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CAPITAL BUDGETING

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Abstract

The project talks about a capital budgeting and its methods including discounted cash flow, payback, and throughput analyses. The process involves analyzing a project's cash inflows and outflows to determine whether the expected return meets a set benchmark, we are going to talk about how capital budgeting is also important for small and big companies to evaluate major projects and investments, such as new plants or equipment.

In the present scenario the efficient allocation of capital resources is a most important function of project management. This function involves firm's decision to invest its funds in long-term assets like plant, machinery land, building, equipment etc. These assets are extremely important to the firm because the organizational profits are derived from the use of its capital investment in assets which represent a long-term commitment of funds. The future development of an enterprise depends on the capital investment projects. These projects may be the replacement of existing capital assets which turns out to be less attractive to the firm or expansion of business for implementing new ideas and planning. Thus, long term investment decisions of an enterprise fall within the definition of project budgeting or capital expenditure decisions. These decisions are concerned with the acquisition of assets in which funds will be invested by an enterprise. The assets of business include long term assets and short-term assets. Long term assets will yield a return over a period of time whereas short term assets are those assets which are easily convertible into cash within one accounting period, normally a year. The long-term investment decision is known as project budgeting/capital budgeting and the short-term investment decision are identified as working capital management.

Introduction

When we are talking about capital budgeting the first thing that comes in mind is planning, basically capital budgeting can be defined as the process of making investment decisions in long term assets. It is the process of deciding whether or not to invest in a particular project as all the investment possibilities may not be rewarding.

Capital expenditure is an outlay of cash for a project that is expected to produce a cash inflow over a period of time exceeding one year. Examples of projects include investments in property, plant, and equipment, research and development projects, large advertising campaigns, or any other project that requires a capital expenditure and generates a future cash flow. Because capital expenditures can be very large and have a significant impact on the financial performance of the firm, great importance is placed on project selection. This process is called capital budgeting

Capital budgeting involves the process of making investment decisions in long-term assets. It plays a vital role in determining whether to invest in projects that require significant capital expenditure, such as new plants or equipment. Kadosh Softwares Company recognizes the importance of capital budgeting in enhancing financial performance and achieving strategic objectives.

Every organization irrespective of its size and mission can be viewed as a financial entity management of an organization. Financial management focuses not only on the improvement of funds but also on their efficient use with the objective of maximizing the owners‟ wealth. The allocation of funds is therefore an important function of financial management. The allocation of funds involves the commitment of funds to assets and activities. There are two types of Investmentdecision:

1. Management of current assets or Working capital management.
2. Long term investment decision.

Long term investment decisions are widely known as capital budgeting or capital expenditure budgeting. It means as to whether or not money should be invested in long term project. This part is devoted to an in-depth and comparative decision of capital budgeting/capital expenditure management. A project is an activity sufficiently self- contained to permit financial and commercial analysis. In most cases projects represent expenditure of capital funds by pre- existing entities which want to expand or improve their operation.

In general, a project is an activity in which, we will spend money in expectation of returns and which logically seems to lead itself to planning. Financing and implementation as a unit, is a specific activity with a specific point and a specific ending point intended to accomplish a specificobjective.

To take up a new project, involves a capital investment decision and it is the top management's duty to make a situation and feasibility analysis of that particular project and means of financing and implementing it financing is a rapidly expanding field, which focuses not on the credit status of a company, but on cash flows that will be generated by a specific project. Capital budgeting has its origins in the natural resource and infrastructure sectors.

The current demand for infrastructure and capital investments is being fueled by deregulation in the power, telecommunications, and transportation sectors, by the globalization of product markets and the need for manufacturing scale, and by the privatization of government owned entities in developed and developing countries. The capital budgeting decision procedure basically involves the evaluation of the desirability of an investment proposal. It is obvious that the firm must have a systematic procedure for making capital budgeting decisions. The procedure must be consistent with the objective of wealth maximization. In view of the significance of capital budgeting decisions, the procedure must consist of step by step analysis.

The objective of capital budgeting

Capital budgeting operates with the end goal of profit maximization.

Here are a few objectives to keep in mind.

- It helps businesses prioritize investments and allocate financial resources more effectively, reducing the risk of investing in unprofitable projects and maximizingreturns.
- Additionally, it provides a framework for evaluating investment opportunities and assessing their potential risks and rewards. It's like conducting a financial autopsy – youwant to examine all the details to determine if an investment is worth pursuing.
- Finally, with the organization's capital structure as a basis, capital budgeting enablesbusinesses to plan and budget for future investments, making sure they have the necessary financial resources to pursue them.

1.1 Significance of the Problem

The significance of the problem addressed in the project report on capital budgeting methods lies in its crucial role in financial decision-making for both small and large companies. Here are some key points highlighting its significance:

Optimal Resource Allocation: Capital budgeting helps companies allocate their financial resources efficiently. By evaluating various investment opportunities, companies can determine where to allocate funds to generate the highest returns and maximize shareholder wealth.

Long-Term Planning: Capital budgeting involves making decisions about long-term investments in assets such as property, plant, equipment, and research projects. These decisions have long- lasting effects on the company's future growth and profitability, making it essential to choose wisely.

Risk Management: Through methods like discounted cash flow analysis and sensitivity analysis, capital budgeting allows companies to assess the risks associated with different investment options. This helps in making informed decisions and mitigating potential risks.

Competitive Advantage: Effective capital budgeting enables companies to stay competitive by investing in projects that enhance their competitiveness, such as new technologies, innovative products, or strategic acquisitions. It allows them to adapt to changing market conditions and stayahead of competitors.

Shareholder Value Maximization: Capital budgeting aligns investment decisions with the goal of maximizing shareholder value. By evaluating projects based on their potential to generate positive net present value (NPV), companies ensure that resources are allocated to projects that create value for shareholders.

Strategic Decision Making: Capital budgeting is integral to strategic decision-making processes such as expansion plans, diversification strategies, and mergers and acquisitions. It provides a structured framework for evaluating the feasibility and financial viability of strategic initiatives.

Financial Performance Evaluation: Capital budgeting facilitates the evaluation of a company's financial performance by tracking actual cash flows against projected cash flows. This allows management to assess the success of investment decisions and make adjustments as needed.

Resource Constraints Management: In situations where companies face resource constraints, capital budgeting helps prioritize investment opportunities based on their potential returns and alignment with organizational goals. This ensures that limited resources are allocated to projects with the highest strategic value.

Objectives of the study

The project seeks to satisfy the following objectives :

1. Develop finite element models using capital budgeting
2. Investigate the problems, importance, function and all the things related to our topic capitalbudgeting
3. Determine the relationship between the various methods of capital budgeting
4. Investigate the influence capital budgeting in this modern world
5. Examine the influence of errors the long process called capital budgeting

1.2.1 Need For The Study

1. The project study is undertaken to analyze and understand the capital budgeting process
2. To know how company gets funds from various resources

1.3 Scope of the study

The scope of the study encompasses a comprehensive examination of capital budgeting methods and their application in investment decision-making processes for both small and large companies. It delves into various capital budgeting techniques, including discounted cash flow analysis, payback period evaluation, and internal rate of return assessment. Additionally, the study explores the stages involved in the capital budgeting process, from initial investment screening andselection to post-completion audit.

Furthermore, the scope extends to the significance of capital budgeting for companies of all sizes, emphasizing its role in maximizing shareholder wealth, optimizing resource allocation, and supporting strategic objectives. The study also discusses the relevance of capital budgeting in different industry sectors, highlighting its importance in sectors undergoing deregulation, globalization, and privatization.

By addressing these aspects, the study aims to provide valuable insights and recommendations for companies seeking to improve their capital budgeting practices, enhance decision-making processes, and achieve sustainable financial performance. Additionally, it seeks to contribute to the body of knowledge in financial management by offering a comprehensive analysis of capital budgeting methods and their implications for organizational success.

1.4 Problem statement

There are so many problem in capital budgeting , one of the them is the factor called time the cost and the benefits of a decision may occur at different points of time , the other problem can be called quantification of impact managers can have so many problems in measuring the cost and benefits of projects in quantitative terms, there is this problem called uncertanty the uncertanty can be because of the cost of the project since capital budgeting is a long term commitment .

