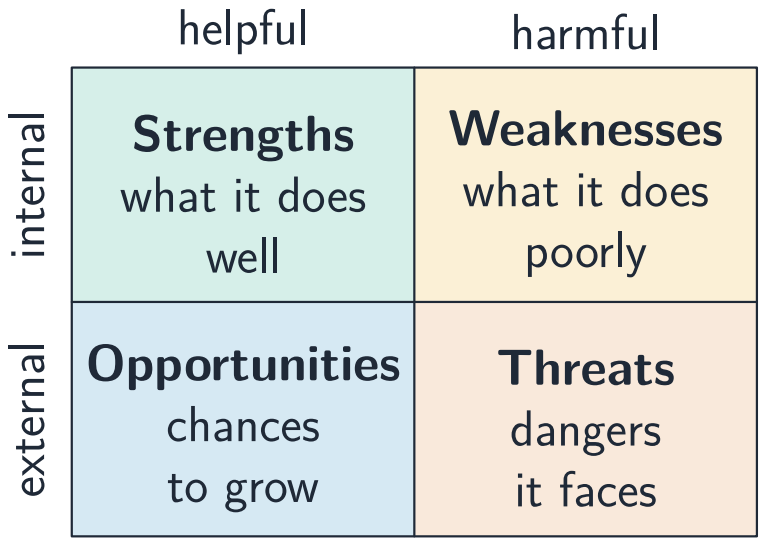
Exercise walk-through

6.2
Toolkit: quantitative tools and Paper 3 planning

International Baccalaureate · IB Diploma · Business Management · HL

Figure: Analysing the position: SWOT, STEEPLE and force field analysis



- SWOT: internal strengths and weaknesses, external opportunities and threats.
- Match each part of the diagram to the text.

Paper 3: planning for a social enterprise (HL)

- *Human need.* Jobseekers in the city who need a car to reach work or interviews but cannot afford repairs.
- *Action.* Concession repairs on weekdays at a price of 18, for customers referred by the job centre, starting with the one-district pilot (option B above).
- *Finance.* Parts and direct labour cost 15 a repair, so each concession repair still earns a contribution of $18 - 15 = 3$. The workshops can do 2,500 repairs a month and do 2,000 at full price, so up to 500 concession repairs fit into spare capacity without new fixed costs. Full-price work already earns $2{,}000 \times 10 - 12{,}500 = 7{,}500$ profit a month, with a margin of safety of $750 \div 2{,}000 = 37.5\%$, so the business can carry the pilot.

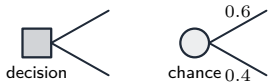
Common errors (2)

- Choosing the option with the higher **expected value** without asking about the risk, the worst outcome and how reliable the probabilities are.
- Adding up every activity to find a project's length; only the longest route through the network (the **critical path**) sets it.
- In Paper 3, writing a general essay about social enterprises instead of a costed plan for this one, led by its human need.
- Forgetting that a social enterprise must cover its costs; a plan that loses money cannot keep meeting the need.

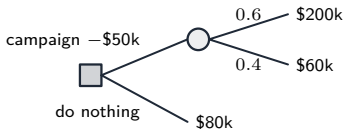
exercises.lol exercises.com.cn

Exercises 2.1·2.2

2.1 In a decision tree, distinguish between a decision node and a chance node. [2]

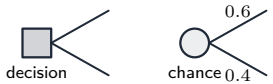


2.2 A firm can launch a campaign costing \$50,000: with probability 0.6 it brings revenue of \$200,000, and with probability 0.4 revenue of \$60,000. Or it can do nothing and earn \$80,000. Calculate the net expected value of the campaign and state the better option. [4]



Exercises 2.1·2.2

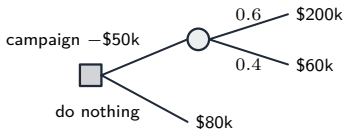
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2.1

decision node (square): a point where the manager chooses between options; chance node (circle): a point where outcomes depend on chance, each with a probability

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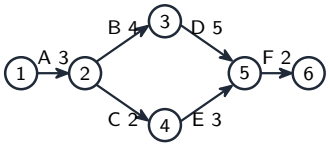


2.2

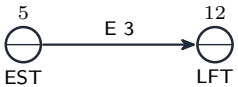
expected value $= 0.6\times 200\,000 + 0.4\times 60\,000 = \$144\,000$; net $= 144\,000 - 50\,000 = \$\mathbf{94\,000}$; \$94,000 > \$80,000, so launch the campaign

Exercises 2.3·2.4

2.3 Using the network, identify the critical path and the minimum project duration. [4]

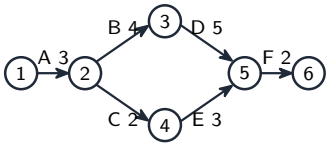


2.4 Calculate the total float of activity E, and explain what it means. [3]



Exercises 2.3·2.4

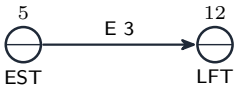
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2.3

paths: A–B–D–F = 3 + 4 + 5 + 2 = 14 days; A–C–E–F = 3 + 2 + 3 + 2 = 10 days; critical path A–B–D–F; minimum duration **14** days; any delay on A, B, D or F delays the project

2.4 Calculate the total float of activity E, and explain what it means. [3]



2.4

EST of E = 3 + 2 = 5; F cannot start until day 12, so LFT of E = 12; float = 12 − 3 − 5 = **4** days; E can be delayed by up to 4 days without delaying the whole project

Exercise 3.1

3.1 Bright Futures is a non-profit social enterprise in a large city. It runs free after-school coding classes for 200 teenagers from low-income families each year. Its resources are summarized below. Government grants will fall, and the board must decide how to keep the classes running.

Using all the information and your knowledge of business management, recommend a plan of action to ensure the sustainability of Bright Futures for the next three years. [17]

item	now	next year
government grants	$120 000	$80 000
donations	$15 000	$15 000
staff costs	$90 000	$90 000
rent and laptops	$30 000	$30 000
students per year	200	200
volunteer mentors	25	30
classrooms used in evenings	2 of 6	2 of 6

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Full solution on next slide

Full solution 3.1

3.1

award up to [17]: identifies the human need (education and skills for low-income teenagers, a path to better jobs) and the key problem (grants falling from $120,000 to $80,000, so income of $95,000 no longer covers costs of $120,000: a gap of $25,000 a year); uses at least two toolkit tools with data, e.g. SWOT (strengths: strong results, volunteer mentors; threats: falling grants), STEEPLE, force field, decision tree or a Gantt chart for the plan; evaluates the options with figures: corporate sponsorship from tech firms (fits the mission; risk of dependence); paid courses for adults or schools to cross-subsidize (uses spare evening capacity; needs marketing and time); a sliding-scale fee (raises revenue but may exclude the poorest, against the mission); considers stakeholders and ethics: students, families, volunteers, donors, the board; mission drift; a realistic plan with timeline, responsibilities, costs and funding over three years, e.g. year 1 sponsorship and a pilot adult course, year 2 expand paid courses, year 3 review; a justified conclusion linked to the human need