## Review Classmates: Module 2 Mini-Project

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| **Reviews** | 19 complete |

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Cut Here Inc. Investment Decision



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Submitted on June 6, 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

From available investment information for Options A and B (Option A initial investment of $100,000 and Option B initial investment) we have:

**1) Pay Back Period:**

***Option A***

Year 1: $100,000 - $10,000; balance: $90,000.

Year 2: $90,000 - $50,000; balance: $40,000.

Year 3: $40,000 - $20,000; balance: $20,000.

Year 4: As the cash flow for year 4 of $70,000 is far in excess of the balance of $20,000, the exact payoff of the balance within the year is computed; $20,000 / $70,000. = 0.29 fraction of year 4. **Thus, Pay back period for Option A is 3.29years**

***Option B***

Year 1: $250,000 - $1,000; balance: $249,000.

Year 2: $249,000 - $2,000; balance: $247,000

Year 3: $247,000 - $3,000; balance $244,000

Year 4: $244,000 - $1,000; balance $243,000

Year 5: $243,000 - $20,000; balance $223,000

Year 6: As the cash flow for year 6 of $390,000 is far in excess of the balance of $223,000, the exact payoff of the balance within the year is computed as: $223,000 / $390,000 = 0.57 fraction of year 6. **Thus the pay back period for Option B is 5.57 years.**

**2) Accounting Rate of Return**

***Option A***

Initial Investment = $100,000. Total Returns = $240,000. Investment horizon = 6 years.

Financial implication; Investment = $100,000 / 6 = 16,667. Returns = $240,000 / 6 = $40,000.

Thus Accounting Rate of Return = { ($40,000 - $16,667) / $100,000 } x 100. = **23.33%**

**Option B**

Initial Investment = $250,000. Total Returns = $417,000. Investment horizon = 6years.

Financial implication; investment = $250,000 / 6 = $41,667. Returns = $417,000 / 6 = $69,500.

Thus Accounting Rate of Return = { ($69,500 - $41,667) / $250,000 } x 100 = **11.13%**

**3) Net Present Value**

NPV = ∑ {Net Period Cash Flow/(1+R)^T} - Initial Investment. Where R is the rate of return and T is the number of time periods.

**Assumption:** "Cut Here" requires a rate of return of 15% for its capital investment decisions

***Option A***

For the proposed $100,000 investment over the six year period, the NPV can be computed as follows for available cash flow information:

Year 1: $10,000[(1.15)^(-1)] = $8,695.65

Year 2: $50,000[(1.15)^(-2)] = $37,807.18

Year 3: $20,000[(1.15)^(-3)] = $13,150.32

Year 4: $70,000[(1.15)^(-4)] = $40,022.73

Year 5: $80,000[(1.15)^(-5)] = $39,774.14

Year 6: $10,000[(1.15)^(-6)] = $4,323.28

Summing the PV gives: $143,773.30. Thus the NPV for Option A is: $143,773.30 - $100,000 = **$43,773.30 (positive value)**

***Option B***

For the proposed $250,000 investment over the six year period, the NPV can be computed as follows for available cash flow information:

Year 1: $1,000[(1.15)^(-1)] = $869.56

Year 2: $2,000[(1.15)^(-2)] = $1,512.29

Year 3: $3,000[(1.15)^(-3)] = $1,972.55

Year 4: $1,000[(1.15)^(-4)] = $571.75

Year 5: $20,000[(1.15)^(-5)] = $9,943.53

Year 6: $390,000[(1.15)^(-6)] = $168,607.76

Summing the PV gives: $183,477.44. Thus the NPV for Option B is: $183,477.44 - $250,000 = - **$66,522.56 (negative value)**

**4) Internal Rate of Return**

The Internal Rate of Return (IRR) is the discount rate that where the net present value of the project is equal to $0

***Option A***

From above the NPV at 15% discount rate is positive and greater that zero at **$43,773.30**. Similarly,

- NPV at 20% discount rate is **$23,886.53.** This is positive and greater than zero.

- NPV at 25% discount rate is **$7,747.84.**  This is positive and greater than zero.

- NPV at 30% discount rate is **-$5,491.53**. This is negative and below zero.

Thus the IRR for Option A is a discount rate between 25% and 30%. This is computed as:

30% - [5491.53 / (5491.53 + 7747.84)]x5% = 30% - (5491.53 / 13239.37)x5% = 30% - (0.4148)x5% = 30% - 2.07% = 27.93%

Thus Option A Internal Rate of Return (IRR) is **27.93%**

***Option B***

From above the NPV at 15% discount rate is negative and below zero at -**$66,522.56**. Similarly,

- NPV at 12% discount rate is -**$35,807.22.** This is still negative and below zero.

- NPV at 10% discount rate is -**$11,937.81.**  This is still negative and below zero.

- NPV at 8% discount rate is **$15,134.95**. This is positive and greater than zero.

Thus the IRR for Option B is a discount rate between 10% and 8%. This is computed as:

8% + [15134.95 / (11937.81 + 15134.95)]x2% = 8% + (15134.95 / 27072.76)x2% = 8% + (0.5590)x2% = 8% + 1.12% = 9.12%

Thus Option B Internal Rate of Return (IRR) is **9.12%**

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?

On the basis of about computations and analysis, the recommendation to Cut Here Inc is to invest in **Option A.** This is premised on the following:

- The pay back period is shorter at 3.3years compared to 5.6years for Option B.

- The accounting rate of return is better as 23.33% compared to 11.13% for Option B

- The NPV at 15% discount rate is positive at $43,773.30 compared to a negative NPV at 15% of -$66,522.56 for Option B

- The IRR for Option A is 27.93% compared to 9.12% for Option B.

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?

**1) Pay Back Period**

Strength

- A very simple measure to calculate and analyze

- A good indicator of cash availability

- Can be used as a measure of inherent risk in a project, in view of uncertainty associated with future cash flow.

Weakness

- Does not take into account "Time Value of Money"

- Does not take into account cash flows after pay back period

**2) Accounting Rate of Return**

Strength

- It is simple to calculate and analyze

- It aligns with the financial statement effect of capital investment

- It recognizes the profitability factor of investment

Weakness

- Does not take into account "Time Value of Money"

- It uses accounting income rather than cash flow information. Thus it is not suitable for projects for which the viability may depend upon timely cash inflows.

**3) Net Present Value**

Strength

- Takes into account "Time Value of Money"

- It is cash flow based.

- Allow for comparability of projects and investments

Weakness

- Entails assumptions that may affect the timing of cash flows.

- It is subject to uncertainties

- It does not take into account the relative size of the project. For example, say Project A requires initial investment of $7 million to generate NPV of $2 million while a competing Project B requires $3 million investment to generate an NPV of $1 million. Based on NPV results the tendency is to go with Project A. On the other hand, Project B provides better value dollar for dollar.

**4) Internal Rate of Return**

Strength

- Takes into account "Time Value of Money"

- It is cash flow based.

- Allow for comparability of projects and investments, where the decision is premised on accepting a project only if its IRR is NOT less than the target internal rate of return of the Company or investor.

Weakness

- Entails assumptions that may affect the timing of cash flows.

- It is subject to uncertainties

**Other considerations**

i) Access and availability of funds/funding for project.

ii) Company expected/targeted IRR. This has a strong potential on if a company will accept/execute a project or not.

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?

Submit Review

Well done !!!

Kindly evaluate mine, thanks in advance.

<https://www.coursera.org/learn/managerial-accounting-tools/peer/crAeu/module-2-mini-project/discussions/threads/jBqzpFyDEeaCxw4CtnLVoQ>

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