages, debentures)

Equity: the money put into the business by its owners plus the profit it has kept (retained profit); it equals total assets minus total liabilities

Total assets = non-current assets + current assets

Total liabilities = current liabilities + non-current liabilities

Total assets = total liabilities + equity

Equity = total assets – total liabilities

Working capital = current assets – current liabilities

Current ratio = current assets ÷ current liabilities

5.5 Analysis of accounts

Profitability: how much profit a business makes compared with the size of its sales or the capital invested in it (measured as a percentage)

Liquidity: the ability of a business to pay its short-term debts (current liabilities) when they are due

Gross profit margin = $\frac{\text{gross profit}}{\text{revenue}} \times 100$, in %

Profit margin = $\frac{\text{profit}}{\text{revenue}} \times 100$, in %

Return on capital employed (ROCE) = $\frac{\text{profit}}{\text{capital employed}} \times 100$, in %

Capital employed: the total long-term finance invested in the business: equity plus non-current liabilities

Capital employed = equity + non-current liabilities = non-current assets + working capital

Current ratio = $\frac{\text{current assets}}{\text{current liabilities}}$, written as 1.5 or 1.5:1

Acid test ratio = $\frac{\text{current assets} - \text{inventory}}{\text{current liabilities}}$

Working capital = current assets – current liabilities

Guides: current ratio about 1.5 to 2; acid test ratio about 1; below 1 suggests liquidity problems, far above suggests idle assets

6 External influences on business activity

6.1 Economic issues

Business cycle stages: growth, boom, recession, slump

GDP: the total value of goods and services produced in a country in a period of time (usually a year)

Economic growth: an increase in a country's GDP over time

Inflation: a rise in the general price level of goods and services over time

Unemployment: people who are able and willing to work but cannot find a job

Government economic objectives: economic growth, low unemployment, low and stable inflation, healthy balance of payments

Percentage change = $\frac{\text{new value} - \text{old value}}{\text{old value}} \times 100$

Yearly interest = amount borrowed × interest rate

Interest rate rise: higher costs of borrowing (cost route) and lower customer spending (demand route)

Income tax rise: less disposable income, so lower demand; tax on profits rise: less retained profit; sales tax rise: higher prices or smaller margins

6.2 Environmental and ethical issues

External costs: costs that a business's activity places on third parties (society), not paid by the business itself

External benefits: gains to third parties (society), other than the business, from its activity

Private costs and benefits: those paid or gained by the business itself (wages, materials; revenue, profit)

Sustainable development: development that meets today's needs without harming the environment or putting future generations at risk

Pressure group: people with a common interest who try to influence the decisions of businesses or the government

Ethical business: one that does what is morally right, beyond what the law requires

Ways business harms the environment: pollution (air, water, noise), greenhouse gases and global warming, land use and deforestation, using up resources, waste, congestion

Pressure-group methods: boycotts, bad publicity, lobbying government, protests, petitions, legal action

Legal controls raise costs or change methods for every business of that kind; going beyond the law is what builds an ethical or green image

6.3 Business and the international economy

Globalisation: the growing links between countries' economies, with more trade and more businesses producing in other countries

Reasons for globalisation: free trade agreements, cheaper transport, better communication technology, fast-growing emerging markets, governments welcoming foreign businesses

Import tariff: a tax on imported goods, charged when they enter a country

Import quota: a limit on the quantity of a product that can be imported

Why governments use tariffs and quotas: protect home businesses and jobs, protect infant industries, cut imports, raise revenue (tariff)

Multinational company: a business with production or service operations in more than one country

Depreciation: a fall in the value of a currency against other currencies

Appreciation: a rise in the value of a currency against other currencies

Depreciation: exports cheaper abroad, imports dearer at home

Appreciation: exports dearer abroad, imports cheaper at home
