

Financial Management and Planning

Capital Project Appraisal-Business Report

Capital Investment Report

MSc International Innovation Management (IIM)

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Introduction

As a project manager for our manufacturing and engineering industry, I have identified a capital investment project that will bring an innovation change to our business, add value to our current process and bring more productivity through efficiency improvements within our organization. The purpose of this report is to present the project to the senior management team and highlight the cost of the project and its expected improvements. The project has been carefully evaluated, and the expected improvements have been calculated, along with the cost of the project. This report will outline the benefits of the project and highlight the financial appraisal tools used to measure its feasibility.

Project Objective- The project aims to introduce a new software system that will automate our current manual process, increasing efficiency and accuracy (particularly in engineering and purchasing, manufacturing, etc. in all departments). The new system/tool (PLM- Product Lifecycle Management) will streamline the process, reduce processing time, and eliminate errors, thereby reducing the need for manual intervention. The project will bring about significant cost savings, improved customer service, and increased productivity.

Timeline for Implementation: The implementation of this project will take approximately 18 months. The first six months will be spent on research and development including system design and implementation planning. The following six months will be devoted to system development, software/hardware installation and testing, and the final six months will be spent on staff training, system rollout and implementation.

Cost of the Project- The total cost of the project is £250,000. This includes software development costs, hardware costs, and training costs. The cost of the project will be spread over the lifespan of the project, which is expected to be 6 years.

Issues with Implementation- The implementation of the new system will require some changes in the current process, which may cause some disruption and downtime. However, we have a robust implementation plan that will ensure minimal disruption to our current operations. We will also provide training to our employees to ensure a smooth transition to the new technology.

Financial Appraisal Tools- We have evaluated the project using financial appraisal tools such as Payback Period, Internal Rate of Return (IRR), and Net Present Value (NPV), Profitability Index (PI), Benefit Cost Ratio (BCR).

Payback Period:

The payback period is the time it takes for an investment to recover its initial cost, as calculated over a predetermined number of years. It is a useful tool for capital budgeting, which is based on the principle of capitalizing expected future cash flows to determine the present value of a capital asset or investment.

Payback period= the amount of the investment / the annual cash flow or benefits from the project.

Benefits: The primary benefit of calculating payback period is that it is relatively straightforward and easy to understand. Payback period takes cash outflows and inflows into consideration, providing investors with a clearer picture of how long it will take them to break even on a given investment.

In our appraisal capital investment project, the payback period is 4 years from 6 years of investment of £250,000 for the new system (PLM- Product Lifecycle Management).

Capital Appraisal Models:

The New System/Tool (PLM- Product Lifecycle Management)							
Project	Investment	Year 01	Year 02	Year 03	Year 04	Year 05	Year 06
Present Value (PV)	-£250,000	£60,000	£80,000	£60,000	£50,000	£130,000	£120,000
Benefits	-£250,000	-£190,000	-£110,000	-£50,000	£0	£130,000	£250,000
Payback period (PB)	4						
Discount Rate (WACC)	9%						
Denominator	1	0.917	0.842	0.772	0.708	0.65	0.596
Future Value (FV) $((PV \times (1+9\%)^t))$	-£250,000	£55,020	£67,360	£46,320	£35,400	£84,500	£71,520
NPV Excel	£110,176						
Internal Rate of Return (IRR)	21%						
Profitability Index (PI)	2.44						
Benefit Cost Ratio (BCR)	1.44						

Discount Rate (WACC):

Discount Rate (WACC) is a term used to describe the rate of return that is used to calculate the present value of a future cash flow. WACC refers to the overall or weighted average cost of a company's capital, which includes both borrowings and equity investments. This is calculated in terms of Future Value (FV) considering the Present Values by applying a discounted rate of 9% Weighted Average Cost of Capital (WACC) for a particular period. WACC of 9% is the rate at which the business has to pay £0.09 to the investors in return of every £1.

Benefits: WACC is beneficial for estimating the rate of return of an investment, and is also useful for estimating the net present value of any future investment. WACC helps businesses to determine the cost of capital for any new investments.

Present Value (PV):

Present Value is a financial concept used to compare the value of an investment today compared to some future value it may have. It is used to estimate the value of a series of periodic payments over a certain period of time.

Benefits: PV is used to determine the net present value of investments, which is beneficial for assessing the profitability and risk levels associated with any venture. PV can also help to determine cash flows for a company and its projects accurately, as well as helping to determine the appropriate discount rates for cash flows occurring at different times.

In our appraisal capital investment project, the PVs are different as highlighted for 6 years for the investment of £250,000 for the new system (PLM- Product Lifecycle Management).

Future Value (FV):

Future Value (FV) is a financial concept used to estimate the value of an investment at some future date, typically when the investment matures. It is used to compare the present value of an investment to the value it may reach at some future date.

