A PROJECT REPORT

on the Topic

"A Study on Capital Budgeting"

By

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USN: ICR18MBA29
MBA 4th Semester

Submitted to VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI
in partial fulfillment of the requirements for the award of the degree of
MASTER OF BUSINESS ADMINISTRATION

Under the Guidance of

INTERNAL GUIDE	EXTERNAL GUIDE
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DEPARTMENT OF MASTER OF BUSINESS ADMINISTRATION

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Batch 2018-20

CERTIFICATE

This is to certify that **Ms Niharika C S** bearing USN **1CR18MBA29** is a bonafide student of Master of Business Administration course of the Institute (2018-20 Batch), affiliated to Visvesvaraya Technological University, Belagavi. Project report on "**A Study on Capital Budgeting**" is prepared by her under the guidance of **Prof Sandeep Kumar M,** in partial fulfillment of the requirements for the award of the degree of Master of Business Administration of Visvesvaraya Technological University, Belagavi in Karnataka.

Signature of Internal Guide　　　　　　　　　　Signature of HOD

Signature of Principal

Viva-voce Examination:

Signature of Internal Examiner with date:………………………………………..

Name, Designation & affiliation …………………………………………………

Signature of External Examiner with date:……………………………………….

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28th Feb 2020

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Ms. Niharika C S** a Student of MBA, CMR Institute of Technology, bearing USN 1CR18MBA29 has done project work in our organisation for six weeks duration from **2nd January 2020 to 14th February 2020.** The project report on **"A Study on Capital Budgeting"** is prepared by her under the guidance of Mr Dilip S, Senior Manager.

We thank you for your contribution to the Company and wish you all success in your future endeavours.

For Tekvity Private Limited

For TEKVITY PVT. LTD.

Director

Sudhindra N

Chief Executive Officer

DECLARATION

I, Ms Niharika C S, hereby declare that the Project report entitled “A Study on Capital Budgeting” prepared by me under the guidance of Prof Sandeep Kumar M, faculty of MBA Department, CMR Institute of Technology and external assistance by Mr Dilip S, Senior Manager, Tekvity Private Limited. I also declare that this project work is towards the partial fulfillment of the university regulations for the award of degree of Master of Business Administration by Visvesvaraya Technological University, Belagavi. I have undergone a summer project for a period of six weeks. I further declare that this project is based on the original study undertaken by me and has not been submitted to any other University/Institution for the award of any degree/diploma.

Place: Ms. Niharika C S

Date: USN:1CR18MBA29

ACKNOWLEDGEMENT

I have been fortunate enough to get good timely advice and support from a host of people to whom I shall remain grateful.

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I am extremely thankful to **Prof. Sandeep Kumar M,** Head of the Department of Management Studies and Research, CMR Institute of Technology, Bangalore, for his advice and support throughout the completion of the project work.

It gives me immense pleasure to record my thanks to my Internal Guide, **Prof. Sandeep Kumar M**, Associate Professor, CMR Institute of Technology, Bangalore, for his valuable guidance and untiring support and cooperation in completing the project work.

I acknowledge the insights provided by my External Guide, **Mr. Dilip S**, Senior Manager, Tekvity Private Limited which helped me to a great extent in completion of the project work.

And finally, there is deepest of thanks for the patience and cooperation of the family and friends, without whom the endeavour would not have been possible.

Ms Niharika C S

USN : 1CR18MBA29

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EXECUTIVE SUMMARY

I have been selected the management intern at Tekvity Private Limited, the topic of this report is “A Study on Capital Budgeting” and I carried out my internship for a duration of 1st January 2020 to 14th February 2020. During this period I tried to integrate my theoretical knowledge of MBA and combine with the practical as observed during my internship.

The entire report is divided into five chapters starting with introduction regarding the industry and organizations, concept background and literature review of the study being carried out, research design and extraction on data, data analysis and interpretation, summary of findings, suggestions, and conclusion.

I got an opportunity to understand the work flow and structure and engage with different teams of the company. During this period I starting working on capital budgeting on their new innovative product. By applying the various techniques of capital budgeting like payback period method, average rate of return, net present value, internal rate of return, profitability index to find out whether it’s good to proceed with the project and how many years it takes for the return of initial investment.

I convey my understandings of this study through this project. At the end of the report I have share the detailed analysis and performed different analysis that I have gained during my tenure. I gained a tremendous knowledge working with multiple teams, followed by a conclusion which I gathered during my internship period.

CHAPTER 1

INTRODUCTION

1.1 INDUSTRY PROFILE:

When we look back at past of the consulting industry, the world's first modernised consulting company was founded in the late 19th century. From the beginning of the next century, consulting firm's management has concentrated primarily on two facets of the business environment for increased ground benefit, namely finance and engineering. After the 1930s, however, this situation shifted, as the consulting industry began to grow its reach far away from a few founding partners and small teams. Much of the consulting industry began to develop its market rapidly in the coming decades, with today's prominent US companies such as Arthur D. Little, A.T.Kearney, Booz Allen Hamilton and McKinsey & Company playing frontrunner roles in the increased growth of science management, operations and organizational theory.

The expansion of consulting firms began at beginning of the 1960s, when many of major American management consultancies spread into Europe in order to change European firms with their management models and expertise. Thus, over the next thirty years, the consultancy firm has been at a stage of unprecedented growth covering western markets, with global economic growth growing dramatically from about \$200 million to about \$50 billion at the beginning of the 21st century, where the growth of industry's thirty biggest consultancy firms ranged from around 20,000 in the early 1980s to around 430,000 in 2000.

Over the course of two decades, the consulting company has grown into one of the most developed industries in the professional services industry, producing sales between \$100 billion and \$300 billion, with a reliable estimation based on the concepts used. For the consulting industry, there are six domains: Strategy management consulting, finance advice consulting, management consulting, operations consulting, HR consulting, and IT consulting, which, when combines, cover more than 200 markets and functional areas with services and offerings. The vast majority of consultants work in large and mid-sized consultancy firms while, in terms of number of consultancy firms, these consultancy firms usually constitute no more than 15 percent of the total, with the vast majority of firms operating as independent consultants.

