

Assessment 2

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Analysis of Financial and Non-Financial Appraisal Methods for Effective Project Evaluation

Introduction

In this essay, we will evaluate three project proposals a business can undertake to gain a practical understanding of project appraisal. This is a vital process in modern business management, guiding decision-makers to make informed choices about investments and resource allocation. (Brigham et al., 2017) When analysing these three distinct projects, we seek to utilise financial and non-financial methods to create accurate project estimates and the optimal financing strategy.

The project appraisal process is vital in identifying the most promising ventures for every business. Companies can assess each project's economic feasibility and profitability using financial methods such as payback, net present value (NPV), and return on investment (ROI). These financial techniques provide valuable insight into possible investment opportunities' expected benefits, risks and economic impact. (Kerzner, 2017)

In addition to evaluating the financial aspects, non-financial elements should also be included in the evaluation process for all projects. Factors such as social impact, environmental sustainability, and stakeholder interests are fundamental for a project's overall success and sustainability. By applying non-financial techniques such as the checklist method and the multi-weighted scoring model, we aim to fully understand the impact each project can have on the business. (Epstein, Adriana Rejc Buhovac and Elkington, 2014)

Projects overview

In pursuing progress and sustainability, businesses continually seek innovative projects to move them towards a brighter and more prosperous future. However, the realm of possible company projects is endless, and all potential investments must be carefully considered. The evaluation process is known as project assessment. It is essential to prove the viability of a project to the decision-makers within the business and ensure that the company has the necessary funds to run the project to completion. (Brealey, Myers and Allen, 2020) For a more practical understanding of project appraisal, this essay explores three visionary projects that hold the potential for increased profitability, reduce risks and achieve the organisation's strategic goals. The projects to be considered are Solar Panel Installation, investment in automation, and launching an online store.

Solar panel installation

The project is for installing Solar Panels on the roof of the business premises. It represents a step towards utilising the sun's renewable energy to power the business. By integrating solar panels into the infrastructure, organisations can reduce their reliance on traditional energy sources, significantly reduce greenhouse gas emissions, and mitigate their carbon footprint. This project demonstrates a commitment to environmental responsibility and presents cost-saving opportunities for the business in the long run. Furthermore, embracing solar energy opens the door to a greener, more sustainable future for businesses, and companies help improve the businesses' corporate image.

The project's mission is for the business to champion renewable energy and sustainability by utilising Solar Panels as a cleaner energy source. Through these panels, the company can reduce its carbon footprint, decrease reliance on traditional energy sources, and drive positive change for organisations. By incorporating solar energy into business operations in the future, the organisation can be known for environmental responsibility, innovation and positive contribution to combat climate change.

Investment in Automation

The second project to be considered is an investment in automation, implementing cutting-edge software and hardware solutions to automate repetitive tasks and improve workflow within the business. In this age of technological advancement, utilising automation is imperative for businesses to thrive and remain competitive. Through automation, fewer manual interventions will be required, the overall efficiency and resource utilisation will be increased, and the company will gain a competitive edge.

The project mission is to transform business operations through a strategic investment in automation completely. By embracing innovative technologies, the business aims to enhance efficiency, minimise manual errors and streamline processes. With this project, the company intends to move to the forefront of innovation and become renowned for operational efficiency. The focus is driving corporate growth and competitiveness with technology integration and automation's power.

Launching an Online Store

The project for launching an online store represents a shift towards e-commerce, where the business can extend its market reach beyond physical boundaries. By creating an online shopping platform, the company's products will be available to a global audience, and the shopping experience will be more personalised and convenient for customers. The business is looking to engage with customers 24/7, optimise marketing strategies and build long-term customer relationships, unlocking new possibilities for growth and increasing brand visibility.

The project aims to improve customer connections and expand market reach by embracing the digital sales side. The aim is to create an enjoyable and unique shopping experience that overcomes geographical limitations. By launching an online store, it intends to become popular in the digital marketplace, create a global community of loyal customers, and sustain business growth.

