Project = Capital Budgeting – Analyzing & Valuing Projects

Excel Analysis, Word Report and PowerPoint Presentation

**Assignment Tasks, Resources, Requirements & Deliverables**

This project integrates multiple elements of valuation, capital budgeting, financial management, communication, and presentation principles.

**Resources:** The parameters of the capital budgeting problem are provided below. An Excel template is provided for your use in your Excel analysis. The Excel template provides a general structure for building the analysis within Excel.

**Requirements and Deliverables:** You should compile and complete the Excel analysis of the capital budgeting problem, and then prepare a professional quality Word document report and a PowerPoint presentation of capital budgeting in general and of this analysis. All deliverables (analysis, report, PPT) should be of professional quality and representative of materials appropriate to deliver to your Board of Directors or your client. The required deliverables are listed below.

**Deliverables:**

1. **Excel spreadsheet analysis**, with an NPV Profile graph, and NPV Scenario / Risk Analysis Grids (see template). The NPV Scenario / Risk Analysis Grids will present 25 different NPV values associated with changing values of the cost of capital, cost of goods sold percentage (CoGS %), and sales. Use the Excel template provided for this assignment for completing the Excel analysis. **At a minimum, your Excel spreadsheet analysis should include:**
   1. the date of your analysis;
   2. your NPV Profile,
   3. use of Excel’s NPV and IRR functions.
2. **Word document professional report** that provides an overview of capital budget and your specific capital budgeting analysis, including items noted below. Your Word report should be of the quality that you would be proud to submit to your Board of Directors or investors (or other clients) regarding your firm’s capital budgeting processes and your capital budgeting analysis of this particular project. Your materials should NOT refer to “the assignment” but rather it should address the case as though it is your firm’s project. Similarly, your reports (Word & PPT) should have a table of contents (Word) and agenda (PPT) for all the appropriate sections, and should NOT address the items below in an “A, B, C… “ format, but rather you should integrate the items into your report and your sections as appropriate.:

2A. **At a minimum, your Word report and PPT presentation should include:** the names of all team members who contributed to the work, the date of your analysis; a table of contents (PPT agenda); an overview and summary of the general capital budgeting process and how it is implemented within organizations; how CFs are modeled along with the complete CF Model for the project; the key capital budgeting decision tools, how they are computed, their pros & cons, and how they are used to make a decision regarding projects; an NPV Profile and discussion of the NPV profile.

In addition to the thorough overview of the capital budgeting process, tools, technique, and key terms in general, your Word report and PPT should provide specific information regarding the case analysis, such as input data/assumptions, cash flow modeling (tables to illustrate), analysis & decision tools applications and results (tables of results), NPV Profile and discussion, etc.

2B. A glossary of capital budgeting concepts and terms (alphabetical) with definitions and comments regarding the implications of the concepts. Provide this in an appendix (at the end), and refer to it within your review of capital budgeting key concepts, processes, and applications. These definitions MUST BE WRITTEN IN YOUR OWN WORDS and CANNOT BE COPIED DIRECTLY FROM ANY SOURCE. You should provide a meaningful definition, as well as some discussion/comments regarding the use and application of the concept.

**At a minimum, the key concepts and terms should include:**

1. ATSV,
2. Cash flow analysis (time zero initial investment cash flows, operating life cash flows, terminal period end of project cash flows),
3. cash flow timeline,
4. conventional cash flow stream, non-conventional cash flow stream,
5. discount rate & cost of capital concept (and implications to valuation)
6. independent projects,
7. IRR - multiple IRRs,
8. IRR,
9. mutually exclusive projects,
10. NPV = 0 meaning and implications,
11. NPV Profile,
12. NPV,
13. opportunity cost,
14. Payback Period,
15. profitability index,
16. ranking conflict of NPV vs. IRR,
17. sunk cost,

2C. REMINDER: As noted in 2A, thoroughly address your capital budgeting analysis, including tables and graphs illustrating the analysis and the results of the analysis.

2D. Based on your NPV Scenario / Risk Analysis Grids, is NPV more sensitive to changing cost of capital or changing Cost of Goods Sold (CoGS) percentages? How do you determine this? Discussions of items 2D & 2E can be relatively brief.

2E. Based on your NPV Scenario / Risk Analysis Grids, is NPV more sensitive to changing cost of capital or changing year one sales level assumptions? How do you determine this?

1. **PowerPoint professional presentation** that provides the following:

3A. An overview & presentation of the key ideas & fundamental concepts of the general capital budgeting concept and process and how it is implemented within organizations, (**see 2A above for additional details**)

3B. A thorough presentation of your capital budgeting analysis (i.e. the problem being analyzed). This portion should include an introduction/overview / summary to the problem, the analysis presentation, and then the conclusions & recommendations for that project with some explanation/indication of why those recommendations are being made. Additionally, this portion should include tables and graphs illustrating the analysis and the results of the analysis.

Note: your PPT presentation should demonstrate PPT best practices. In particular, there **should not be excessively wordy slides**. Bulleted lists and key words should be utilized. Each slide should convey a clear message. Graphs and tables should be clear, with proper labels and captions.

**Capital Budgeting Case:**

Consider the following expansion capital budgeting case.

A capital budgeting decision is being considered that would involve an expansion and simultaneous replacement of old equipment. The project is expected to have a 6-year life for the firm.

This project will replace some existing equipment which currently has a book value (BV) of $200k and an estimated market salvage value of $375k.

The new project will require new equipment costing $2000k, which will be depreciated straight-line to a book value of $200k at the end of 6 years.

Due to new energy efficient technology, replacing the old equipment with the new more efficient equipment will generate an immediate tax credit of 5% of the equipment’s cost. The expansion will require an additional investment in NWC of $200k at time zero.

Sales are expected to increase by $1000k the first year and grow by 15% in years 2 and 3, then by 5% annually during the remaining 6-year life. Cost of goods sold is forecasted to be 45% of the increased sales, and other selling and general administrative expenses are forecasted to be 10% of the increased sales.

It is forecasted that the new equipment will have a salvage value of $300k at the end of the project’s 6-year life.

The firm’s weighted average cost of capital (WACC) for projects of this risk level is 8%. The firm’s marginal tax rate is T = 40%.

**Use the Excel template to complete the capital budgeting analysis.**

Your Excel analysis should clearly indicate the *cash flow model analysis* timeline and should provide the project’s:

* NPV,
* IRR,
* PBP,
* PI,
* Scenario Analysis => completion of the scenario analysis grids which provide NPV of the entire cash flow model under the different scenarios indicated in the grids, and
* the project’s NPV Profile graph (with proper labels).

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