1.4.1 Problem justification

The aim of this project is to make sure To find out the profitable capital expenditure , to know whether the replacement of any existing fixed assets gives more return than earlier , To decide whether a specified project is to be selected or not. To find out the quantum of finance required for the capital expenditure. To assess the various sources of finance for capital expenditure. To evaluate the merits of each proposal to decide which project is best.

1.4.2 Limitations of the study

Theoretical Focus: While the report provides a detailed overview of capital budgeting techniques, it may lack practical implementation examples or case studies to illustrate real-world applications. Incorporating empirical data or industry-specific examples could enhance the relevance and applicability of the findings.

Scope and Depth: Due to the broad scope of the study, certain aspects of capital budgeting may not receive exhaustive coverage. For instance, the report could delve deeper into specific industries or regions to explore unique challenges and best practices relevant to those contexts.

Assumption of Certainty: The report predominantly discusses capital budgeting techniques under the assumption of certainty, where cash flows are known and predictable. In reality, business environments are often characterized by uncertainty and risk, which can significantly impact investment outcomes. Addressing uncertainty and risk management strategies could provide a more comprehensive understanding of capital budgeting practices.

Generalization of Findings: While the report provides insights into capital budgeting methods and their comparative analysis, the applicability of these findings may vary across different organizational contexts, industries, and economic conditions. It's essential to recognize the limitations of generalizing conclusions and consider the specific circumstances of each case.

2.1 Literature Overview

The process of making investment decisions involving fixed assets is called capital budgeting. The firm's management estimates expected cash flows from a potential project and calculates the net present value to determine whether the project is worth undertaking.

Firms continually invest funds in assets, and these assets produce income and cash flows that the firm can then either reinvest in more assets or pay to the owners. These assets represent the firm'scapital.

Capital is the firm's total assets. It includes all tangible and intangible assets. These assets include physical assets (such as land, buildings, equipment, and machinery), as well as assets that represent property rights (such as accounts receivable, securities, patents, and copyrights). When we refer to capital investment, we are referring to the firm's investment in its assets.

The term "capital" also has come to mean the funds used to finance the firm's assets. In this sense, capital consists of notes, bonds, stock, and short-term financing. We use the term "capital structure" to refer to the mix of these different sources of capital used to finance a firm's assets.

The firm's capital investment decision may be comprised of a number of distinct decisions, each referred to as a project.

A capital project is a set of assets that are contingent on one another and are considered together. For example, suppose a firm is considering the production of a new product. This capital project would require the firm to acquire land, build facilities, and purchase production equipment. And this project may also require the firm to increase its investment in its working capital inventory, cash, or accounts receivable.

Working capital is the collection of assets needed for day-to-day operations that support a firm's long-term investments. The investment decisions of the firm are decisions concerning a firm's capital investment. When we refer to a particular decision that financial managers must make, we are referring to a decision pertaining to a capital project.

Because a firm must continually evaluate possible investments, capital budgeting is an ongoing process.

However, before a firm begins thinking about capital budgeting, it must first determine its corporate strategy -its broad set of objectives for future investment. For example, the Walt Disney Company's objective is to "be the world's premier family entertainment company through the ongoing development of its powerful brand and character franchises.

"Consider the corporate strategy of Mattel, Inc., manufacturer of toys such as Barbie and Disney toys. Mattel's strategy is to become a full-line toy company and grow through expansion into the international toy market. In the early 1990's, Mattel entered into the activity toy, games, and plush toy markets, and, through acquisitions in Mexico, France, and Japan, increased its presence in theinternational toy market.

2.1.1 Importance of capital budgeting

Capital budgeting helps businesses prioritize investments and allocate financial resources more effectively, reducing the risk of investing in unprofitable projects and maximizing returns. Overall, capital budgeting is an essential tool for businesses to achieve long-term growth and success.

- Informs long-term investment decisions
- Reduces risk of unprofitable investments
- Maximizes profits by aligning with business goals
- Prioritizes investments and allocates resources efficiently
- Provides a framework for evaluating opportunities
- Promotes long-term growth and success
- Enables planning and budgeting for future investments

Types of capital budgeting

1- Accounting rate of return2- Net Present Value

3- Internal Rate of return4- Payback Period

5- Profitability Index (PI)

6- Modified Internal Rate of Return (MIRR)7- Equivalent Annual Annuity (EAA)

These methods use the incremental cash flows from each potential investment, or project techniques based on accounting earnings and accounting rules are sometimes used - though economists consider this to be improper - such as the accounting rate of return, and "return on investment." Simplified and hybrid methods are used as well, such a payback period and discounted payback period

1) Accounting rate of return

Accounting rate of return, also known as the Average rate of return, or ARR is a financial ratio used in capital budgeting. The ratio does not consider the concept of time value of money.

ARR calculates the return, generated from net income of the proposed capital investment. The ARR is a percentage return. Say, if ARR = 7%, then it means that the project is expected to earn seven cents out each dollar invested. If the ARR is equal to or greater than the required rate of return, the project is acceptable. If it is less than the desired rate, it should be rejected. When comparing investments, the higher the ARR, the more attractive the investment.

Basic Formula

ARR=Average net income/Average investmentWhere

Average investment=Book value at beginning of year+ Book value at end of useful life/2

2) NET PRESENT VALUE:

In finance, the net present value (NPV) or net present worth (NPW) of a time series of cash flows, both incoming and outgoing, is defined as the sum of the present values (PVs) of the individual cash flows. In the case when all future cash flows are incoming (such as coupons and principal of a bond) and the only outflow of cash is the purchase price, the NPV is simply the PV of future cash flows minus the purchase price (which is its own PV). NPV is a central tool in discounted cash flow (DCF) analysis, and is a standard method for using the time value of money to appraise long-term projects. Used for capital budgeting, and widely throughout economics, finance, and accounting, it measures the excess or shortfall of cash flows, in present value terms, once financingcharges are met.

The NPV of a sequence of cash flows takes as input the cash flows and a discount rate or discount curve and outputting a price; the converse process in DCF analysis - taking a sequence of cash flows and a price as input and inferring as output a discount rate (the discount rate which would yield the given price as NPV) - is called the yield, and is more widely used in bond trading.

Formula:

NPV = -Initial Investment + PV of Expected Cash Inflows

Where:

PV = Present Value

Initial Investment = Total cost of the investment

Expected Cash Inflows = Future cash inflows discounted to their present value

Example

For example, if an investment costs 100,000 +18,655.94+166,959.04+15,417.31+14,015.74+12,74.49=25,000 in annual cash inflows for the next five years, with a discount rate of 10%, the NPV calculation would be as follows:

NPV = -100,000+18,655.94 + 16,959.04+15,417.31 + 14,015.74+12,742.49 = $-22,209.48

The result of this formula if multiplied with the Annual Net cash in-flows and reduced by Initial Cash outlay will be the present value but in case where the cash flows are not equal in amount then the previous formula will be used to determine the present value of each cash flow separately. Any cash flow within12 months will not be discounted for NPV purpose.

Advantages

- Considers the time value of money
- Accounts for all expected cash inflows and outflows
- Provides a measure of the investment's profitability
- Can be used to compare multiple investment opportunities

Limitations

- Requires accurate estimates of future cash flows and discount rates
- Can be complex and time-consuming to calculate
- Does not consider non-financial factors such as environmental impact or socialresponsibility.

3) PROFITABILITY INDEX:

Profitability index (PI), also known as profit investment ratio (PIR) and value investment ratio (VIR), is the ratio of investment to payoff of a proposed project. It is a useful tool for ranking projects because it allows you to quantify the amount of value created per unit of investment. Theratio is calculated as follows:

Profitability Index= PV of Future cash flows/Initial Investment

Assuming that the cash flow calculated does not include the investment made in the project, a profitability index of 1 indicates breakeven. Any value lower than one would indicate that the project's PV is less than the initial investment. As the value of the profitability index increases, so does the financial attractiveness of the proposed project.

Rules for selection or rejection of a project:If PI > 1 then accept the project.