In addition to consultants employed in consulting firms, consultants are increasingly working in a consultancy role that leverages consultancy expertise beyond consultancies. Over a few decades, companies have taken tremendous strides to mature their internal advisory and implementation units, building consultancy with organizational and project management teams, and developing traditional 'consulting' capabilities across different divisions, roles, and process areas. The real global size of the 'internal consulting' sector is less understood, and figures vary widely from a fraction of the size of the consulting industry to broader market in terms of volume. Project management teams, strategic development teams, and dedicated advisory divisions are the basis of modern internal consulting positions. Many consultants frequently also step into management positions.

1.2 COMPANY PROFILE

Tekvity Private Limited is registered under RoC under MCA as Private company, which was incorporated in the year 2016 on November 22nd with 4 Board of Directors. With an paid up capital of five lakhs with a specific shareholding patterns.

Company focuses mainly on the product development and services in the area of information technology. Company also has an authorised capital of 10 lakhs.

Company diversifies its cross discipline domains in IT Industry for various technical and non-technical related services. Company is based in multiple locations in India, however the main office is located in Yelahanka Bangalore as the registered office address.

Table No 1: Company Details

CIN	U72900KA2016PTC097958
Company Name	TEKVITY PRIVATE LIMITED
Company Status	Active
RoC	RoC-Bangalore
Registration Number	97958
Company Category	Company limited by Shares
Company Sub Category	Non-government company
Class of Company	Private
Date of Incorporation	22 November 2016
Age of Company	3 years, 10 months

1.2.1 PROMOTERS:

1. **Sudhindra N – Founder Director:**

   Technocrat with over 16 years of strong technical expertise in Data Warehousing, Data Integration, Solution Design, Big Data, Automation, Project Delivery and management, Quality assurance across verticals like Banking, Finance, Securities, Retail, Life sciences and Telecom domains.

2. **Sudhir K S – Founder Director:**

   Sudhir brings with him over 16 years' experience in IT industry. He has executed lead roles in initiatives impacting the strategic growth of large corporates. Sudhir has extensive experience across the verticals – Retail, Healthcare, MFG & Banking sectors. He has embarked on the entrepreneurship journey with the vision of creating a large digitally empowered retail enterprise.

3. **Veena G – Director**

   A dynamic IT professional with over 14 years of rich experience in Data Integration, Data Analysis, ETL Design and Development, Database Design. She has strong experience in Big Data technology like HAD0OP, HDFS, Map Reduce, PlG, HlVE, SQOOP. Netezza, Vertica and Oracle. She also brings strong experience in HR and Operations Management.

4. **Srinath G – Director**

   Srinath brings over 20 years of IT experience in the areas of Delivery Management, Functional Consulting, Governance & Operational Excellence. He has experience in BI&DW, ERP, CRM, OCM and Product Management. He has extensive experience in leading and managing large teams across Development, Maintenance and Production Support services. He comes with strong understanding of different SDLC models and process improvement methodologies (Six Sigma, ITSM, CMMi, Lean). Srinath also brings with him over 10 Years of functional expertise in the areas of Finance, Accounting, Audit and Manufacturing.

1.2.2 VISION:

Vision is to be the globally admired enterprise business solution providers.

1.2.3 MISSION:

Mission is to create a positive and joyful working environment that invigorates the team members to deliver the best technology solutions and happy clients who transform into our word of mouth brand ambassadors.

1.2.4 QUALITY POLICY:

Tekvity private limited working hard for an encouraging environment for their employees. They motivate to work as they know that their consulting members come to them seeing for their jobs, and more clients will stay with them as they always have amazing talented employees who are always ready. They are convergence of dreams, hopes, problem solver, and towards growth; it’s a responsible they take seriousness. The culture value helps them handle with responsible with integrity. Tekvity Pvt Ltd is committed in providing the best product and services to their customer at the effective prices when being compared to the competitive companies. They are concentrated more on the customer satisfaction

1.2.5 PRODUCTS / SERVICES:

1. **PRODUCTS:**

a) CRM – Nitro CRM:

Customer relationship management (CRM) is a technique or methodology used for and by the organisations to manage company's interactions, conversations and mutual understandings with customers and possible customers. This methodology helps the organisations to stay in connection with their users or customers, improvise processes, and increase profitability & growth to the customers.

Features:

i. Leads: Leads are the tools used to track, follow-up, retrieve & track the process and also to generate potential users or customers to business. Leads can be generated over interactions based on the customer needs, problems, solving problems into a potential solution and create a value to the customers.

ii. Estimates: Based on the customer needs, estimates will be generated to customers based on the requirement & create an estimate invoice to potential customer/ clients and upon approval of estimates, generate an invoice to the customer.

iii. Proposals: Create proposals based on customer requirements and ensure to add all the aspects of customer requirement data like description, summary, table, figures and future scope upon single or multiple discussion with customer.

iv. Projects: Based on the customer requirements, create, manage and edit the requirements and engage a strong project management & also trace the time spent, money spent on each tasks assignment with powerful feature to track the project. Once project is accepted, assign the team members to tasks & manage the project execution and monitor the time assigned by each member.

v. Expenses: Track all the expenses made by the company & also setup the running company expenses. Set up a recurring and upcoming expense for a specific period of time. Also ensure all the expenses spent including overheads are billable to the customers.

vi. Support system: Ensure to get & provide a strong support system to generate the tickets when the customer raises a request and also generate the auto response or response by team. Ensure to address the tickets raised by ticket assignment team, ensure to provide an detailed ticket assignment with documentation, attachments and also ensure to provide the ticket replies, priority to the tickets based on the status of urgency and possible solution status.

vii. Reports: Reports are generated on two ways, internal reports and external reports. Internal reports are focused for the internal teams on detailed information on productivity, losses and traceability reports and external reports are generated to customers, to generate leads and also for public database or information which is available and useful for the customers

viii. Calendar: Calendars plays a very important role for organisations to get a view on company activities, calendars to trace and track the agreements or assignments on time without having an expiry date, agreement expiry date and also to follow up on due dates to finish or deliver the deliverables on time.

ix. Invoices: Create a detailed information with all deliverable details in Invoice to customers or clients. Ensure to cover all the aspects on taxation with crisp data to your clients on PDF document. If customer is subscriber to services as recurrent or recurring generate the invoice over a specific time period. Most of the times recurrent invoices are agreement mutually with service providers on task or time based to generate the invoices.

b) Inventory Management- POSwift:

POSwift is a cloud-based, barcode integrated; warehouse inventory management and point of sale billing solution that solves the problems of tracking live inventory, real-time sales across geographically spread stores.

