

Chapter 4, Exercise 3, pp. 121-122

Problem definition

You work for a large, successful organization, but lately many of the IT projects have experienced disappointing results. You have been put on the steering committee to improve the selection process. The organization has decided that any new projects selected for implementation must first meet strict financial measures.

It has set minimum values for ROI, NPV, IRR, and payback period as follows:

Project 1 costs, Year 1 through Year 4: \$100,000; \$10,000; \$10,000; \$10,000

Project 1 revenue: \$0; \$5,000; \$50,000; \$110,000

Project 2 costs, Year 1 through Year 4: \$50,000; \$20,000; \$5,000; \$5,000

Project 2 revenue: \$0; \$6,000; \$70,000; \$100,000

Project 3 costs, Year 1 through Year 4: \$120,000; \$15,000; \$5,000; \$5,000

Project 3 revenue: \$2,000; \$50,000; \$100,000; \$150,000

Project 4 costs, Year 1 through Year 4: \$50,000; \$50,000; \$10,000; \$10,000

Project 4 revenue: \$5,000; \$70,000; \$70,000; \$50,000

NEITHER costs (outflows) NOR revenues (inflows) are applicable for Year # 0 for each designated project.

Assignments:

Based solely on the financial numbers presented below, answer questions 3A through 3E to determine which of the following projects should be implemented by the organization:

3A. Calculate NPV for each project, using a **10 percent discount rate**.

3B. Calculate IRR for each project.

3C. Calculate ROI for each project, using a 10 percent discount rate.

3D. Calculate payback period for each project.

3E. If the steering committee can choose only one project to work on, which should it be?

IF NEEDED, please search the Internet for additional information (calculations) on NPV, IRR, ROI or even free online calculators.

What to do?

1. Create Excel electronic spreadsheets that calculate ROI, NPV, IRR, and payback period for each of 4 projects.
2. Calculate ROI, NPV, IRR, and payback period **MANUALLY (by writing corresponding formulas by yourself in the Excel application for NPV, IRR, ROI and Payback_Period)** for each project .
3. Calculate ROI, NPV, IRR, and payback period **AUTOMATICALLY (using built-in Excel functions for NPV, IRR, ROI and Payback_Period)** for each project.
4. Put obtained numeric values into the Tables 3A, #b, 3C, and 3D below.
5. Identify (assign) YOUR numeric scores for each projects (projects ## 1,2,3 and 4) and for each business indicator (NPV, IRR, ROI, and PTP), and put them into Table 3E.
6. Calculate numeric values of Total Weighted SCORE for each project based on your own scores.
7. Make a final judgment in 3F: Which one of four (4) designated projects you will recommend to complete first? Justify (explain) your final judgment (about 1/3 or 1/2 page long).

What to submit to instructor BEFORE 1:00 PM on the date of next class?

1. **DOC file with populated tables (see below).**
2. **Microsoft Excel workbook with Excel spreadsheets with calculations of NPV, ROI, IRR and PTP for all for projects.**

Table 3A. Calculate NPV for each project, using a 10 percent discount rate.

Project Number	NPV numeric value, in \$
Project 1	
Project 2	
Project 3	
Project 4	

Table 3B. Calculate IRR for each project.

Project Number	IRR numeric value, in %
Project 1	
Project 2	
Project 3	
Project 4	

Table 3C. Calculate ROI for each project, using a 10 percent discount rate.

Project Number	ROI numeric value, in %
Project 1	
Project 2	
Project 3	
Project 4	

Table 3D. Calculate payback period for each project.

Project Number	Payback time period in Year number (1, 2, 3 or 4)
Project 1	
Project 2	
Project 3	
Project 4	

Table 3E. Calculate numeric values of Total Weighted SCOREs for each project.

Approaches (models)	Rating	Project 1	Project 2	Project 3	Project 4	SUM (proj ## 1,2,3,4)
NPV (bigger is better)	20%	<i>Your numeric SCORE for this project</i>	<i>Your numeric SCORE for this project</i>	<i>Your numeric SCORE for this project</i>	<i>Your numeric SCORE for this project</i>	
ROI (bigger is better)	30%	<i>Your numeric SCORE for this project</i>	<i>Your numeric SCORE for this project</i>	<i>Your numeric SCORE for this project</i>	<i>Your numeric SCORE for this project</i>	
Payback Period (smaller is better)	30%	<i>Your numeric SCORE for this project</i>	<i>Your numeric SCORE for this project</i>	<i>Your numeric SCORE for this project</i>	<i>Your numeric SCORE for this project</i>	
IRR (bigger is better)	20%	<i>Your numeric SCORE for this project</i>	<i>Your numeric SCORE for this project</i>	<i>Your numeric SCORE for this project</i>	<i>Your numeric SCORE for this project</i>	
TOTAL Weighted SCORE values	SUM = 100%	<i>Calculate the numeric value of the TOTAL Weighted SCORE for this project</i>	<i>Calculate the numeric value of the TOTAL Weighted SCORE for this project</i>	<i>Calculate the numeric value of the TOTAL Weighted SCORE for this project</i>	<i>Calculate the numeric value of the TOTAL Weighted SCORE for this project</i>	

3F. If the steering committee can choose only one project to work on, which should it be?

*Based on Total Weighted SCOREs values,
I would recommend to select project # _____ first.*

This is because (provide your detailed justification here – about 1/3 or 1/2 page long)
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