If PI < 1 then reject the project. For example, given:

Investment = 40,000

life of the Machine = 5 Years

CFAT Year	CFAT
1	18000
2	12000
3	10000
4	9000
5	6000

Calculate Net present value at 10% and PI:

Year	CFAT	PV@10%	PV1
1	18000	0.909	16362
2	12000	0.827	9924
3	10000	0.752	7520
4	9000	0.683	6147
5	6000	0.621	3726

Total present value	43679
(-) Investment	40000
NPV	3679

PI= 43679/40000= 1.091

= >1

= Accept the project

Advantages

- Considers the time value of money
- Accounts for all expected cash inflows and outflows
- Provides a measure of the investment's profitability
- Can be used to compare multiple investment opportunities

Limitations

- May lead to incorrect decisions when evaluating mutually exclusive projects
- May not always lead to the best investment decisions when budgets are limited.

4) INTERNAL RATE OF RETURN:

The internal rate of return (IRR) is a rate of return used in capital budgeting to measure and compare the profitability of investments. It is also called the discounted cash flow rate of return (DCFROR) or simply the rate of return (ROR). In the context of savings and loans the IRR is also called the effective interest rate. The term internal refers to the fact that its calculation does not incorporate environmental factors (e.g., the interest rate or inflation).

Definition:

Showing the position of the IRR on the graph of NPV (r) is labeled 'i' in the graph

The internal rate of return on an investment or project is the "annualized effective compounded return rate" or discount rate that makes the net present value of all cash flows (both positive and negative) from a particular investment equal to zero.

In more specific terms, the IRR of an investment is the interest rate at which the net present value of costs (negative cash flows) of the investment equals the net present value of the benefits (positive cash flows) of the investment.

Internal rates of return are commonly used to evaluate the desirability of investments or projects. The higher a project's internal rate of return, the more desirable it is to undertake the project. Assuming all other factors are equal among the various projects, the project with the highest IRR would probably be considered the best and undertaken first. A firm (or individual) should, in theory, undertake all projects or investments available with IRRs that exceed the cost of capital. Investment may be limited by availability of funds to the firm and/or by the firm's capacity or ability to manage numerous projects.

Uses:

Important: Because the internal rate of return is a rate quantity, it is an indicator of the efficiency, quality, or yield of an investment. This is in contrast with the net present value, which is an indicator of the value or magnitude of an investment.

An investment is considered acceptable if its internal rate of return is greater than an established minimum acceptable rate of return or cost of capital. In a scenario where an investment is considered by a firm that has equity holders, this minimum rate is the cost of capital of the investment (which may be determined by the risk-adjusted cost of capital of alternative investments). This ensures that the investment is supported by equity holders since, in general, an investment whose IRR exceeds its cost of capital adds value for the company (i.e., it is economically profitable)

Formula: **IRR is calculated by finding the discount rate that makes the present value of cash inflows equal to the initial investment.**

Given a collection of pairs (time, cash flow) involved in a project, the internal rate of return follows from the net present value as a function of the rate of return. A rate of return for which this function is zero is an internal rate of return. Given the (period, cash flow) pairs (n, Cn) where n is a positive integer, the total number of periods N, and the net present value NPV, the internal rate of return isgiven by r in:

NPV= E Cn/(1+r) n= 0

Note that the period is usually given in years, but the calculation may be made simpler if r is calculated using the period in which the majority of the problem is defined (e.g., using months if most of the cash flows occur at monthly intervals) and converted to a yearly period thereafter.

Note that any fixed time can be used in place of the present (e.g., the end of one interval of annuity); the value obtained is zero if and only if the NPV is zero. In the case that the cash flows are random variables, such as in the case of a life annuity, the expected values are put into the above formula. Often, the value of r cannot be found analytically. In this case, numerical methodsor graphical methods must be used.

Advantages

- Considers the time value of money
- Accounts for all expected cash inflows and outflows
- Provides a measure of the investment's profitability
- Can be used to compare multiple investment opportunities

Limitations

- Requires accurate estimates of future cash flows and discount rates
- May lead to incorrect decisions when evaluating mutually exclusive projects
- May result in multiple IRR values for some projects5)MODIFIED INTERNAL RATE OF

RETURN:

Modified internal rate of return (MIRR) is a financial measure of an investment's attractiveness. It is used in capital budgeting to rank alternative investments. As the name implies, MIRR is a modification of the internal rate of return (IRR) and as such aims to resolve some problems with the IRR.

Problems with the IRR: While there are several problems with the IRR, MIRR resolves two of them.

First, IRR assumes that interim positive cash flows are reinvested at the same rate of return as that of the project that generated them. This is usually an unrealistic scenario and a more likely situation is that the funds will be reinvested at a rate closer to the firm's cost of capital. The IRR therefore often gives an unduly optimistic picture of the projects under study. Generally, for comparing projects more fairly, the weighted average cost of capital should be used for reinvesting the interim cash flows. Second, more than one IRR can be found for projects with alternating positive and negative cash flows, which leads to confusion and ambiguity. MIRR finds only one value.

MIRR is a variation of IRR that assumes that the project's cash inflows are reinvested at a predetermined rate.

Formula= **MIRR = [(FV of positive cash flows / PV of negative cash flows)^(1/n)] – 1**

Where:

FV = Future Value

PV = Present Value

n = Number of periods

Example

For example, if an investment costs 100,000 /25,000 in annual cash inflows for the next fiveyears, with a reinvestment rate of 8%, the MIRR calculation would be as follows:

MIRR = [(54,961.35 / 100,000)^(1/5)] – 1 = 8.41%

Advantages

- Considers the reinvestment of future cash flows
- Accounts for the time value of money
- Provides a measure of the investment's profitability

Limitations

- Requires accurate estimates of future cash flows and reinvestment rates
- Can be complex and time-consuming to calculate
- May not be appropriate for investments with uneven cash flows

6. Equivalent Annual Annuity (EAA)

EAA calculates the annual cash inflows that a project would generate if it were an annuity over itslife.

Each of these methods has its advantages and disadvantages, and businesses may use acombination of methods to evaluate and select investments.

2.2 Why we should opt for a Capital Budget?

Here are nine good reasons why India should switch to a Capital Budget instead of the usual one that focuses primarily on revenue-related issues:

First, every economic entity has a capital budget, be it unstated and implicit (like a household or kirana shop) or stated and explicit like in the case of a company or an R&D lab.

As the size and complexity of operations increase, it becomes all the more necessary for an economic entity to structure, implement and review a capital budget. A nation-state is the most evolved form of an economic entity, and therefore needs a capital budget. We in India certainly need one.

Second, there seems to be an obsessive interest in a 'revenue' budget. The annual tamasha surrounding the end-February presentation of theUnion Budget reinforces the feeling that our economic pundits, commentators and critics are not able to step out of this frame of reference and demand a 'capital budget'.

While revenue deficit, fiscal deficit, FRBM et al are all very fine, surely as citizens, we have a right to know how much capital is being deployed in nation-building activities and how such capital is being raised.

At a ridiculous level, but just to forcefully make the point, a perfectly balanced revenue budget may have zero funds deployed for long-term investment in the country's infrastructure. Something close to this may well have happened as is pointed out below.

Third, a capital budget provides a full perspective. A lack of appreciation of the nation's capital needs may have derailed us. An obsession with their venue books has led India up the path of minimum investment in the country's infrastructure with an abysmal figure of close to 3.5 per cent of the GDP for about three decades. Debate and discussion on a publicly declared capital budget may have averted this serious under-investment.

Four, revenue and capital budgets are obviously inter-related just as a profit and loss account and balance sheet are. Surpluses and allocations the revenue budget go towards capital investments. Similarly, the servicing of long-term capital features in the revenue budget. In a jugalbandhi, there is no music when one half is missing, forgotten or ignored.

Five, a capital budget should be made understandable to the people. Just as the television- viewing public has over the years gained anappreciation of the nuances of the revenue budget (prices, inflation, deficits, taxes, allocations, subsidies and so on), the language of capital budgets must also be made simple to the public at large who are today tuned in far more to economic issuesthan ever before.