Features:

i. Inventory Tracing using Barcode Scan: often lead management software or tool used to track the leads, inhouse process with simple tools also to follow up on the progress With the simple lead management tool you can keep track of leads and easily follow their progress add or delete files, import or export data and also leave a detailed notes.

ii. Inventory Trackton: Is a tracking tool for inventory management solution which offers to monitor on real-time eases & improvise the efficiency and traceability of inventory on a real time basis with a detailed idea on the stock availability or re ordering the stock, also to trace and follow up on solve moving inventory vs fast moving inventory.

Stays focused on the details of the inventory along with detailed idea on the reordering and ensure to provide right stocks every time. Realtime management tool provides good traceability and trust to potential customers to get the products on time.

iii. Warehouse management: Manage, control all warehouses in one tool at fingertip to trace, track and control the stocks in warehouse, also track the reports or input and output flows in warehouse anywhere at any point of time.

iv. Client management: Clients are building blocks to improve your business. Provide a management system to track all the notes, previous conversations, support materials related to previous conversation or interactions that lead to customer satisfaction. Ensure to have all necessary information of client as part of built in CRM to trace and track your customer's details and history in one place.

v. Cloud based: Work from anywhere – all you need is a computer and internet connection. Deploy faster, quick turnaround, remote monitoring, and support, no upfront capex on buying expensive hardware or opex on managing your own servers. Run unlimited users simultaneously from multiple locations or warehouses. Your operations team can simultaneously update the inventory while the warehouse staffs are scanning out products.

2. TECHNOLOGIES:

a) Data warehousing and BI:

In today's digital era, data plays an important role in making important decisions for any organisation or a company in making smart intelligence.

The data each day generated by most of the organisations are not effectively utilised or understood in a structured way to analyse, identify and use it in an appropriate way. Most of the business need to analyse the data intelligently to understand on the priority basis to understand, realise and implement the large amount of data in a constructive manner.

At Tekvity, we analyse and give a key structure to use data to model the business intelligently to analyse, iterate, edit, model, build predictive analysis to effectively use data in the organisations, that enables to strategize and build an driving enterprise to drive an organisation into an technological & global market place.

We create a structured approach to data along with our expertises in the domain of information technology with our cross disciplines team expertise & business processes to strategize, implement the decisions based on our approaches. We closely work with our clients in understanding the needs, problems and understand the data being generated by the organisations along with our technologically advanced algorithms with trained data sets using various machine learning tools to define the analytical tool to evaluate and transform the data into an meaningful information and that differentiates us and our clients to generate a success to their business in competitive business world.

We lead a way to success to our clients in making important data analytics which leads to make important decisions in the business processes.

b) Web and Mobile app Development:

Tekvity is committed to offer an client specific applications based on the client needs or problems, we offer an dedicated solution for the organisations

They build web and mobile applications using various cutting edge technology. We also offer an idea to prove concept development or actual development of a product using customer specific tools to build easily deployable solutions for the business needs.

They also convert manual processes into easy applications which improves the productivity of the business by automating the process, which increases the process of the company and also improves their revenue.

They engage with our clients' business in development of their business by closely engaging them & understanding their business needs along with their technology & engaging to build robust applications.

They work on various platforms to engage, develop and deliver the client specific application specific to mobile and static and dynamic web based. We focus on building cross domain applications ranging from personal to various domains like retail, finance, inventory etc.

c) Artificial Intelligence and Machine Learning:

One of the promising technologies used today and even in future. These technologies namely artificial intelligence and Machine learning are revolutionizing all cross discipline domains. Is it an AI or ML is defined to work its intelligence, some of the machines trained with datasets having a capability to self-learn, analyse, compute and execute.

Artificial intelligence is a man-made intelligent system which can self-learn and execute highly complex tasks; Artificial intelligence would be commonly used technology in the future on a day to day basis in all domains.

Artificial intelligence is using various algorithms analysed based on the data sets, understanding, self-learning models based on the datasets. Most AI applications are built to think like humans to achieve the complex problems into solutions.

Usage of highly complex situations and narrowing down it to simple intelligence by making its own decisions by analysing various parameters using various algorithms & mathematical models.

Machine learning is the various applications used to build artificial intelligence applications. We at Tekvity build various applications for various business needs. We have a strong data science team with our professional & industrial experience in this domain.

We have also successfully deployed and delivered applications. We follow a structured approach in getting requirements from our clients. We convert their requirements into meaningful solutions.

Our clients have got robust solutions which address their problems with our technological platforms.

d) Data Analytics and Big Data:

In olden days data generated was not constructed in an effective manner, however in today's world data plays an important role in everyone's life from an individual to a company. In today's era of internet data is overloaded and not able to analyze the data which is overburdened to most of the industries.

Be it technical data points or non-technical points, we have an internet revolution, where data plays an important role to an organization. Where data can be a game changer for various organizations based on the understanding, processing and structuring of the data point using an immense use of technology. Where various metric or data points are considered, constructed to analyze and visualize to understand the pressing needs of the industry. Data analytics generated on various tools can be a game changer to understand the problems, needs and opportunities of the business.

We at Tekvity, gather an ample amount of data points from various sources, analyze using a structured approach and execute the value addition to the various industries on the way the data or processing or handling of data. We enable companies to value additions to their technical knowledge & insight action plans.

e) Product development:

They offer two types of product development, one is hardware development on embedded systems and secondly, they offer software production using various technologies based on our client requirements.

They at Tekvity follow structured design thinking approaches to tackle and address the needs of clients and build them a product based on the client's needs. They also consider the idea for proof of concepts stage and proof of concepts to product development using our industrial experience.

As part of product development, they also offer:

- Strategic Advisory on product development
- Product Strategy on embedded system related product
- Growth Strategy for product as well as service
- Market entry & exit strategy for products

3. SERVICES:

a) **Direct hire:**

We have learned over years in the process of recruitment of our staff that there is a huge demand in the market to get the right kind of talent for a specific designation. Based on our learnings we understood the need of the recruitment services for Information Technology Companies.

We do a direct hire service to support various companies' growth. We also understand the organisations where we hire talents to a specific role based on company's culture, pride and work ethics. Tekvity assesses the candidates based on the need provided by the organisations/ clients. We understand the requirements and try to add necessary data based on the company working principles.

