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## Review Classmates: Module 2 Mini-Project

Review by July 20, 11:59 PM PDT

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Investment decision analysis - Cut Here Inc.



by Jan Macierzyński

Submitted on July 16, 2016

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### Part 1

Cut Here, Inc. is considering a new video rendering system for their in-house studio. Currently, there are two options. Each option involves a significant investment in an asset that has a multi-year useful life. The key benefits of each option are cash savings, which Cut Here equates to cash inflows (i.e., compared to the status quo scenario, in which it incurs significant costs in terms of labor, time, etc.).

Use the cash flow information provided in the Assignment Details section of the **Instructions** tab.

Then, use the following measures to assess the two options from a financial perspective. That is, compute the following measures for each option.

* Payback
* Accounting rate of return
* Net present value
* Internal rate of return

**Option A:**  
  
a) payback (assuming cash flows happen at the end of the year)  
  
payback period = 4 years  
[$80 000 return at the end of year 3, $150 000 at the end of year 4]  
  
b) ARR  
total cash savings = $240 000  
cash savings per year = $240 000 / 6 = $40 000  
depreciation expense per year = $100 000 / 6 = $16 667  
accounting return per year = cash savings per year - depreciation expense per year = $40 000 - $16 667 = $23 333,33  
  
ARR = $23 333,33 / $100 000 = 23,33%  
  
c) NPV (assumption of required rate of return = 16%)  
  
NPV = (10 000 / (1+0,16)^1 + 50 000 / (1+0,16)^2 + 20 000 / (1+0,16)^3 + 70 000 / (1+0,16)^4 + 80 000 / (1+0,16)^5 + 10 000 / (1+0,16)^6) - 100 000 = $39445,83  
  
d) IRR = 28%  
  
-------------------------------------------------------------------------------------------------------------------------------------------  
**Option B:**  
  
a) payback (assuming cash flows happen at the end of the year)  
  
payback period = 6 years  
[$27 000 return at the end of year 5, $417 000 at the end of year 6]  
  
b) ARR  
total cash savings = $417 000  
cash savings per year = $417 000 / 6 = $69 500  
depreciation expense per year = $250 000 / 6 = $41 666,67  
accounting return per year = cash savings per year - depreciation expense per year = $69 500 - $41 666,67 = $27 833,33  
  
ARR = $27 833,33 / $250 000 = 11,13%  
  
c) NPV (assumption of required rate of return = 16%)  
  
NPV = (1 000 / (1+0,16)^1 + 2 000 / (1+0,16)^2 + 3 000 / (1+0,16)^3 + 1 000 / (1+0,16)^4 + 20 000 / (1+0,16)^5 + 390 000 / (1+0,16)^6) - 250 000 = $-75582,6  
  
d) IRR = 9%

Read the response to Part 1 and assign points below. Be sure to see the detailed rubric on the Instructions tab before assigning points.

* 0 pts - 0 points: No answer, completely irrelevant answer.
* 5 pts - 5 points: Insufficient, incomplete, lacks supporting evidence.
* 7 pts - 7 points: Passing, meets expectations.
* 9 pts - 9 points: Well above average, exceeds expectations.
* **10 pts - 10 points: Superior performance, excellent.**

### Part 2

Based on what you calculated in Part 1, which option would you recommend to Cut Here management?

I would recomment the Cut Here management to invest in option A and drop option B due to the profitablitiy analysis based on NPV. Project A is going to bring value to the firm, whereas project B is estimated to generate losses.

Read the response to Part 2 and assign points below. Be sure to see the detailed rubric on the Instructions tab before assigning points.

* 0 pts - 0 points: No answer, completely irrelevant answer.
* 5 pts - 5 points: Insufficient answer, incomplete, lacks supporting evidence.
* 7 pts - 7 points: Passing, meets expectations.
* **9 pts - 9 points: Well above average, exceeds expectations.**
* 10 pts - 10 points: Superior performance, excellent.

### Part 3

Describe some of the strengths and weaknesses of your analysis (i.e., specific measures, etc.). Also, what other considerations might influence your recommendation?

As for the payback period measure, the analysis provides us with a quite useful information on the period in which investment is recovered, but what takes place after this period (a gain of profits) is completely overlooked. Hence, one can not infer much from only analising the payback period (especially under assumption of cash flows happening in the end of the fiscal year).

Solely relying on ARR is also not possible, due to the fact that this measure suffers from all the problems related to accrual accounting (for example vulnerability to earnings management). It also doesn't focus on cash flows, which are often crucial to firms' activities, including investments. However, the accounting rate of return allows us to compare the possible investment options with other accounting-based indicators.  
I consider the NPV the most informative measure among those calculated. Despite the uncertainty about the timeliness of future cash flows, this is a very powerful method to compare different opportunities and come up with exact measurement of their profitability.

IRR is the extended analysis of the NPV consideration and might also suffer from the same problems.  
  
Except for purely financial considerations presented above several qualitative factors might be concerned, but the exercise does not provide and directions on the matter. For example, my recommendation on option B could have been different, if the project had a significant value to promotional activities of the firm or if it would bring benefits for the society.

Read the response to Part 3 and assign points below. Be sure to see the detailed rubric on the Instructions tab before assigning points.

* 0 pts - 0 points: No answer, completely irrelevant answer.
* 5 pts - 5 points: Insufficient answer, incomplete, lacks supporting evidence.
* 7 pts - 7 points: Passing, meets expectations.
* **9 pts - 9 points: Well above average, exceeds expectations.**
* 10 pts - 10 points: Superior performance, excellent.

Please provide any overall feedback that you have for the author of this assignment. What is one strength of the submission? What is one area of improvement that you would like to suggest?

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