2.2.1 Criteria for capital budgeting decisions

Potentially, there is a wide array of criteria for selecting projects. Some shareholders may want the firm to select the projects that will show immediate surges in cash inflow, others may want to emphasize long-term growth with little importance on short term performance viewed in this way, it would be quite difficult to satisfy the differing interests of all the shareholders. Fortunately, there is a solution. The goal of the firm is to maximize present shareholders value.

This goal implies that projects should be undertaken that result in a positive net present value, i.e., the present value of the expected cash inflow less (-) the present value of the required capital expenditures. Using net present values (NPV) as a measure, capital budgeting involves selecting those projects that increases the value of the firm because they have positive NPV. The timing and growth rate of the incoming cash flow is important only to the extent of its impact on NPV.

Using NPV as the criteria by which to select assumes efficient capital markets so that the firm has access to whatever capital is needed to pursue the positive NPV projects. In situations where this is not the case, there may be capital rationing and the capital budgeting process becomes more complex. Note that it is not the responsibility of the firm to decide whether to decide whether to please particular group(s) of shareholders who prefer longer or shorter-term results. Once the firm has selected the projects to maximize its net present value (NPV), it is up to the individual shareholder to use the capital markets to borrow or lend in order to move the exact timing of their own cash inflows forward or backward. This idea is crucial in the principle agent relationship that exists between shareholders and corporate managers. Even though each may have their own individual preferences, the common goal is that of maximizing the present value of the corporation. While net present value is the rule that always maximizes shareholder value, some firms use other criteria for their capital budgeting decisions, such as internal rate of return (IRR), Discounting cash flow (DCF) and payback period etc.

The importance of the capital budgeting in an industrial undertaking needs no emphasis. The present status is confined to the Kadosh Softwares company LTD to analyze how capital budgeting is managed in the organization, what are the practices adopted and its constraints.

2.3 Features of capital budgeting

Long-term: It involves making long-term investment decisions that will affect your company's financial health.

- **Time-sensitive:** It considers the time value of money, which means that a dollar today is worth more than a dollar in the future. It's like trying to decide whether to eat a cookie now or wait for two cookies later – you have to consider the value of delayed gratification.

- **Risk-conscious:** Another feature is risk assessment. Businesses must carefully evaluate thepotential risks and rewards of each investment opportunity to make informed decisions.
- **Predictive:** Capital budgeting requires accurate financial forecasting, which involves predictingfuture cash flows and expenses.
- **Needs collaboration:** Finally, capital budgeting requires collaboration and communication amongdifferent departments and stakeholders within a company.

How does a firm achieve its corporate strategy? By making investments in long-lived assets that will maximize owners' wealth. Selecting these projects is what capital budgeting is all about.

Stages in the Capital Budgeting Process

There are five stages in the capital budgeting process:

Stage 1: Investment screening and selection

Projects consistent with the corporate strategy are identified by production, marketing, and research and development management of the firm. Once identified, projects are evaluated and screened by estimating how they affect the future cash flows of the firm and, hence, the value of the firm.

2.4.2 Stage 2: Capital budget proposal

A capital budget is proposed for the projects surviving the screening and selection process. The budget lists the recommended projects and the dollar amount of investment needed for each. This proposal may start as an estimate of expected revenues and costs, but as the project analysis is refined, data from marketing, purchasing, engineering, accounting, and finance functions are put together.

2.4.3 Stage 3: Budgeting approval and authorization Projects included in the capital budget are authorized, allowing further fact gathering and analysis, and approved, allowing expenditures for the projects. In some firms, the projects are authorized and approved at the same time. In others, a project must first be authorized, requiring more research before it can be formally approved. Formal authorization and approval procedures are typically used on larger expenditures; smaller expenditures are at the discretion of management.

Stage 4: Project tracking

After a project is approved, work on it begins. The manager reports periodically on its expenditures, as well as on any revenues associated with it. This is referred to as project tracking, the communication link between the decision makers and the operating management of the firm. For example: tracking can identify cost over-runs and uncover the need for more marketing research.

2.4.5 Stage 5: Post completion audit

Following a period of time, perhaps two or three years after approval, projects are reviewed to see whether they should be continued. This reevaluation is referred to as a post completion audit. Thorough Post completion audits are typically performed on selected projects, usually the largest projects in a given year's budget for the firm or for each division. Post completion audits show the firm's management how well the cash flows realized correspond with the cash flows forecasted several years earlier.

A firm invests only to increase the value of their ownership interest. A firm will have cash flows in the future from its past investment decisions. When it invests in new assets, it expects the future cash flows to be greater than without this new investment.

2.5 INCREMENTAL CASH FLOWS

The difference between the cash flows of the firm with the investment project and the cash flows of the firm without the investment project both over the same period of time is referred to as the project's incremental cash flows.

To evaluate an investment, we'll have to look at how it will change the future cash flows of the firm. We will be examining how much the value of the firm changes as a result of the investment. The change in a firm's value as a result of a new investment is the difference between its benefitsand its costs:

Project's change in the value of the firm

- Project's benefits - Project's costs

A more useful way of evaluating the change in the value is the breakdown of the project's cash flows into two components:

1. The present value of the cash flows from the project's operating activities (revenues minus operating expenses), referred to as the project's operating cash flows (OCF); and

2. The present value of the investment cash flows, which are the expenditures needed to acquirethe project's assets and any cash flows from disposing the project's assets.

Capital budgeting in India

A firm invests only to increase the value of their ownership interest. A firm will have cash flows in the future from its past investment decisions. When it invests in new assets, it expects the future cash flows to be greater than without this new investment.

The difference between the cash flows of the firm with the investment project and the cash flows of the firm without the investment project both over the same period of time is referred to as the project's incremental cash flows. To evaluate an investment, we'll have to look at how it will change the future cash flows of the firm.

We will be examining how much the value of the firm changes as a result of the investment.

The change in a firm's value as a result of a new investment is the difference between its benefits and its costs: Project's change in the value of the firm Project's benefits - Project's costs A more useful way of evaluating the change in the value is the breakdown of the project's cash flows intotwo components:

1. The present value of the cash flows from the project's operating activities (revenues minus operating expenses), referred to as the project's operating cash flows (OCF); and

2. The present value of the investment cash flows, which are the expenditures needed to acquirethe project's assets and any cash flows from disposing the project's assets.

3. A CAPITAL BUDGETING DECISION

A capital budgeting decision is characterized by cash flows (costs and benefits) that are spread out over several time periods. The time value of money must be considered in order to evaluate the alternatives correctly. Although in practice we consider risk as well as time value, in this chapter to focus on the methods of calculation we restrict the discussion to situations in which the cash flows are known with certainty. When the cash flows are allowed to be uncertain, we will use a procedure that is based on the initial recommendations made with the certainty assumption.

In this chapter we shall describe four of the more commonly used procedures for making capital budgeting decisions. If you understand the basic elements of a correct procedure, you will then be able to distinguish between correct and incorrect procedures. The two basic correct capital budgeting techniques presented in this chapter are applicable to a wide range of decisions. Future chapters will refine the decision-making process for investments.

RATE OF DISCOUNT

We shall use the term time value of money to describe the discount rate that can be used to compute present values. One possibility is to use the rate of interest the risk of default; thus risk, if present, would be handled separately from the time discounting by subtracting a dollar risk adjustment from the present value. In many situations it is convenient to use the firm's borrowing rate (the marginal cost of borrowing funds) since this rate is reasonably objective. But, again, the project'srisk is not being taken into consideration.

The objectives of the discounting process are to take the time value of money and risk into consideration. Initially we want to find the present equivalent of future sums without explicitly considering risk. Later, we shall introduce several techniques to adjust for the risk of theinvestment.

The firm's weighted average cost of capital is used by many managers to take both the time value and risk into consideration. Although the firm's weighted average cost of capital is an important concept that should be understood by all managers and is useful in deciding on the financing mix, we do not advocate its general use in evaluating investments with risks that are different from thefirm's risks.

3.2 CLASSIFICATION OF CASH FLOWS

We define conventional investments as those having one or more periods of outlays followed by one or more periods of positive cash proceeds. Borrowing money is a kind of "negative investment" or "loan-type of cash flow" in which one or more periods of cash proceeds are followed by one or more periods in which there are cash outlays There are also nonconventional investments that are defined to investments that have one or more periods of outplays interspersed with periods of proceeds. with nonconventional investments, there is more than one sign change in the sequence of the cash flows. With a conventional investment or loan, there is one sign change. The basic possibilities may be illustrated as shown in concept that should be understood by all managers and is useful in deciding on the financing mix, we do not advocate its general use in evaluating investments with risks that are different from the firm's risks.