Financial project appraisal

Financial appraisal of projects systematically evaluates the financial profitability of a proposed project. It is done at the project's initial review stage and helps make investment decisions. The focus is on the financial aspects as we assess the expected costs, cash flows, revenues and other metrics to determine economic feasibility and alignment with the organisation's objectives. By appraising projects, businesses can make well-informed decisions, prioritise investments, and allocate resources to the best projects for the company, which are only sometimes the most profitable ones. (Ross, Westerfield and Jordan, 2020)

Payback Method

The business world is always complex, and many factors must be considered when appraising a project. Essential aspects to consider are the availability of money within the business and how long it will take to receive the income. One of the commonly used methods of project appraisal is payback. The underlying assumption is that the payment will be greater than the initial expenses, and we measure the time it will take to recover the project investment. Projects with shorter payback times are generally more attractive, and with this method, the business can eliminate potentially risky projects. (Brigham et al., 2017)

On the other hand, most business projects take multiple years to complete, and the payback method needs to consider ¹⁸the time value of money. For example, with the inflation in the economy, the value of one pound in the future is likely to be lower than that of one pound today, and the effects on the time value of money can be enormous. Furthermore, this method only accounts for cash flows beyond the payback period; as a result, it may only partially capture the long-term profitability of the investment. (Van Horne and Wachowicz, 2010)

The formula for calculating the payback period is as follows:

$$\text{Payback} = \frac{\text{Initial Investment}}{\text{Projected Annual Cashflow}}$$

(Van Horne and Wachowicz, 2010)

The calculations for each project are:

	Solar Panel Installation (A)	Investment in Automation (B)	Launching an Online Store (C)
Initial investment	£340,000	£1,200,000	£140,000
Projected Annual Cashflow	£75,000	£380,000	£60,000

$$\text{Payback A} = \frac{340000}{75000} = 4.5 \text{ Years}$$

$$\text{Payback B} = \frac{1200000}{380000} = 3.2 \text{ Years}$$

$$\text{Payback C} = \frac{140000}{60000} = 2.3 \text{ Years}$$

We can also calculate the rate of return as follows:

$$\text{Payback A} = \frac{75000}{340000} \times 100 = 22 \%$$

$$\text{Payback B} = \frac{380000}{1200000} \times 100 = 31.6\%$$

$$\text{Payback C} = \frac{60000}{140000} \times 100 = 42.8\%$$

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Net Present Value (NPV)

Net Present Value (NPV) is a more realistic financial appraisal method used to evaluate the profitability of an investment over time. It determines the present value of all expected cash inflows and outflows associated with the project. This method considers the time value of money and helps the business include factors like inflation

and the opportunity cost of investing elsewhere when making the investment decision.
A positive NPV indicates that the investment is expected to generate more cash inflows than outflows increasing the shareholder value. On the other hand, a negative NPV suggests that the investment will not generate enough returns to cover the initial investment. (Brealey, Myers and Allen, 2020)

However, Net Present Value (NPV) has certain limitations that should be considered when using it as the primary input for decision-making. For example, choosing the appropriate discount rate is highly subjective and can vary among organisations. The discount rate determines the present value of future cash flows and can significantly impact the NPV result. Furthermore, NPV focuses only on financial metrics and does not consider factors such as environmental impact, social responsibility, or strategic alignment of the project with the company's objectives. (Brealey, Myers and Allen, 2020)

The formula for NPV is:

NPV = PV - Initial Investment

$$PV = \frac{s}{\left(1 + \frac{r}{100}\right)^t}$$

Where:

PV = present value

S = future value or cash flow

r = discount rate

t = time periods in years

(Brealey, Myers and Allen, 2020)

Solar panel installation Project

$$Yr1: PV = \frac{75000}{\left(1 + \frac{10}{100}\right)^1} = \frac{75000}{1.10} = \mathbf{68181.81}$$

$$Yr2: PV = \frac{68181.81}{1.10} = \mathbf{61983.47}$$

$$Yr3: PV = \frac{61983.47}{1.10} = \mathbf{56348.61}$$

$$Yr4: PV = \frac{56348.61}{1.10} = \mathbf{51226.00}$$

$$Yr5: PV = \frac{51226.00}{1.10} = \mathbf{46569.09}$$

$$NPV = 284309.00 - 340000 = \mathbf{-£55691}$$

Investment in automation (B)

$$Yr1: PV = \frac{380000}{\left(1 + \frac{10}{100}\right)^1} = \frac{380000}{1.10} = \mathbf{345454.54}$$

