**IT Project Management Exercise**

**Project Financial Analysis**

With the projection about inflow and outflows of the project as follows:



It was calculated that the project will have financial characteristic as follows if the discount rate is 11%:



With undiscounted cash flow, payback period can be found by calculating total cash flows for each year.



Payback period for this project can be calculated by using linear regression on the year preceding and following break even point. The payback period for this project is:



With discounted cash flow, discounted payback period can be found by calculating total discounted cash flows for each year.



The calculated discounted payback period for this project is:



So in conclusion, this project would have a value of:

|  |  |
| --- | --- |
| **Discount Rate** | 11% |
| **NPV** | $316,501.99 |
| **IRR** | 20.05% |
| **Payback Period** | 4 Years 7 Months |
| **Discounted Payback Period** | 6 Years 3 Months |

This project has positive value of NPV which means that it would yield profit for the investment. This project also has an IRR value of 20% which is well above the discount rate of 11%. This condition would mean that the project would have a yield of around 9% higher per annual compared to traditional investment on bank. The project would also reach breakeven point within its 10 years lifecycle. The discounted payback period or can also be called its true payback period is 6 Years and 3 Months. Because of those reasons, the recommendation for this project is that this **project should be executed**.

**Technology Usage and Economic Growth Analysis**

Projected economic condition for the next 10 years is 60% of high growth, 30% of normal growth, and 10% of decline. Based on attached cash flow prediction on various economic it can be concluded as such:

|  |  |  |
| --- | --- | --- |
|  | **Don’t Use Technology** | **Use Technology** |
| **High Growth** | NPV = $608,627 IRR = 26.92% | NPV = $1,012,877 IRR = 31% |
| **Normal Growth** | NPV = $316,501  IRR = 20.05% | NPV = $136,501 IRR = 14% |
| **Decline** | NPV = ($34,048)  IRR = 9.85% | NPV = ($214,048) IRR = 5% |

If the economic condition of High Growth, using higher technology would give a bigger yield compared to not using it. It can be seen from higher value of IRR (31%) and NPV ($1,012,877) compared to NPV and IRR values of not using the technology. On normal growth, not using higher technology would prove to be more profitable as seen through the NPV and IRR values of $316,501 and 20.05% compared to $136,501 and 14%. On decline, using or not using higher technology would give a loss to the company. Though using higher technology would yield a bigger loss compared to not using the technology. As such, it would be wiser not to invest on the project if the condition of economy is in decline.

From the previous description, a decision tree can be mapped if it’s assumed that the condition of economy can be predicted correctly. The decision tree is as follows:

NO (IN DECLINE)

YES

NO

YES

But, should the economy cannot be predicted, it would be much safer to **use normal technology** rather than higher technology because it would give a considerable profit on either high growth or normal growth compared to the discount rate. It would only give a relatively small loss if the economy is in decline. This decision should be taken because should the higher technology be used, the project would only give greater profit only when the economy is in high growth. On normal growth using higher technology would yield smaller profit compared to normal technology and on decline, using higher technology would give a heavier loss compared to normal technology.

Attachment