Types of Cash Flows

1. Can include initial investment
2. Operating cash flows
3. Terminal cash flows
4. Salvage value.

3.Company Profile

Kadosh Software Solutions Inc. is a small technology company specializing in the development and implementation of innovative software solutions for businesses across various industries. With a strong focus on capital-intensive projects, the company utilizes sophisticated capital budgeting techniques to assess investment opportunities and drive sustainable growth.

3.1 Core Competencies:

At Kadosh Software Solutions, our core competencies lie in our ability to conceptualize, develop, and implement innovative software solutions that empower businesses to streamline operations, enhance productivity, and drive sustainable growth. With a diverse team of software engineers, data scientists, and industry experts, we possess the expertise and resources to tackle even the most complex technological challenges.

Industry Focus:

While our software solutions cater to a wide range of industries, including finance, healthcare, manufacturing, and retail, we have developed a particular specialization in serving businesses with capital-intensive projects. Whether it's optimizing manufacturing processes, enhancing supply chain management, or implementing enterprise resource planning systems, Kadosh Softwares Solutions excels in delivering scalable and customizable solutions that align with our clients' strategic objectives.

Capital Budgeting Expertise:

Capital-intensive projects often require substantial upfront investment, making effective capital budgeting essential for maximizing returns and mitigating risks. At Kadosh Solutions, we employ a sophisticated approach to capital budgeting, leveraging advanced financial modeling techniques and investment analysis tools to evaluate potential projects rigorously. By quantifying the expected cash flows, assessing risk factors, and considering alternative investment scenarios, we ensure that every investment decision is backed by sound financial analysis and strategic foresight.

Commitment to Innovation:

Innovation lies at the heart of everything we do at Kadosh Solutions. Our dedicated research and development team continually explores emerging technologies, trends, and market dynamics to stay ahead of the curve and anticipate future opportunities.

By fostering a culture of creativity, collaboration, and experimentation, we empower our team members to push the boundaries of possibility and develop groundbreaking solutions that drive value for our clients and stakeholders.

Customer-Centric Approach:

Kadosh Software Solutions, our clients are more than just customers – they're partners in innovation. We take a customer-centric approach to software development, working closely with our clients to understand their unique challenges, goals, and requirements. Whether it's customizing existing products or developing bespoke solutions from scratch, we prioritize open communication, transparency, and responsiveness to ensure that our clients receive solutions that exceed their expectations and deliver tangible business outcomes.

3.2 Vision:

Kadosh Software Solutions, our vision is to be the preeminent provider of transformative software solutions, empowering businesses to achieve their full potential in the digital age. We aspire to lead the charge towards a future where technology serves as a catalyst for innovation, growth, and positive change across industries and communities worldwide.

Mission:

Our mission Kadosh Softwares Solutions is to deliver innovative, scalable, and customizable software solutions that drive tangible value for our clients, stakeholders, and society at large. Through a relentless commitment to excellence, integrity, and customer satisfaction, we strive to exceed expectations, inspire confidence, and foster long-term partnerships built on trust, collaboration, and shared success. Together, we aim to harness the power of technology to unlock new possibilities, solve complex challenges, and create a brighter, more connected future for all.

3.2.1 How Capital Budgeting Plays a crucial role in Kadosh Softwares

Capital budgeting plays a crucial role in guiding the strategic investment decisions of Kadosh Solutions Inc. As a technology company specializing in software solutions, Kadosh often deals with capital-intensive projects that require significant financial resources. Here's how capital budgeting helps Kadosh Solutions:

Identifying Investment Opportunities: Capital budgeting allows Kadosh Softwares to identify potential investment opportunities in projects such as research and development for new software products, upgrading infrastructure, or expanding market reach.

By evaluating these opportunities, the company can allocate resources to projects with the highest potential for return on investment (ROI).

Resource Allocation: Through capital budgeting, Kadosh Softwares can allocate its financial resources effectively and efficiently. By assessing the costs and benefits of various projects, the company can prioritize investments based on their strategic importance and expected financial returns. This ensures that resources are directed towards projects that align with the company's long-term goals and objectives.

Risk Management: Capital budgeting helps Kadosh Softwares assess the risks associated with different investment projects. By conducting thorough financial analysis and risk assessment, the company can identify potential pitfalls and uncertainties that may impact project outcomes. This allows Kadosh Softwares to implement risk mitigation strategies and make informed decisions tominimize financial risks.

Maximizing Shareholder Value: Capital budgeting enables Kadosh Softwares to maximize shareholder value by investing in projects that generate the highest returns. By focusing on projects with positive net present value (NPV) and internal rate of return (IRR), the company can enhance profitability and drive long-term growth. This, in turn, enhances shareholder wealth and creates value for investors.

Long-Term Planning: Capital budgeting facilitates long-term planning and strategic decision- making at Kadosh Softwares. By evaluating investment opportunities over the long term, the company can develop a clear roadmap for future growth and expansion. This allows Kadosh Softwares to stay competitive in the rapidly evolving technology industry and adapt to changing market dynamics effectively.

Kadosh Softwares Solutions likely faced several challenges when initially entering the market. Here's a breakdown of how their market initialization process might haveunfolded:

1. **Market Research**: Before entering the market, Kadosh Softwares would have conducted thorough market research to identify potential opportunities and assess market demand for their software solutions. This would involve analyzing industry trends, competitor offerings, and customer needs to determine the viability of their products.

2. **Product Development**: Based on market research findings, Kadosh Softwares would have developed innovative software solutions tailored to meet the specific needs of their target market. This could involve investing in research and development to create cutting-edge technology solutions that differentiate them from competitors.

3. **Target Market Identification**: With limited resources as a small company, Kadosh Softwares would have focused on identifying a niche market segment where their products could offer unique value proposition. This could involve targeting specific industries or business sectors where there is a high demand for their software solutions.

4. **Marketing and Branding**: Kadosh Softwares would have developed a marketing strategy to create awareness about their brand and products among potential customers. This might include online marketing campaigns, social media engagement, participation in industry events, and networking with potential clients to generate leads and build relationships.

5. **Sales and Distribution**: As a small company, Kadosh Softwares may have initially relied on direct sales efforts to reach customers. This could involve building a sales team to engage with prospects, conducting product demonstrations, and negotiating contracts to secure sales agreements. Additionally, they may have partnered with distributors orresellers to expand their reach in the market.

6. **Customer Feedback and Iteration**: Following the initial launch of their products, Kadosh Softwares would have collected feedback from customers to identify areas for improvement and iterate on their software solutions. This iterative process is crucial for refining their products based on real-world usage and enhancing customer satisfaction.

7. **Scaling Operations**: As Kadosh Softwares gained traction in the market and acquired more customers, they would have focused on scaling their operations to meet growing demand. This could involve expanding their team, investing in infrastructure and resources, and optimizing business processes to support continued growth.

3.3 Capital Budgeting Methods:

1. **Net Present Value (NPV):** Kadosh Solutions employs NPV analysis to evaluate the profitability of potential investments by discounting projected cash flows to their present value. This method helps the company prioritize projects with the highest expected returnsrelative to their initial capital outlay.

2. **Internal Rate of Return (IRR):** IRR analysis is another key tool used by Kadosh Solutions to assess the feasibility of investment projects. By calculating the discount rate that equates the present value of cash inflows with the initial investment, the company canidentify projects with desirable rates of return.

3. **Payback Period:** While NPV and IRR are primary metrics for investment evaluation, Kadosh Solutions also considers the payback period to assess the time it takes for an investment to recoup its initial cost. This method provides insights into project liquidity and risk exposure.

3.3.1 Challenges in Applying the Methods:

Despite the effectiveness of capital budgeting techniques, Kadosh Solutions faces several challenges in their application:

Uncertainty and Risk: The company operates in a dynamic market environment characterized by technological advancements and changing customer preferences, leading to uncertainties in future cash flows.