Our esteemed team works closely with talents and conducts one on one meetings with our clients' organisations to understand the fit of candidates. Tekvity engages candidates through various online and offline platforms to understand the matching requirements and assign the candidates to client companies.

b) IT Staffing and Recruitment:

In Tekvity they reduce the difference between demand and supply by innovation and recruitment of employees. IT staff augmentation provides one stop explanation to organizations that requires developing of applications across the various diverse technological tools.

c) Training and Development:

Tekvity provides industry program which are planned & personalized in fulfilling the particular requirement of the organization. They study the work process, provide the suitable learning for employees and then will combine with an instruction design, developing and delivery of strategy where meets are to be met. Their program customizes with consulting the clients to fulfill the needs and expectation according to the client's requirements. Training and development programme helps to enhance the skills of employees which plays the integral part for the company and also help to meet the goals and objective set by organizations.

d) Business consulting:

We offer business consulting to the one in need, be it a company or an individual who wants to convert their idea into products or services. We engage them with our team with diverse expertise. At Tekvity we also understand the organisation flaws by an approach to tackle the problems faced by the company and provide dedicated solutions to improvise the needs, gaps with our customised solutions.

e) Campus Training & Internship:

Tekvity will assist students in preparing for the industry placement while they are undergoing their academic education. The team will plan comprehensive and in-depth training curriculum. They will schedule the training calendar in a manner that will not put additional load / stress on the students. Also by conducting periodic assessments, they coach and work with students to bridge the gaps. Identify and select students for Internship at Tekvity and assist in off-campus placements – Customers, Partners, Network

Tekvity will plan and develop training curriculum as per industry requirements and will continuously revise based on the changing industry scenarios and needs.

Training Levels:

- Fundamentals: This track of training will equip the students to refresh their learning's from academics and in addition assist them in acquiring deeper knowledge and strengthen capabilities to participate in the campus selection process.

- Advanced: This track will be designed to introduce areas of emerging technologies and help them to explore opportunities in those areas.

1.2.6 COMPETITORS INFORMATION:

There are various companies who are offering similar products and services which Tekvity Private Limited is offering and some of those competitors information are as follows

a) Teknotrait Solutions:

Teknotrait Solutions is headquartered in the Silicon Valley of India- Bangalore and it has been serving clients across the globe. The company is serving clients by delivering cutting-edge engineering solutions since the year 2014. Over the period, they are working with the latest and upcoming technical projects to create their own success story. Teknotrait Solutions is an IT consulting and Outsourcing Company that holds expertise on all technical platforms. They are into Web and Mobile Application Developing, Software Test, UI/UX Designing and Digita1 Marketing. They aim for building a brand for every client project, with smart management skills to ensure on-time delivery.

b) Comorin Consulting Services:

The company aims to provide various consulting services to enterprises. The main mission of Comorin Consulting Services is to pursue excellence to pride themselves in their ability to develop quality products. They never cease to leverage the emerging technologies like Blockchain, Machine learning, Agile/ DevOps, Cloud Automation, Test Automation, Microservice architecture, Consulting and mobile application development.

c) iTAS Innovations:

The company trusts in the solutions that enhance the living quality through adoption of moderate solution philosophies, offers technology solution, similar to the today's situation and future as well. This organization is specialized in the area of embedded product designing and its services, which offers innovation, cost effective product solutions and services and project management consultancy. At present, this company is also planning to get in areas of customer lifestyle, sustainable living and health's and well-being.

d) RioSH Future Innovations:

RioSH Technologies Pvt Ltd operates from Bangalore is an Electronic product design company that is mixed with technologies, creative and engineering solutions where it helps customer to convert their ideas into best product and solution. This company focuses on the Defence, Healthcare, communication, and Transportation sectors. The firm is emphasizing to build long lasting bricks of electronic product design in this superior world with the goal of providing quality products. RioSH visualize being one among the ultimate designers of the world in the field of product designing. The company address and bridge the key technology gaps in the Embedded and IoT industry by adopting next-gen embedded technologies in the product development ecosystem. They provide quality experience starting from idea generation through product development to manufacturing and after-market product support. RioSH Technologies offers a wide range of Product design, Embedded Hardware and Firmware Design which will help to convert the idea into finished product.

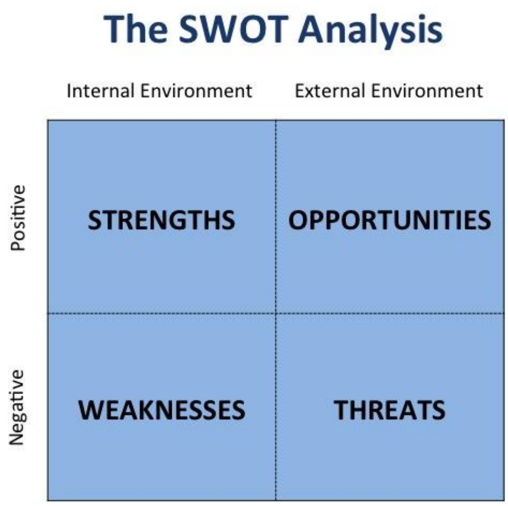
1.2.7 SWOT ANALYSIS:

The abbreviation of SWOT is for strengths, weaknesses, opportunities, and threats. The SWOT analysis is an instrument, which is to understand in evaluation of a organisation's position in the market and also in developing framework to understand the importance of company strategies. SWOT analyses evaluates the internal and external factors of the company as well as current and future potentiality. SWOT analysis is a approach used for assessing the performance, competition among companies, risk involved, and potential growth of a business and also part of a business such as a product line or division, an industry, or other new entity. Strengths and weakness is internal environment of the organization, while opportunities and threats commonly focus on the external environment. The brief explanation for the SWOT term is described below.

- **S**trengths: These are the parameters in a business or project of an organization that gives it an advantage over others companies.
- **W**eaknesses: These are the parameters in a business or a project in an organization that it causes the disadvantage.

- **O**pportunities: These are characteristics which is present in the external environment which are benefiting to the organization.
- **T**hreats: These are factors present outside the company and highlights the problems or possible threats which can harm of or occurfor the ongoing or future business in an organization.

Figure No. 1: SWOT Analysis



The SWOT analysis of Tekvity Pvt Ltd is being carried out in the following way:

STRENGTHS:

- Employee management skills
- Strong in operations
- Respond very quickly
- Good customer care

WEAKNESSES:

- Competitors can offer similar products with less cost
- Perceived risk as a start-up
- Little market presence or reputation
- Small staff

OPPORTUNITIES:

- Market growth
- Open to new segment of market
- Expansion to new technology

THREATS:

- Increased competition from existing industry players
- Companies setting up their own knowledge centres
- Availability of skilled labours

1.2.8 FUTURE GROWTH AND PROSPECTS:

The company always aims in providing great services to its customers and thus aimed in expanding its products and services according to the future requirement and based on the latest technology. With the development of new product the company aims at generating more revenue. The firm is also looking forward to expand its business to other sectors based on the requirement of the customers.