$$Yr2: PV = \frac{345454.54}{1.10} = \mathbf{314049.58}$$

$$Yr3: PV = \frac{314049.58}{1.10} = \mathbf{285499.62}$$

$$Yr4: PV = \frac{285499.62}{1.10} = \mathbf{259545.11}$$

$$Yr5: PV = \frac{259545.11}{1.10} = \mathbf{235950.10}$$

$$NPV = 1440498.97 - 1200000 = \mathbf{£240,499}$$

Launching an online store (C)

$$Yr1: PV = \frac{60000}{\left(1 + \frac{10}{100}\right)^1} = \frac{60000}{1.10} = \mathbf{54545.45}$$

$$\text{Yr2: } PV = \frac{54545.45}{1.10} = \mathbf{49586.77}$$

$$\text{Yr3: } PV = \frac{49586.77}{1.10} = \mathbf{45078.88}$$

$$\text{Yr4: } PV = \frac{45078.88}{1.10} = \mathbf{40980.80}$$

$$\text{Yr5: } PV = \frac{40980.80}{1.10} = \mathbf{37255.27}$$

$$\text{NPV} = 227447.20 - 140000 = \mathbf{\pounds 87,447}$$

Decision makers also need to consider the amount required to invest. Therefore, it's worthwhile to express NPV as a percentage of the initial investment, known as the profitability index.

$$\text{Profitability index} = \frac{\text{Net Present Value}}{\text{Initial Capital Cost}}$$

(Berk et al., 2019)

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Return on Investment

Return on Investment (ROI) is a project appraisal method that measures an investment's financial performance and profitability. It is a widely used financial measure to assess the efficiency and effectiveness of investment projects. ROI calculates the annual profit generated by an investment as a percentage of the initial investment cost. The importance of ROI as a project evaluation method lies in its simplicity and ease of use. Companies utilise ROI to compare different investment opportunities and prioritise projects with higher potential returns. It is a valuable decision-making tool, enabling companies to allocate resources wisely and make informed investment decisions. (Parrino et al., 2018)

However, it is essential to understand the underlying limitations of ROI. As a straightforward metric, ROI does not consider the time value of money, the duration of the investment or the timing of cash flows. It also does not account for non-financial factors such as environmental pollution, corporate image or the opportunity cost of choosing one investment over another. Therefore, relying on ROI alone for project appraisal is not recommended. (Brealey, Myers and Allen, 2020)

The formula for calculating ROI is:

$$\text{Return on investment} = \frac{\text{Average Annual Profit} \times 100\%}{\text{Initial Investment}}$$

Where:

Average Annual Profit = The annual revenue generated by the investment minus the total costs associated with the investment.

Initial Investment = The total cost required to initiate the investment project.

(Brealey, Myers and Allen, 2020)

Comparing the projects

Project A $75000/340000 \times 100 = 22.05 \%$

Project B $380000/1200000 \times 100 = 31.66 \%$

Project C $60000/140000 \times 100 = 42.85 \%$

Non-financial methods

Companies often have objectives to pursue different than just profit and financial returns. This is where non-financial appraisal methods can support decision-makers in project selection. These methods provide a more thorough analysis beyond financial metrics and consider various aspects of a project. For example, non-financial project

appraisal methods can focus on strategic objectives such as capturing more significant market share, enhancing brand recognition or reducing dependency on unreliable sources. (Cleland and Ireland, 2010)

The checklist method

The checklist project appraisal method is a simple approach to evaluating investment projects using a checklist of relevant criteria. This involves listing key questions critical to the project's success and feasibility. The project is then accepted or rejected based on the answers to those questions. Checklists typically include financial and non-financial elements, giving companies a comprehensive view of the project's potential. (Gray and Larson, 2008)

While using the checklist method certainly has benefits, it also has several limitations that should be carefully considered. One of the main areas for concern is that criteria included in the checklist are often open to interpretation, leading to potential inconsistencies in project assessment. Furthermore, comparing multiple projects can be challenging as each project will require a different set of questions. (Gray and Larson, 2008)

Comparing the projects

Project	A	B	C
What is the value of the project to the organisation?	-£55,691	£240,499	£87,477
When will the project show results?	4.5 Years	3.2 Years	2.3 Years
Will internal resources be sufficient for the project?	No	No	Yes
What business problem does it solve?	Reduce operational costs.	Productivity.	Brand Recognition.