Complexity of Projects: Capital-intensive technology projects often involve intricate financial structures and long-term commitments, making accurate forecasting and evaluation challenging.

Resource Allocation: Allocating financial resources optimally among competing investment opportunities requires careful consideration of strategic objectives and risk-return profiles.

4. Net present value

Net present value is the present value of the cash flows at the required rate of return of your project compared to your initial investment," says Knight. In practical terms, it's a method of calculating your return on investment, or ROI, for a project or expenditure. By looking at all of the money you expect to make from the investment and translating those returns into today's dollars, you can decide whether the project is worthwhile.

4.1. What do companies typically use it for?

When a manager needs to compare projects and decide which ones to pursue, there are generally three options available: internal rate of return, payback method, and net present value. Knight says that net present value, often referred to as NPV, is the tool of choice for most financial analysts. There are two reasons for that. One, NPV considers the time value of money, translating future cash flows into today's dollars. Two, it provides a concrete number that managers can use to easily compare an initial outlay of cash against the present value of the return. "It's far superior to the payback method, which is the most commonly used," he says.

The attraction of payback is that it is simple to calculate and simple to understand: when will you make back the money you put in? But it doesn't consider that the buying power of money today is greater than the buying power of the same amount of money in the future. That's what makes NPV a superior method, says Knight. And fortunately, with financial calculators and Excel spreadsheets, NPV is now nearly just as easy to calculate. Managers also use NPV to decide whether to make large purchases, such as equipment or software. It's also used in mergers and acquisitions (though it's called the discounted cash flow model in that scenario). In fact, it's the model that Warren Buffet uses to evaluate companies. Any time a company is using today's dollars for future returns,NPV is a solid choice.

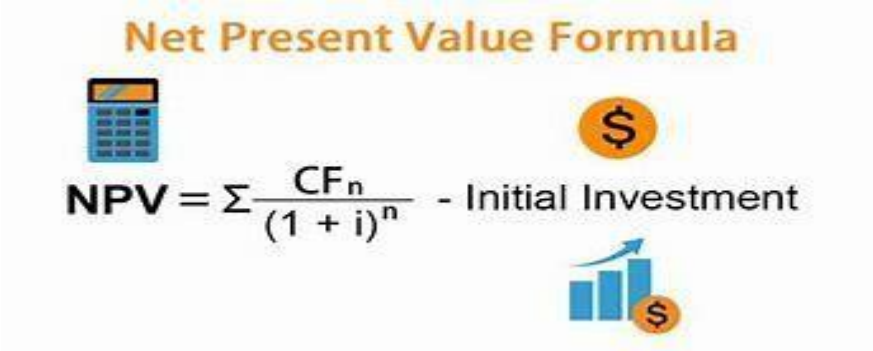
4.1.1 What are some common mistakes that people make?

There are two things that managers need to be aware of when using NPV. The first is that it can be hard to explain to others. As Knight writes in his book, Financial Intelligence, "the discounted value of future cash flows — not a phrase that trips easily off the nonfinancial tongue". Still, he says, it's worth the extra effort to explain and present NPV because of its superiority as a method.

He writes, "any investment that passes the net present value test will increase shareholder value, and any investment that fails would (if carried out anyway), actually hurt the company and its shareholders." The second thing managers need to keep in mind is that the calculation is based on several assumptions and estimates, which means there's lots of room for error.

You can mitigate the risks by double-checking your estimates and doing sensitivity analysis after you've done your initial calculation. There are three places where you can make misestimates that will drastically affect the end results of your calculation.

First, is the initial investment. Do you know what the project or expenditure is going to cost? If you're buying a piece of equipment that has a clear price tag, there's no risk. But if you're upgrading your IT system and are making estimates about employee time and resources, the timeline of the project, and how much you're going to pay outside vendors, the numbers can have great variance. Second, there are risks related to the discount rate. You are using today's rate and applying it to future returns so there's a chance that say, in Year Three of the project, the interest rates will spike and the cost of your funds will go up. This would mean your returns for that year will be less valuable than you initially thought. Third, and this is where Knight says people often.

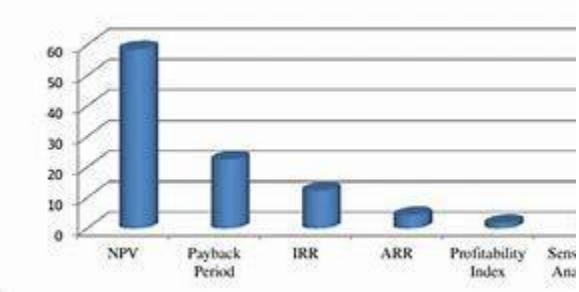


The result of this formula is multiplied with the Annual Net cash in-flows and reduced by Initial Cash outlay the present value, but in cases where the cash flows are not equal in amount, the previous formula will be used to determine the present value of each cash flow separately. Any cash flow within 12 months will not be discounted for NPV purpose, nevertheless the usual initial investments during the first year R_0 are summed up a negative cash flow

Payback period

The payback period has been a widely used capital budgeting tool in the analysis of capital projects. It has come under criticism for its inability to consider all the project's flows in a present valued context. The purpose of this article is to present the duration measure in a capital budgeting framework and show how it is related to the payback period. The relationship is shown analytically and empirically. As a result, the payback period assumes a new identity which goes far to overcomethe objections historically levied against it.

The Payback Period is one of the most popular project evaluation criteria. As much as it is liked by practitioners as a measure of liquidity and risk exposure, it is criticized by academicians who seriously question its validity as a profitability criterion. This paper examines the classical definition of the Payback Period criterion for investment projects, and re-formulates this criterion in a way that frees it from the shortcomings of the old definition and makes it compatible with the Net Present Value criterion. It is also shown that the traditional approach to the comparison of mutually exclusive projects by means of the Payback Period criterion has been inadequate, and theproper approach to this problem is presented.



An internal rate of return is an interest rate that equates the present worth of a cash flow stream to zero. When unique, it provides valuable information about the return on the investment and is often viewed as a measure of efficiency.

Unfortunately, this analysis is clouded when there are multiple internal rates of return, which can occur when a project is defined by a mixture of positive and negative cash flows. While many methods have been presented in the literature to deal with this problem, we believe ours to be unique in that it does not rely on the computation of another measure of worth, but rather, the identification of the relevant rate of return from the set of internal rates of return.

We show that this rate always produces decisions consistent with present worth under the assumption that at least one real internal rate of return exists. In doing so, we provide new definitions of when a project is borrowing from, or loaning to, the firm. These definitions help in understanding the meaning of multiple internal rates of return, which is also discussed.

4.Net present value Vs Internal rate of return

IRR is used to evaluate that which one investment is providing comparatively better rate of return. Some investors prefer to use IRR as to take decision on the basis of required rate of return calculated in percentage. Financial managers prefer to use IRR. The preference for IRR is due to the general disposition of businesspeople towards rate of return rather than actual rupee return. They tend to find NPV less intuitive because it does not measure the amount relative to the amountinvested (Gitman & Lawrence, 2008).

But some investors prefer to use the NPV because it evaluates the investment project in amount. In amount or money value it is easily to understand that what a project is providing in return but in IRR it is difficult to evaluate. It is because the IRR gives answer in percentage which in many cases become difficult for investors to evaluate return.

NPV project evaluation is superior to that of IRR. NPV discounts all the cash flows to present to see whether the investment project will cause benefit or loss to the investor

From the project's NPV and IRR it is cleared that NPV is better than IRR and investor will choose vineyard project with more NPV. Thus, it's cleared that for mutually exclusive project NPV is used to determine the profitability (Gallagher & Andrew, 2007).

In another case it was shown that both NPV and IRR give same suggestions but it was only because of the cost of capital. Cost of capital also plays important role in ranking of project. Suppose there are two projects A and B. Both have the same initial cost of 105,000. Where cost of capital is 8% and when applied it was seen that project A has less NPV (23,970) than project B (25,455). IRR for project "A" (20) is more than project "B" (16).