Benefits: FV is useful for assessing an investment's profitability and risk, as well as measuring the rate of return of any given investment. FV can also be used to compare different investments and determine which may be the most profitable over the long term.

In our appraisal capital investment project, the FVs are calculated as highlighted for 6 years for the investment of £250,000 for the new system (PLM- Product Lifecycle Management).

Net Present Value (NPV), Discounted Cash Flow:

Net Present Value (NPV) is a financial term used to calculate the difference between the present value of an investment and the total present cost of the investment. It is a measure of the amount of money invested, usually taking inflation into consideration.

NPV explores Cash flow In and Outs of a project with an adjustment for the Future value of money based on a discounted rate also called the weighted average cost of Capital adjustment (WACC).

$$\text{NPV} = \text{Cash flow} / ((1 + \text{discount rate})^{\text{time periods}})$$

Benefits: NPV is beneficial for assessing the profitability of any given investment or venture, and helps to determine the cost of any expected returns or cash flows. Additionally, NPV is useful for comparing different investments and determining which has the most potential for profitability in the future.

It is the function of the Future Value (FV) and the investment made. The greater the value of the NPV, the greater the chances of certainly of the pursuing the project. The investment that passes the NPV test i.e., $\text{NPV} > 0$, will increase the confidence of the investor & the value of the shareholder and where it fails $\text{NPV} < 0$, it will hurt the company.

In our appraisal capital investment project, the NPV is £110,176 which has calculated as highlighted with excel formula for the investment of £250,000. The NPV is positive with a WACC of 9%, which indicates that the project will generate a positive return on investment.

Internal Rate of Return (IRR):

Internal Rate of Return (IRR) is a financial metric used to measure the rate of return of an investment or venture over a certain period of time. It calculates the rate of return of the investment based on its current market value and its expected future cash flows.

Benefits: IRR is used to evaluate the profitability of investments, ventures, and projects, helping to estimate the rate of return of a given investment. Additionally, it is useful for comparison and helps investors to decide which investments are likely to be most profitable over the long term.

If IRR value is greater then, the return from the business is also better. In our appraisal capital investment project, the IIR is 21%. The IRR is greater than 20%, which indicates that the project will generate a return greater than the cost of capital.

Profitability Index (PI):

Profitability Index (PI) is a measure of the rate of return of an investment or venture relative to its cost, which is calculated as the net present value of a project divided by its initial cost.

$$PI = \text{NPV of Cash Flows} / \text{Investment}$$

The rule is that PI or ratio greater than one indicates that the project should proceed. A PI or ratio below one indicates that the project should be abandoned.

Benefits: PI is a useful measure for comparing different investments in terms of their potential profitability, as it measures the expected rate of return on a given investment relative to its cost. PI is also beneficial for helping to identify and prioritize investments, and helps to quickly assess the expected rate of return on any given project.

In our appraisal capital investment project, the PI is 2.44 which ranks higher in our Profitability Index.

Benefit Cost Ratio (BCR):

Benefit Cost Ratio (BCR) is a financial metric that measures the value of the returns relative to the cost of an investment or venture. It is calculated as the net present value of the benefits of an investment divided by its cost.

$$BCR = \text{Net Present Value} / \text{Initial outlay}$$

Benefits: BCR is a useful tool for assessing the cost effectiveness of any given investment, and is often used as an indication of whether or not a given project is worth pursuing. It can also help to determine the optimal level of investment for a given venture, and also provides investors with an indication of the expected returns relative to the cost.

This is the ratio of the total future cash flows to the investment. If the $BCR > 1$, then the investment makes profit and if $BCR < 1$ then it incurs. Hence BCR should be greater than one to pursue a project.

In our appraisal capital investment project, the BCR is 1.44 which is greater than one and also less than PI value.

Conclusion and Recommendation

Based on our calculations, the project meets all the criteria. The payback period is 4 years from 6 years of investment of £250,000 for the new system (PLM- Product Lifecycle Management), the IRR is 21%, and the NPV is positive at a WACC of 9%.

By considering our investment in this project and the all calculations, cost benefits calculated/highlighted in this report, it identified project offers the potential for increased productivity, cost savings and improved efficiency and it will streamline the process, reduce processing time, and eliminate errors, thereby reducing the need for manual intervention.

In conclusion, the proposed capital investment project will bring significant improvements to our organization, including increased productivity, improved accuracy and real-time insights. The financial appraisal tools used indicate that the project is financially feasible and will generate value for the organization.

Based on the above findings, this report recommends that the project be implemented as it has the potential to bring long term returns and benefit the business. We also recommend that the senior management team approves the project and provides the necessary funding for its implementation.

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