



THE TIMES 100

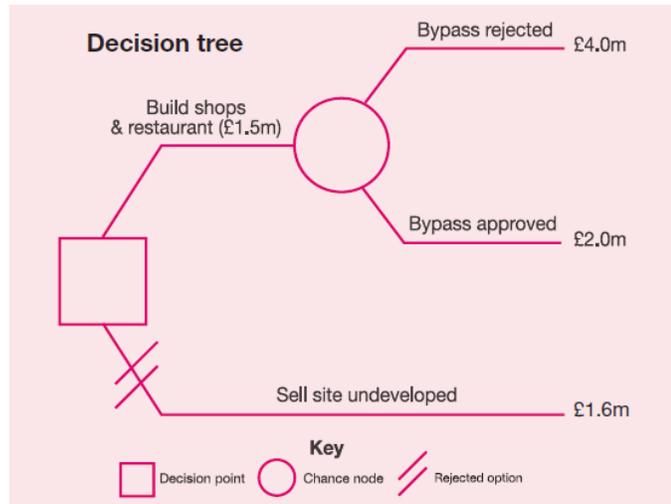
BUSINESS CASE STUDIES

Decision trees - CIMA

Traditional accounting is concerned with reporting on a business in financial terms about its past performance. Management accountants go beyond this to prepare both financial and non financial information to support the business. They combine the relevant expertise of a traditional professionally qualified accountant with an understanding of the drivers of cost, risk and value in a business. This enables them to provide analysis and insights which are used to improve future performance.

Most business problems may potentially have more than one solution. Each choice can lead to varying outcomes, some more likely than others.

To illustrate this, consider the decision faced by Prospect plc, a (fictitious) property development business. The company owns a town centre building site. This could be sold now for an estimated £1.6m. Alternatively the site could be developed with shops and a restaurant at a cost of £1.5m. The property could then be sold for £4m - provided that a bypass proposal is rejected by the local council. The odds of the bypass being rejected are judged at about 75:25 due to environmental objections. If, however, the bypass were to be built, much



tourist trade would be lost and the value of the development would only be £2m. Which choice should Prospect plc make? A decision tree is a useful tool when analysing choices of this kind. A decision tree is an outcome and probability map of the scenario.

Outcome	Probability	Estimated value
Outcome 1 – the site is developed and the bypass is rejected.	The development value is £4m. However, there is only a 75% chance of this occurring.	A 75% chance of receiving £4m is 'worth' £4m X 0.75 = £3m
Outcome 2 – the site is developed and the bypass goes ahead.	There is a 25% chance of receiving only £2m	If the bypass goes ahead it is 'worth' £2m x 0.25 = £0.5m
Outcome 3 – the site is sold undeveloped.		Undeveloped, the site is worth £1.6m

There are three possible outcomes to this scenario, each of which can be given a financial value.

To calculate the possible yield of developing the site, the values of outcomes 1 and 2 are combined.

The cost of development is then subtracted:
£3m + £0.5m - £1.5m = £2m

This compares to the value of selling the undeveloped site at only £1.6m. On this basis, depending on its attitude

to risk and the likely timescales, the company is likely to build the shops and restaurant.

Decision trees encourage managers to look at a range of options rather than relying on gut feeling. However, they are only as accurate as the data on which they are based. This data is usually based on estimates. They do also run the risk of over-simplifying a problem particularly where human or other external factors are involved. Other analysis tools can supplement the decision making process.



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Questions

1. What is a decision tree?

2. Describe when firms are likely to use decision trees.

3. Explain how decision trees are used.

4. Analyse whether the use of a decision tree would be appropriate for a firm that is thinking of expanding its operations into another country.

Task

The local garden centre is considering offering additional products and services. The owner has narrowed the options down to two:

1. Open up a restaurant. This would cost £120,000 set up. If successful it could increase profits by £400,000 but if not it could lose £50,000. The probability of success is 0.8.
2. Open up a farm shop. The cost of this would be £20,000. The probability of success is 0.7 and is likely to benefit the business by £300,000. If unsuccessful it would only make an extra £40,000.

Draw up a decision tree and recommend which option the owner of the garden centre should take, or whether she should pursue neither.

What have you learned?

Revision cards . write some BRIEF revision cards with only the main points you have learned in this session. Use colours, bullet points, diagrams etc. Hole-punch and treasury tag these cards. You can add further cards as you cover additional theory.