But when changed the cost of capital to 10% it was seen that NPV and IRR both were in favor of project A. But it doesn't show that IRR is better than NPV. NPV has shown the result according to IRR. Thus, the firm should rely on NPV when has to take decision on the basis of ranking (Khan & Jain, 2007). On the other side it was said that NPV is reliable as the discount rate is chosen. If the discount rate is unrealistic, the decision about the project is unreliable.

If the project is evaluated on the basis of IRR then it should not be accepted if the IRR is high. Management should accept the project by analyzing the previous and present data of the business. If the company has the good profile then it means company can provide such an impressive IRR. Thus, a project should not select on the account of its higher IRR but it should be evaluated with NPV using the more realistic discount rate (Groppelli & Eshan, 2006).

From the other study it was also confirmed that IRR does not measure the absolute dollar amount by which a project will change shareholder's wealth. IRR does not tell us anything about the size of the project it just considers cash flows, incorporates the time value of money. It provides the objective decision criterion.

Thus, it means IRR is relative measure but NPV is absolute measure of investment (Lee & Lee, 2006). Another also deep-rooted that Net present value (NPV) measures the value created by investment and is the best criterion for selecting or rejecting the investment, whether it is industrial or financial (Pascal, Fur, Antonio, Maurizio, & Pierre, 2011).

Moving ahead it was also stated that net present value reinvest at the cost of capital and also determines the wealth of shareholders. NPV assumes that cash inflows are reinvested at the cost of capital whereas, IRR assumes reinvestment at project's IRR. The NPV tends to be more conservative (Harold, 2009). Moreover, in another study it was also said NPV is the direct measure of a project's contribution to stockholder's wealth. But IRR is not a direct measure of a project's contribution to stockholder's wealth. NPV don't measure the answer in percentage but it's not a major disadvantage. But IRR's disadvantage is that it doesn't consider the reinvestment plan as of NPV (Coker, 2007). On the other side it was discussed that major reasons of the difference between the answers of NPV and IRR are that; NPV does not consider the initial cost but IRR considers. NPV is more conservative where IRR is more optimistic but NPV gives better results (Trivedi, 2002).

A further description about NPV and IRR that NPV gives the different results for mutually exclusive projects because it measures from one aspect and IRR from another aspect. NPV measures the dollar change in shareholders wealth that arises from undertaking of project where IRR measures the profitability added to the shareholder wealth but not the actual amount (Melicher & Norton, 2010). NPV method is preferable for project appraisal when; investor has shortage of funds. In this case opportunity cost of capital will be more than market rate. Secondly if the projects are mutually exclusive and when there is difference in capital out lay, NPV is best approach.

Thirdly if the life span of the projects is different NPV is used and lastly if there are negative cash flows in the middle, NPV is used to appraise rather than IRR. IRR method is preferable when; cost of capital get raised in various forms, for evaluation of very risky projects, it's preferable by management because it can be compared with cost of capital easily in terms of rate. Thus, some aspects of management can be compared in better way by the NPV criterion and some in better way by the IRR (Barthwal, 2007). On another method it was said that IRR method is used usually because it is easy to visualize than NPV as IRR provides results in rate of return (Van Horne & Machowicz, 2006).

On another side it was criticized that NPV method is not used separately because it only assumes the value of the total surplus of discounted project cash flows but don't relate it to original investment. On the other hand, there is the objections in usage of IRR which are; project's cash flow from future aspect are reinvested in project which gives IRR, IRR is of mathematical nature as there are not steady cash flows because there are positive and negative cash flows which provide more than one IRR (Gray, Larson, & Desai, 2011).

Moving ahead it was also studied that in some place's management prefer to use IRR because it just requires single input, cash flow stream that a project is expected to generate but NPV requires estimates of both cost of capital and cash flow stream. It was also concluded that a project's NPV is computed with same data as of IRR.

So, compute the both in a project and if the answer is same from both techniques then use IRR to explain and if the answer will not same then NPV rule is trust worthy (Hawawini & Claude, 2010). NPV method assumes the cash flows reinvested at the cost of capital but IRR assumes to reinvest at the determined IRR. Thus, some give preferences to the NPV over the IRR (Banerjee, 2008).

Net present value and internal rate of return are the capital budgeting techniques mostly used to evaluate the projects or investments. For individual projects IRR is used mostly to evaluate the project and NPV is preferable when the projects are mutually exclusive. But sometimes investors prefer to use NPV because it is easy to calculate and reinvest the cash flows at the cost of capital. And sometimes IRR is preferable because it gives answer in percentage and it is easy tounderstand. But IRR reinvest at calculated IRR.

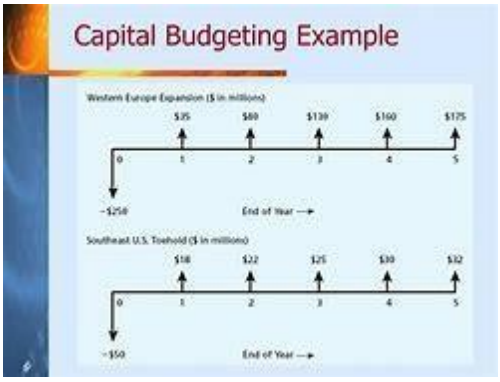
In study the main purpose was to analyze that NPV is better than IRR. It was analyzed that NPV is the most preferable and mostly used method to analyze the projects. A hypothesis was developed that is "NPV is better than IRR".

To prove this hypothesis data was collected from the Google books. These books are copy righted. 40 Books of various disciplines and authors were taken randomly from 2002-2012. Views of authors were analyzed by calculating sum and mean of the collected views.

These views are analyzed on individual basis and on the basis of different disciplines. For the calculation purpose MS Excel 2007 was used. After concluding the result, it was find out from the sum and mean that 52.50% authors are in favor the point, NPV is better than IRR. On the other hand, 10% have the view that IRR is better than NPV.

Remaining 37.50% have the view that in some cases IRR is better and, in some cases, NPV is better. IRR is better when projects are individual and NPV is better when projects are mutually exclusive. Same results were found when analyzed views under different disciplines.

At the end it was proved that NPV is better than IRR. So, hypothesis is accepted. Thus, NPV is better than IRR.



6.Data Analysis and interpretation

6.1 Profit & Loss Account for the year ended December 31, 2023 of Kadosh Softwares Solutions

Particulars	Amount (INR)
Revenue from software sales	₹35,00,00,000
Consulting fees	₹8,40,00,000
Other income	₹2,10,00,000
Total Income	₹45,50,00,000
Employee salaries and benefits	₹17,50,00,000
Research and development expenses	₹5,60,00,000
Marketing and advertising expenses	₹4,20,00,000
Operating expenses	₹7,00,00,000
Depreciation and amortization	₹2,80,00,000
Rent and utilities	₹2,10,00,000
Other expenses	₹4,90,00,000
Total Expenditure	₹42,10,00,000
NET PROFIT BEFORE TAX	₹3,40,00,000
Income Tax Expense (30%)	₹1,02,00,000
NET PROFIT AFTER TAX	₹2,38,00,000

Profit & Loss Account Analysis:

- **Revenue Sources:** The company's primary revenue sources are software sales and consulting fees, which together contribute $5,200,000 (80%) to the total income.
- **Growth:** Compared to the previous year, there's a significant increase in revenue, indicating a growth trend in the company's core business areas.
- **Profitability:** Net profit after tax is $140,000, representing a net profit margin of 2.15%. While the profit margin is relatively low, it indicates that the company is operating profitably.

6.2 Balance Sheet as of December 31, 2023

Assets	Amount (INR)	Liabilities and Equity	Amount (INR)
Cash and cash equivalents	₹1,20,00,000	Accounts payable	₹5,60,00,000
Accounts receivable	₹1,80,00,000	Short-term loans	₹3,00,00,000
Inventory	₹1,20,00,000	Long-term loans	₹8,00,00,000
Property, plant, and equipment	₹4,00,00,000	Share capital	₹10,00,00,000
Other assets	₹1,00,00,000	Retained earnings	₹7,40,00,000
Total Assets	₹9,20,00,000	Total Liabilities and Equity	₹24,00,00,000

1. **Balance Sheet Analysis**:

- The balance sheet reflects the company's financial position as of December 31,2023.
- Total assets amounted to ₹9,20,00,000, with property, plant, and equipmentrepresenting the largest portion of assets.
- Liabilities and equity totaled ₹24,00,00,000, indicating a stable financial structurewith a healthy mix of debt and equity financing.