1.2.9 FINANCIAL STATEMENT ANALYSIS(FSA):

A financial ratio also known as accounting ratio is used to compare the two selected numbers or values from the company's financial statements(FS). In accounting, there exist standard ratios which are used for evaluation of financial condition of an organization or a company. The managers of the firm, the current and future shareholders of a firm and the creditors of the firm most frequently use the financial ratios. In order to compare the strengths and weaknesses of company the financial analyst also use financial ratios.

FSA is used to carry out to understand the logical inter relationship among different numbers in the financial statement. Thus some of the financial ratio like total sales to net worth ratios and total income to total sales ratios are preliminary ratio as they are fundamental in any organization as it defines the company financial analysis. And some other ratios like current asset to current liabilities ratio and current liabilities to net worth ratio are secondary ratio as they showcase the organisation landscape position and also the FS strengths. Thus by using the Tekvity private limited balance sheet, two ratios as been calculated and they are:

- Current Ratio
- Net Profit Ratio

Table No 2: Balance Sheet of Tekvity

PARTICULARS		As of 31 March 2018	As of 31 March 2019
		INR	INR
A EQUITY AND LIABILITIES			
1 Shareholders's funds			
Share capital		5,00,000	5,00,000
Researves and surplus		-8,34,884	-5,43,849
		-3,34,884	-43,849
2 Non-current liabilities			
Deferred tax liabilities(net)			
3 Current liabilities			
Short-term barrowings		16,77,125	8,51,250
Trade payables		55,780	6,68,095
		17,32,905	15,19,345
	TOTAL	13,98,021	14,75,496
B ASSETS			
1 Non-current assets			
Fixed assets			
(i) Tangible assets		71,621	33,873
2 Current assets			
Trade receivables		2,56,430	-
Investment short term		1,68,000	-
Cash and cash equivalents		7,28,198	13,47,527
Short-term loans and advances		1,51,200	64,000
Other current assets		22,572	30,096
TOTAL		13,98,021	14,75,496

a) CURRENT RATIO

A Current Ratio is actually a liquidity ratio which will measure the organizations capability to pay its liabilities based on the short time period. The current ratio are used to check the organisation abilities to payback its short term liability like payables and debt with its short term assets like receivables, cash, inventory. If the current ratio is higher, then it means that company's has the capability to pay its short term obligations.

Formula for Calculation of Current Ratio:

$$\text{Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}}$$

Table No. 3: Calculation of Current Ratio

Year	Current Assets	Current Liabilities	Current Ratio (in times)
2017-18	1326400	1732905	0.76
2016-17	1441623	1519345	0.95

ANALYSIS:

The table above conveys the Current Ratio of Tekvity for 2 years. It was 0.76 times during the year 2016-17 whereas next year 2017-18 it was reduced to 0.19 times. Thus Tekvity is trying to maintaining the standard ratio to fulfil its short term obligation.

INTERPRETATION:

The Company is not maintaining The Standard Current Ratio of 2:1 which is not adequate. The organisations current asset was decreased.

b) NET PROFIT RATIO

Net profit margin ratio is based on the premise that the company should earn sufficient profit on each rupee of sales.

Formula for Calculation of Net profit ratio:

$$\text{Net profit ratio} = \frac{\text{Net profit}}{\text{Sales}} \times 100$$

Table No.4: Calculation of Net Profit Ratio

Year	Sales	Net profit	Net profit in %
2017-18	7072447	(291035)	- 0.04
2016-17	1188233	(543849)	- 0.45

ANALYSIS:

The Net Profit ratio shows the quantum of profit available to the firm but the firm incurred loss in both the years. During the year 2017-18 net profit ratio of the company is -0.04%, the net profit for the year 2016-17 of -0.45%.

INTERPRETATION:

The table above interpret that loss of the company which is bad for the organization, but in the final year it is found that major decrease of net ratio than the last year. So for the next financial year the organization would not make a loss but will make the profit.

CHAPTER 2

CONCEPTUAL BACKGROUND AND LITERATURE REVIEW

2.1 THEORETICAL BACKGROUND OF THE STUDY:

For any company's financial management the capital budgeting is essential and it's the required managerial tool. The main objective of financial manager is to select investment which provides high returns and with sufficient cash flows. A finance manager would then be able to make a decision on the investment which is worth undertaking and he will also have a capability to make an intelligent or a smart choice among two or more alternatives.

Thus in an organization capital budgeting is about the strategizing and hold a unique understanding of capital outlay. Capital budgeting is a technique of making decision in right or wrong way to invest in funds used for a short or long term assignment projects, whose returns are known after certain duration of time.

Capital budgeting protocols are used for organizations commitment to spend money from the organisation funds based on current or future efficacious on long term investments into asserts in prediction flow off profit in next years in the organization. If a firm is making a decision on investment then it includes development, purchase, modernizing, and replacing the long-term assets in the organization. It's difficult to forecast the evaluation of the future events in capital budgeting. Thus the estimation of future cash flow of certain investment is a complicated problem.

Therefore the decision of investment a organization is mainly known as Capital Budgeting process. But capital budgeting is also known by various names in organization as well as various authors, they are Capital Expenditure Decision, Investment Decision and so on.

A capital budgeting supports the management of a origination in:

- Examining the current set financial and capital development objectives, goals and to determine the position the company is standing at in the market.
- By knowing profitability, one can able rank the projects and choose it accordingly.

- It helps to select between mutually exclusive investments or projects, which will hold the maximum shareholder’s wealth.
- Based on the process cash flow can be determined
- It helps in making a decision on choice for long term investments to be made in the organization.

