THE TIMES 100
BUSINESS CASE STUDIES

Teacher guide

Investment appraisal (NPV) - Syngenta

Where does the lesson fit?

This session could be used in a finance module to explore the concept of investment appraisal in terms of discounted cash flow and net present value. It could be used alongside a session on other investment appraisal techniques such as Payback and ARR.

Suggested resources & activities related to investment appraisal and Syngenta

- Full Syngenta case study
- Investment Decision Making PowerPoint
- Investment Appraisal (Payback and ARR) lesson resources
- Syngenta crossword
- Syngenta word search

Answers to questions

1. What is meant by investment appraisal?
   Investment appraisal techniques are quantitative decision-making tools that can be used to decide between different capital investments.
   Investment appraisal tools include:
   - Payback
   - Average annual rate of return (AARR)
   - Net present value (NPV)

2. Describe the three main reasons for capital investment.
   The main reasons for capital investment are:
   - Renewal of worn out assets
   - Acquisition of additional assets to expand the business and increase output
   - Innovation to reduce costs and/or to create new value.

3. What are the advantages and disadvantages of using Discounted Cash Flows (Net Present Value) as an investment appraisal technique?

Advantages of NPV	Disadvantages of NPV
• Considers the time value of money • Takes into account both the timings and the amounts of cash flows	• More difficult to calculate and understand than other methods • The choice of discount rate used is arbitrary

4. A firm is considering an investment opportunity. The initial cost would be £75 million and the project is expected to have a useful life of 5 years.
The expected net returns each year are as follows:

Year	Net return (£m)
0	(75)
1	35
2	60
3	65
4	60
5	45

a) Calculate the Net Present Value for the project using the 20% discount factors in table 2.

Year	Net return (£m)	Discount factor	Discounted cash flows (£m)
0	(75)	1.00	(75)
1	35	0.83	29.05
2	60	0.69	41.4
3	65	0.58	37.7
4	60	0.48	28.8
5	45	0.40	18
		Total	**£79.95**

So, the project is estimated to have a positive net present value of **£79.95m**

b) Do you think it is a worthwhile investment?
As this is a positive value, then based purely on this technique the project is viable.

c) What other factors might the business need to take into account before making a final decision

Payback and Average Annual Rate of Return are other investment appraisal technique that could be used. In addition to this, qualitative factors might also be taken into account. These include:

- The aims and objectives of the firm
- The current and expected state of the economy
- Possible impacts on image and reputation
- Environmental and ethical considerations
- Past experience
- Levels of risk and the directors' approach to it