6.3 Cash Flow Statement for the year ended December 31, 2023

Cash Flows	Amount (INR)
Net cash from operating activities	₹1,60,00,000
Net cash used in investing activities	(₹2,00,00,000)
Net cash from financing activities	₹40,00,000
Net increase in cash and cash equivalents	₹50,00,000
Cash and cash equivalents at beginning of year	₹70,00,000
Cash and cash equivalents at end of year	₹1,20,00,000

1. **Cash Flow Analysis**:

The cash flow statement provides insights into the company's cash inflows and outflows duringthe year.

Net cash from operating activities amounted to ₹1,60,00,000, indicating positive cash generationfrom core business operations.

Net cash used in investing activities was (₹2,00,00,000), primarily due to investments in property,plant, and equipment.

Net cash from financing activities was ₹40,00,000, reflecting capital raised through financingactivities.

The net increase in cash and cash equivalents was ₹50,00,000, resulting in a closing cash balanceof ₹1,20,00,000.

6.3.1 Here's a comprehensive data analysis and interpretation of Kadosh Softwares Solutions Inc.'s financial performance for the year 2023:

Kadosh Softwares Solutions generated a total revenue of ₹45,50,00,000 in 2023.

Revenue from software sales constituted the largest portion of the revenue, accounting for approximately 77% of the total revenue.

Consulting fees and other income contributed to 18% and 5% of the total revenue, respectively.

The significant portion of revenue from software sales indicates the company's strong position inthe software development market.

Expenditure Analysis:

The company's total expenditure for the year amounted to ₹42,10,00,000.

The largest expense was employee salaries and benefits, accounting for around 41% of the total expenditure.

Research and development expenses, marketing and advertising expenses, and other operatingexpenses also represented substantial portions of the total expenditure.

Operating expenses, including rent, utilities, and other administrative costs, were well managed, comprising 17% of the total expenditure.

6.3.2 Profitability Analysis:

Kadosh Softwares Solutions achieved a net profit after tax of ₹2,38,00,000 in 2023.

The net profit margin, calculated as the ratio of net profit to total revenue, was approximately5.23%.

Although the company demonstrated profitability, the net profit margin indicates room forimprovement in operational efficiency and cost management.

6.3.3 Interpretation:

Kadosh Solutions demonstrated strong revenue growth driven by software sales and consultingservices.

Effective cost management is evident from the controlled operating expenses despite significantrevenue growth.

The company's profitability and positive cash flow position indicate sound financial management.

Investment in property, plant, and equipment suggests a focus on long-term growth andinfrastructure development.

Overall, Kadosh Solutions appears to be in a healthy financial position with opportunities forfurther growth and expansion.

Limitations and future research work

The goal of a this a project a were a purposely kept A within what was believed to be attainable within the A allotted timeline and resources. As such, many improvements can be made. The A following recommendations are provided as ideas for future A expansion of this project.

Conclusion

In conclusion, capital budgeting is a fundamental process for organizations of all sizes and industries, including both small and large companies like Kadosh Software Solutions Inc. It entails making crucial investment decisions in long-term assets, with the aim of maximizing returns and ultimately enhancing shareholder value.

Throughout this project, we have explored various aspects of capital budgeting, including its importance, methods, stages, and the role it plays in guiding strategic investments. From evaluating cash inflows and outflows to considering risk factors and alternative scenarios, capital budgeting involves a comprehensive analysis to ensure that investment decisions are sound and aligned withthe organization's objectives.

For companies like Kadosh Software Solutions Inc., which specializes in capital-intensive projects and innovative software solutions, effective capital budgeting is particularly vital. It enables them to identify promising investment opportunities, such as research and development for new products or infrastructure upgrades, and allocate resources efficiently to maximize profitability and drive sustainable growth.

By leveraging advanced financial modeling techniques, investment analysis tools, and a customer- centric approach, companies can navigate the complexities of capital budgeting with confidence. Moreover, a commitment to innovation, collaboration, and strategic foresight ensures that investment decisions are not only financially sound but also contribute to long-term value creationfor all stakeholders.

In essence, capital budgeting serves as a cornerstone of financial management, guiding organizations in making informed investment choices that propel them towards their vision of success in the dynamic and competitive business landscape.

Findings

Through the exploration of capital budgeting and its significance, several key findings have emerged:

Importance of Capital Budgeting: Capital budgeting is crucial for both small and large companies alike. It involves making informed investment decisions in long-term assets, which can significantly impact the financial performance and value of the organization.

Methods of Capital Budgeting: Various methods are employed in capital budgeting, including discounted cash flow analysis, payback period, and net present value (NPV). Each method offers its unique insights into the feasibility and profitability of investment projects.

Stages in the Capital Budgeting Process: The capital budgeting process comprises several stages, including investment screening and selection, capital budget proposal, budgeting approval and authorization, project tracking, and post-completion audit. Each stage plays a vital role in ensuring that investment decisions are thoroughly evaluated and monitored.

Role of Incremental Cash Flows: Incremental cash flows are crucial considerations in capital budgeting, representing the difference between cash flows with and without the investment project. Evaluating incremental cash flows helps assess the impact of investment decisions on the organization's overall financial position.

Use of Net Present Value (NPV): NPV is a widely favored method in capital budgeting due to its ability to account for the time value of money and provide a concrete measure for comparing investment projects. It considers both future cash flows and the discount rate, offering a comprehensive assessment of project profitability.

Challenges and Considerations: Despite the benefits of capital budgeting, there are challenges and considerations to be mindful of, such as the need for accurate estimation of cash flows, selection of appropriate discount rates, and consideration of risk factors. Additionally, communication and explanation of capital budgeting concepts, such as NPV, to stakeholders may require careful attention.

Application in Kadosh Software Solutions Inc.: For companies like Kadosh Software Solutions Inc., capital budgeting plays a crucial role in guiding strategic investment decisions, particularly in capital-intensive projects related to software development and infrastructure upgrades. By employing sophisticated capital budgeting techniques and maintaining a customer-centric approach, Kadosh Software Solutions Inc. can drive sustainable growth and deliver value to its clients and stakeholders.

Recommendations

Based on the findings of the project, the following recommendations are proposed to enhance the effectiveness of capital budgeting processes:

Enhance Cash Flow Estimation: Improve the accuracy of cash flow estimation by conducting thorough market research, gathering reliable data, and considering various scenarios and potential risks. Utilize historical data, industry benchmarks, and expert opinions to make informed projections.

Utilize Sensitivity Analysis: Conduct sensitivity analysis to assess the impact of changes in key variables, such as discount rates, project costs, and revenue forecasts, on investment outcomes. This helps identify potential sources of uncertainty and allows for better risk management.

Regular Review and Monitoring: Establish a system for regular review and monitoring of investment projects throughout their lifecycle. Implement project tracking mechanisms to monitor progress, identify deviations from planned outcomes, and take corrective actions as necessary.

Investment Diversification: Diversify investment portfolios to spread risk and enhance overall resilience. Consider investing in a mix of projects with different risk profiles, time horizons, and expected returns to achieve a balanced investment portfolio.

Continuous Stakeholder Communication: Foster open communication and transparency with stakeholders, including investors, management, and employees, regarding capital budgeting decisions. Provide clear explanations of the rationale behind investment choices and solicit feedback to ensure alignment with organizational goals.

Training and Education: Invest in training programs and educational initiatives to enhance the financial literacy and analytical skills of employees involved in capital budgeting processes. Ensure that decision-makers understand the underlying principles, methodologies, and implications of capital budgeting techniques.

Integration of Technology: Leverage advanced financial modeling tools, software solutions, and automation technologies to streamline capital budgeting processes and improve efficiency. Implement integrated systems for data analysis, scenario modeling, and decision support to facilitate informed decision-making.

Regular Review of Capital Budgeting Policies: Periodically review and update capital budgeting policies, procedures, and guidelines to adapt to changing market conditions, regulatory requirements, and organizational priorities. Ensure that capital budgeting practices remain aligned with strategic objectives and best practices in the industry.

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