IMPORTANCE OF CAPITAL BUDGETING:

The decision on capital budgeting is very hard as it involves in the several factors before taking a correct decision. Through following factors we can understand the importance of decision making in the organization and they are:

- Long Term Effects: Capital budgeting helps the organization to adapt the risk and returns of investment being made by the firm. The effective capital decision helps for future position of the company decisions in a reasonable extent. The future requirement for the project can be fulfilled effective for the finance manager or by finance analyst.
- Fundamental Commitments: A fundamental proportion of capital funds is reserved earlier as decision in capital budgeting usually involves in huge commitment of funds.
- Permanent Decisions: Since capital budgeting plays an crucial role before the commitment of starting the project it is permanent decision and can not be replaced after the project has been started. If the decision on capital budgeting is changed in between then in incur huge loss to the firms and may even stop the project in the mid way.
- Strength and capacity: The firms strength and capacity is increased if the make decision on the project is correct. Else the firm may lose its competitiveness if the firm lose it project or delay in during the project.

CAPITAL BUDGETING PROCESS (CBP):

CPB is stepwise assignment which are divided into the following process:

a) **Identify the prospective investment opportunity:**
   The Initial assignment to start CBP is to understand and identify the investor who will be making the investment in the project. In a organization a team is formed for planning who can either a individual or group of members in order to forecast the

future sales and production targets of the proposed project. Thus in this step we also estimate the future investment required of plant and machinery, supply chain, research and development, human resource etc.

b) Assemble the proposed investments:

Other aspect in the CBP is to arrange & structure the proposed investments where the production team and research and development teams has identified the investment proposition and has been submitted in standard format to investment firm. But before the investment proposal being reached to authorize investment firm, it will be put to rout to several other persons. The main goal of CPB is to view and reviews the proposal in different angles just avoid some future problems which also will help in bringing out organized planning in the proposed activities.

Therefore these investment propositions are typically categorized into various types in order to facilitate better budgeting, controlling and decision making. And thus the classification is given below as:

- Investment made on replacing
- Investments made on expanding
- Investments made on new product
- Investments made on obligatory and welfare

c) To make decision:

After assembling the investment proposition it's important to make a decision on whether to take up the project or no. Thus before investing in the project it required to take a correct decision as value of money is more and to avoid losses in future. The executives of the company can take decision when the investing expenditure is less than certain limit which is set in the organization. The executive like superintendent officers, managers and managing director can take the decision. But investments with huge expenditure require the acceptance from board of directors of the company.

d) To prepare capital budget and estimations:

Some projects involve small expenditure and larger expenditure. For smaller expenditures the decision can be taken by executives like project manager, managing director of the organizations by using appropriation and estimations. Whereas, for project involving with larger expenditure which are included in capital budgeting require the approval from board of directors. But before giving the approval for this project, the concerned executives seek the estimation for the project. The main objective of estimation is to see if the funds are being positioned correctly for the implementation of the project.

e) Implementation:

After estimation of proposed project and getting the approval from the executives, the step phase is to implement the project. In this phase, we convert the proposal into a project which will involve huge risk, time consumption and also complex. If there is any delay in implementing the project then it would lead to the future losses. The following factors need to be considered for implementing the project:

Appropriate formulations: The main agenda is to cause for running late is inappropriate assignment of projects. Thus before implementing the project it is required to carry out a primary study and comprehensive analysis, if these are not carried before than there would be huge shocks while doing the project.

To use the principle of responsible accounting: Allocating required resources and responsibility to managers of project for completing before the certain time and also to control the cost to execute the project.

To use of network techniques: The network techniques like PERT (Programme Evaluation Review Technique) and CPM (Critical Path Method) are used for project planning and controlling. By using these two techniques the monitoring of the project becomes easier.

f) Reviewing the performance:

After implementation of the project knowing the performance is very essential. In this phase we will compare the actual project with obtained result from the project. Performance review is very important as it consist of feedback. It is helpful in many ways:

- It can be known how real were the assumptions on the project
- Better decision can be made as it consists of documentation on experience through the project.
- It helps to reveal the judgment biasness.
- It gives alert for project investors.

CAPITAL BUDGETING TECHNIQUES:

Capital budgeting consist of advantages of the proposal, estimation of the future expenditure, estimating the requiring rate of return and evaluate various other proposals to opt one. Thus advantages & merits are demonstrated in the process of cash flow which will be appeared in proposal. After the completion of proposal we need look for techniques used in capital budgeting to get correct investment decision.

Therefore the techniques available in the capital budgeting decision are broadly categorized into two types and they are:

a) Traditional Technique.
b) Modern Technique.

Traditional Techniques:

The traditional techniques or non-discounting technique the cash flows are not discounted in order to find the worth of present value. There are two methods in traditional techniques. They are:

a) Payback Period Method:

The payback period is also known as payout method or pay off method as it evaluate the time period required to the investment to gain the original cash expenditure. It means the time needed for project to recover cash within the short period of time. The payback period method is traditional method of evaluation to a make decision capital budgeting. If in case the cash flows are not even for all years, then payback period is determined by the summation of the cash flow till the total is equal to the commencing cash expenditure of the project & investment proposal. The formula used for calculation is given below:

Payback period= Commencing investment / Yearly cash inflow

Payback period is the correlation of the commencing investment being made by the yearly cash inflow for the period till recovery.

Acceptation and Rejection criteria:

This method is used for decision criteria on acceptance or rejection of project proposal among the various alternatives. For a single investment assignment if the yearly payback period is lesser than the previously determined payback period then such an investment will be accepted. If there are various investment proposal then it will ranked according to the length of payback period. But some projects are also ranked according the priority level and the investment will shortlisted based on which is first in list of priority.

Advantages:

- This method is easier for calculation and can be understood in a simpler manner.
- Small companies with limited human resource can also effectively use this technique has it doesn't require the prior training.
- Since method is short approach which will be suited for the firms with shortage of cash or if there liquidity is not enough.
- Payback period is best suited for evaluation of single project or investment.

Disadvantages:

- In payback period method cash flows are fully ignored.
- The concept of time value of money is completely is discarded.
- This method also ignores the usage of rate of return concept.
- Salvage value and average economic life of investment or project is completed been ignored in payback period method.
- When the shareholders wealth is maximum then using this approach is not good choice.
- In this method each asset is considered individually when assets are isolated which is not achievable in real time basis.

b) Average Rate of Return or Accounting Rate of Return(ARR):

The other technique for calculating on capital budgeting decision is average rate of return or accounting rate of return. By using technique, the average profits earned after taxes and depreciation is divided with total capital expenditure or with investment being made on project. This method is mainly used to find the relationship between average yearly profits to investment made on project. Thus the theoretical formula for calculation of ARR is given below:

ARR= (Average profit/ Average investment)*100

Acceptation and Rejection criteria:

After the calculation of average rate of return, it's compared with either minimum rate or return or pre-decided rate or cut off rate. If the calculated average rate of return is higher than minimum rate of return or cut off rate, then this project or proposal will be accepted. If the calculated average rate of return is lesser than minimum rate of return or cut off rate, then this project or proposal will be rejected. If there are multiple projects then the project with highest average rate of return will be accepted.