What business strategy the project aligns with?	Developing a positive reputation.	Enhance efficiency.	Expand market reach.
What is the project risk to the business?	The business stands to lose money over the course of the project.	The company is unable to supply the necessary funds to complete the project.	Financial risks, poor customer reviews and security breaches.

Multi-Weighted Scoring Model

Multi-weighted scoring is a technique for evaluating and comparing projects based on multiple criteria. It contains several individually weighted criteria regarding their importance and the subsequent evaluation of each task against these criteria. The scores are multiplied by their respective weights, and the weighted scores are summed to give a final overall score for each project. The projects with the higher overall score are considered more favourable. (John Rodney Turner, 2014)

Although the multi-weighted scoring model is a valuable method for comparing investments, it is essential to recognise its limitations. Subjectivity, lack of consistency, difficulty in weighting, and range limitations are among the significant drawbacks that can affect the overall accuracy of this method. (John Rodney Turner, 2014)

Comparing the projects

Criteria	Improve Brand Recognition	Profitability	Improve Efficiency	Align with Company objectives	Extend market reach	Improve Competitiveness	Weighted total
Weight	1.5	2	1	2	3	2	
Project A	0	3	0	8	0	0	22
Project B	0	4	8	6	0	6	40
Project C	8	5	3	6	5	5	62

The evaluation of the five appraisal methods shows that the business should invest in the project to launch an online store as it has promising characteristics that match the company's goals, profitability, and high return on investment. By choosing this project, the company will benefit from the global audience, expand its market reach and strengthen its financial performance.

Funding

Securing adequate funding is fundamental for a successful project. The company should consider various financing options to find an approach that fits financial capabilities, project needs, and long-term goals. The most common financing options include internal financing, loans and joint ventures. Understanding the benefits of each option is critical to making informed decisions and ensuring project viability. (Brigham et al., 2017)

Internal funding allows businesses to retain complete ownership and control over the project without incurring external debt by capitalising on existing resources. Internal funding is usually the easiest option for projects requiring a relatively small investment or when the business is already established and has access to the necessary capital to invest. (Brigham et al., 2017)

Loans can provide substantial capital for project execution and are usually repaid over time. This funding method is suitable for companies with a solid financial position and enables the business to spread the project's cost over an extended period. (Brealey, Myers and Allen, 2020)

A joint venture is a collaboration between two or more companies to join resources, expertise, and capital for a particular project. Each company in the joint venture will share risks, costs and rewards. Joint ventures are particularly beneficial when a project requires specialised skills or large amounts of capital the company cannot have. Partnering with external companies allows businesses to access complementary skills and seize opportunities in new markets and customer segments. (Brealey, Myers and Allen, 2020)

Conclusion

In summary, project appraisal methods play a fundamental role in guiding businesses through the complexity of decision-making. We explored several financial and non-financial project appraisal methodologies, each offering a unique approach. Financial appraisal methods such as Payback, net present value (NPV), and return on investment (ROI) are essential for measuring each project's economic feasibility and potential advantages. Some of these methods consider the time value of money and provide companies with valuable insight into the profitability and risks associated with each project. (Cleland and Ireland, 2010)

However, it is essential to recognise the limitations of financial appraisal techniques, such as the sensitivity to discount rates and the inability to capture non-financial aspects of a project. Nevertheless, non-financial methods have their limitations. Among others, they are highly subjective, with difficulty weighting each criterion and the possibility of excluding essential variables that could affect project success. (Cleland and Ireland, 2010)

To overcome the limitations of individual appraisal methods, companies can combine multiple approaches, leveraging each method's strengths to gain a more comprehensive understanding of project feasibility. Combining financial and non-

financial appraisal methods enables businesses to make informed decisions considering a project from all angles. (Brigham et al., 2017)

Ultimately, project evaluation methods serve as valuable tools in decision-making, helping companies identify viable investment opportunities, mitigate risks, and effectively allocate resources. However, only some approaches can give a definitive answer, and the integration and careful consideration of various appraisal techniques is paramount for making informed investment decisions. (Brigham et al., 2017)

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