

Practical 3: Cost-benefit Analysis and Software Lifecycle Methodologies

Important note: Your submission for the practical should be typed. Handwritten submissions will **not** be marked by the demonstrators. Please type your name, student registration number, as well as the practical session you attend on your submission.

1. A new product scheduling information system for XYZ Corporation could be developed at a cost of £125,000. The estimated operating costs and estimated benefits over five years of operation are shown in the table below. What is the NPV (net present value) for each year assuming a 12% interest rate? What is the NPV of the overall investment (i.e. the cumulative NPV) if the current interest rate is 12%? During which year will the system break even? State, giving reasons, whether this would be a good or a bad investment. (Hint: Use the formulae for PV, and NPV given to you on the handout during lecture 5, as well as the cost-benefit example. In the formula for PV, n represents the number of years (e.g. $n = 0$ for year 0, $n = 1$ for year 1, etc.). You may use a spreadsheet to calculate costs.)

Year	Estimated Operating Costs (£)	Estimated Benefits (£)
0	125,000	0
1	3,500	26,000
2	4,700	34,000
3	5,500	41,000
4	6,300	55,000
5	7,000	66,000

2. Describe how the traditional waterfall lifecycle model works. What are its advantages and disadvantages? How may some of the disadvantages be overcome?
3. Describe the throwaway prototyping approach to software development.