Advantages:

- This method is very simpler to understand and easier for calculation.
- As this method uses the overall earnings of a project or proposal in calculating return rate and hence it delivers the correct view of profits in future.

Disadvantages:

- This approach ignores the definition of money's time value.
- Also this approach is not considering the cash flows, where is more important than the profits.
- This method doesn't consider the new investment being made after the sale or abandon of equipment.

Modern Techniques:

This is a modern technique for making a decision the capital budgeting on the project or proposal. In this technique the concept of time value of money is considered while evaluation of cost and benefits of project or proposal. This technique consists of three methods which are explained below.

a) **Net Present Value (NPV) Method:**

The NPV method is a modern technique used for evaluation of project or investment proposal. As this method considers the concept of time value of money, so it helps in the calculation of return on investment because of time factor. Net present value is defined as total of present value of cash outlay in every year subtracted with the present value of total cash outflow in every year. Whereas the cash inflows and outflows are calculated separately for every year by discounting the cash flows with the company's cost of capital.

NPV = $Cf_1 + CF_2 + \ldots\ldots + CF_n = e = CF_t$

$(1 + k)^1 + (1 + k)^2 + \ldots\ldots + (1 + k)^n = t = 1\ (1 + k)^T$

Whereas

Cf = Cash Flow for each year.

k = Initial investment.

n = No. of years.

These are the following steps to adopt the NPV method:

- The first step is to find the estimated rate of interest that must be selected and also the minimum rate of return or pre-determined rate of return.
- Next is to calculate the present value of cash outflows by using the above rate of interest.
- Then to calculate the present value of cash inflows at the predetermined rate of return.
- Calculation of NPV of the project or investment proposal by subtraction of the present value of cash outflows from present value of cash inflows.

To find the present value of rupee in any number of years, the following formula can be used:

Present Value (PV) = $1/(1 + r)^n$

Whereas,

PV = Present value

r = Rate of interest or discount rate

n = No. of years.

Acceptation and Rejection Criteria:

In order to find out whether to accept or reject the project or proposed investment, we consider positive and negative value of NPV. If NPV of the project is positive then it is accepted and if NPV of project is negative then rejected. Therefore in simple manner to describe

If NPV > Zero (Accept).

If NPV < Zero (Reject).

If in case of a no. of projects or more than one, then select the project which has greatest NPV if the NPV value is positive.

Advantages:

- This approach takes into account the idea of monetary time value.
- In this method we consider cash inflow and cash outflow rather than profits of the project.
- While calculating NPV we are allowed to change the discount rate. The NPV can be estimated using discount rates that differ over the time.
- By using this method we can consider the cumulative advantages that result from the lifetime proposal.
- This approach is most helpful for selecting the projects mutually exclusive.

Disadvantages:

- This method is very hard to calculate and thus difficult to understand.
- NPV can be used only for absolute measurement.
- It is very difficult in determining the good rate of discount.
- This approach sometimes might not yield required results as it involves in appropriations.

b) Internal Rate of Return (IRR) Method:

IRR is another modernized capital budgeting techniques which is used to make decision where it considers the concept of monetary time value. IRR is known as yield method, discounted return rate or time adjusted return rate. In this approach, the project or investment proposals cash flow will be discounted at a required rate of return through hits and trail method which is equal to NPV and so the calculation of amount of investment. This approach is called internal rate of return because discount rate is discounted internally only. Thus the discount rate is defined as average current value which consists of total cash inflow after taxation (CFAT) with average of present values of projects cash outflows. Thus to calculate the initial outlay the below formula is used.

$C = f_1 + f_2 + f_3 + \ldots\ldots\ldots\ldots\ldots\ldots / (1+r)^1 + (1+r)^2 + (1+r)^3 + \ldots\ldots\ldots\ldots$

Whereas,

C = Initial cash outlay at zero time.

f_1, f_2, f_3 = Future net cash flows at different periods.1, 2, 3, n

n = No. of years.

r = discount rate or internal rate of return.

The following steps are used to adopt the IRR method:

- The first step is preparing the cash flow table by using a random assumed rate in order to discount the net cash flow to the present value.
- Next NPV is found by reducing from the present value of total cash flows calculated from the above initial investments.
- If the discount rate which has higher rate gives positive NPV increase the discount rate additionally until the NPV become negative.

If the higher rate has NPV negative, the IRR must be among the roughly taken rates of discount.

But the actual IRR is calculated by interpolation method. This is calculated using the formula:

$$\mathbf{IRR = R_i + \frac{PV\ of\ CF\ @\ R_i - PV\ of\ COF}{PV\ of\ CF\ @\ R_i - PV\ of\ CF\ R_h} \times (Rh - Ri)}$$

Whereas,

R_i = Lower rate of interest.

R_h = Higher rate of interest.

PV = Present Value.

CF = Cash Flows.

COF = Cash Out Flows.

Acceptation and Rejection Criteria:

The proposal will be approved if the IRR greater than or equal to acceptable minimum rate that is discount rate or cut off rate or else the proposal will be refused.

When IRR > k (Accepted).

When IRR < k (Rejected).

If the project with a higher rate of IRR is approved in case of multiple proposals as long as IRR is greater than rate of discount.

Advantages:

- This approach take into account the idea of monetary time value
- Based on the cash flow of project not on accounting profit over the time period of the project to calculate its return rate.
- This method is also well matched with the purpose to maximize the profitability and also considers the shareholders wealth.

Disadvantages:

- This method is very difficult in understanding and operating.
- It will give some mislead and inconsistent result when the NPV of a proposal does not reduce with rate of discount.
- Sometimes it will fail in indicating a proper choice among mutually exclusiveness under few situations.
- It is founded on the premises that the earnings are reinvested in the IRR for the durability of the idea or project.

c) **Profitability Index Method or Benefit Cost Ratio:**

The method of profitability index is often referred to as the time-adjusted method of evaluating the investment plan or project. A benefit-cost ratio or desirability factor is also referred to as the profitability index as the relation between the present value of the cash inflow at certain rate of return and the initial cash expenses of investment. The formula for calculation of Benefit Cost Ratio or Profitability Index as follows:

Profitability Index (PI) = Present Value of cash inflow / initial cash outlay

Acceptation and Rejection Criteria:

When PI > 1 (Accepted).

