1. **Introduction**

Capital budgeting is used by businesses when selecting projects which add value to the company over the long term. Specifically, capital budgeting forms the cornerstone of decision making for any profit-making entity seeking to maximize its shareholders' wealth i.e. it is used to select from potential investments those which will maximize return to the shareholders. In this regards several different capital budgeting approaches are used including Net Present Value, Internal Rate of Return, and Payback period amongst others. (Dayananda, 2008)

Net present value is one of the most commonly used capital budgeting techniques whereas any project with a positive NPV is considered to add value to the business and hence deemed acceptable. The key advantage of the said approach is that it only focuses on actual cash flows but also takes into the account time value of money making the method most widely used and accepted within the business decision-making process. (Dayananda, 2008)

The internal rate of return on the other hand is the rate at which an investment NPV is equal to zero or a rate at which a project breaks even. Under the IRR decision rule, a project is deemed acceptable if its IRR is greater than the overall cost of capital or businesses hurdle rate. The approach like NPV takes into the account time value of money however in case of a conflict between NPV and IRR approaches NPV approach is preferred as it directly takes into account the addition in shareholders wealth. (Fabozzi, 2002)

The payback period on the other hand takes into account the number of years it will take a business to recover its initial investment from projects cash flows. Under this approach, a project with the shortest payback period is deemed to be most attractive and considered for selection. The approach however does not take into account the time value of money nor does it consider the overall profitability of the projects. (Fabozzi, 2002)

1. **IRR analysis**

IRR of Projects A – E was calculated using excel’s IRR function and projected cash flows for each project. Results for the IRR analysis are presented below;

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Project A** | **Project B** | **Project C** | **Project D** | **Project E** |
| **Initial Investment** | (100,000) | (25,000) | (40,000) | (10,000) | (150,000) |
| **Year 1** | 50,000 | 15,000 | 20,000 | 7,000 | 100,000 |
| **Year 2** | 40,000 | 10,000 | 15,000 | 4,000 | 25,000 |
| **Year 3** | 20,000 | 5,000 | 5,000 | 2,000 | 10,000 |
| **Year 4** | 10,000 | 1,000 | 5,000 | 1,000 | 10,000 |
| **Year 5** | - | 1,000 | - | - | 10,000 |
| **Year 6** | - | 1,000 | - | - | 10,000 |
| **IRR** | **10%** | **16%** | **7%** | **22%** | **5%** |

1. **Investment Opportunity Schedule**

An Investment Opportunity Schedule in simple terms represents the list of projects available to a business arranged in descending order of internal rate of return. The schedule indicates that Project D has the highest IRR whereas project E represents the lowest IRR. Further, project D is accompanied by the lowest initial investment requirements whereas project E has the higher capital required. (Fabozzi, 2002)

Graphical representation of Investment Opportunity Schedule for the business is presented below;

1. **Investment Selection**

The company’s cost of capital and hence hurdle rate for IRR decision making was assumed to be 10% whereas the company also has limited capital availability of USD 170,000. Under said conditions following projects meet the criteria for being accepted;

|  |  |  |  |
| --- | --- | --- | --- |
|  | **IRR** | **Hurdle Rate** | **Accept / Reject** |
| Project A | 10.22% | 10% | Accept |
| Project B | 16.01% | 10% | Accept |
| Project C | 6.54% | 10% | Reject |
| Project D | 21.83% | 10% | Accept |
| Project E | 5.03% | 10% | Reject |

Further, if all three projects as indicated above are accepted the company will remain within its available capital budget of USD 170,000 as total required investment within the three projects is USD 135,000.

**References**

Dayananda, D., 2008. *Capital Budgeting: Financial Appraisal of Investment Projects*. Cambridge.

Fabozzi, F., 2002. *Capital Budgeting: Theory and Practice*. Wiley.