When PI < 1 (Rejected).

In situation of the multiple proposals or projects, the project with greater PI needs to be acceptable.

Advantages:

- This approach takes into account the idea of monetary time value.
- It's relative measuring of the project profitability.
- Taking into consideration the purpose to maximize the profitability.

Disadvantages:

- It's difficulty in understanding.
- It is not easy in determining and appropriating rate on discount.
- It involved in higher computation than in traditional method.
- In comparison with the ventures of uneven investment fund, it can not offer good results.

USES OF CAPITAL BUDGETING:

- Budgeting helps to formulate the long term objective of the organization.
- In order to search and indentify new investment opportunity through capital budgeting.

- It helps to classify project or proposal and recognize the economic depended proposal or project.
- To estimate and forecast the present and future cash flow.
- It helps to transfer the necessary information's to make better decision to help for better investment.
- Capital budget help to control the expenditure and to monitor carefully the important aspect of execution of projects.
- It is used for finding the difference between different techniques available in capital budgeting and find the project or proposal which is to be accepted and rejected.

ASSUMPTIONS IN CAPITAL BUDGETING:

The Capital Budgeting decisions involves in analytics procedure. A few of assumption is necessary to make:

- Certainty in regard to money & benefit: It is actually hard in estimating the investment and benefit for project more than 2 to 3 years.
- Profitability Motive: It is important to increase profit in an organization thus is the other assumption in making decisions on capital budgeting.

RISK AND UNCERTAININITY INVOLVED IN CAPITAL BUDGETING:

Capital budgeting decision helps to invest the existing funds for a prolonged investment with in expectation of high return in future years. The money invested and the return from project will not be forecasted with definite due to various factors such as the future retail of the products, change in technologies, new government policy, etc.

Due to certain factors connected with investment and returns makes the decision takers to take in account the distribution in their estimations thus capital budgeting involved in uncertain and risks. On basis of following, the estimation of cash flow is done:

- Project capacity.
- Cost of depreciation.
- Tax rates.
- Demand for the products in future.
- Expected economical life of products. etc.

Uncertainty may be because of:

- Economic factors.
- Market factors.
- Tax rates.
- Interest rates.
- International factors

2.2 LITERATURE REVIEW:

The researcher has conducted survey of literature on the topic of the study. A few among those are highlighted below:

Cherukuri (1996) in his study selected the few private organizations and matched them with the practice of capital budgeting's in different other country like Singapore, Malaysia and Hong Kong. This research showed that 51% of the company in his study used Internal rate of return(IRR), 30% used net present value(NPV), 38 % with period of time or time period and 19% used average rate of return method respectively. Around 59% used sensitivity analysis and 90% used of payback period for shortening risk. Further, in his survey he found out that 51% of Indian companies used internal rate of return to evaluate their investment criteria. Whereas the non-discount methods like average rate of return, payback period were mainly used as the substitute for supporting discounting methods.

Chadwell-Hatfield, ed al., (1997) through his survey found that to appraise the proposals most of the 70% company's prefers IRR where as 84% preferred net present value method. Around two-third of organizations believed that to accept a project they must have less payback period with more IRR or NPV.

Truong, Peat, & Partington (2007), by his analysis on capital budgeting practice found out that NPV, IRR and payback period were accepted methodology for evaluating & to evaluate projects for Australian listed companies. And the real option methods got ground in capital budgeting and is the part of mainstreams.

Graham and Harvey (2002) did a survey of 392 CFOs and found large firms utilized NPV and CAPM to a large extent. Smaller firms, on the other hand, utilized the Payback Method to a great extent. There is a maximum likelihood of firms with high debt ratios to use

NPVand IRR than organizations with less debt ratio. They found out that CEOs who has MBA qualification use net present value techniques than CEOs with non-MBA CEOs qualification.

Jain and Yadav (2005) identified that 76 percent of manufacturing PSUs studied utilized IRR as an evaluation technique. Payback period (PBP) method with 32 percent and Net present value (NPV) with 28 percent came second and third respectively in the case of manufacturing PSUs. 50 percent of service PSUs studied used Payback period (PBP) method. IRR and ARR came second and third respectively with 43.75 percent and 31.25 percent. Weight Average Cost of the long terms source of finance is drawn as capital cost by 58.33 percent of the manufacturing PSUs studied. This drops to 33.33 percent in the case of service PSUs studied. .52.38 percent of manufacturing PSUs studied used market value weights in determining the cost of capital. This is contrasted with 57.14 percent of the service PSUs using book value weights for evaluating the capital cost.

Lord & Boyd (2004) in their study surveyed 50% of New Zealand authority for understanding the overtook capital budgeting. Current survey were studied & then carried out for local authority of New Zealand. The obtained outcome for these two studies showcased that seventy five percent of local authority used cost benefit analysis and net present value financial evaluation on capital investment. But comparing to work carried out by private authority, they found there is a larger focuses on conditional aspect on decision making.

Holmen (2005) conducted study on technique for capital budgeting by Swedish organization which also restated his previous studies of 2000. His research states that more organizations uses NVP or IRR than smaller organizations. Through his studies found that payback period method is very qualifiable & most commonly used method in capital budgeting were 79 % organizations used it.

Jain & Kumar (1998) study of ninety six public company positioned on BSE in India and five companies of South East Asia most popular techniques was payback period with eighty percentage companies and next technique was NPV and IRR. Its good consider high cut off rate & lesser payback period method for sensitivity analysis.

Babu and Sharma (1995) in his study noticed that discount cash flow method was used by 75 % was the chosen organizations. In order to handle risk they used sensitivity analysis and adjusting the rate of discount.

Dhanker's (1995) observed in his study that discounting factor technique is used in 16% organizations whereas 33% organizations used non-discounting factor technique like payback period and average rate of return. In order to avoid risk 51% companies used rate of discount and 45% used capital asset price model.

Kester and Chang's (1999) survived few Chief Executive Officers from various countries like Singapore, Malaysia, Indonesia, Australia, etc. In this survey it was known that discounting techniques like NPV and IRR method was popular technique to appraising project or investment and sensitivity analyses and scenario analyses for assessment of risk in all the countries.

Stanley Block (1997) in his study used small organizations for evaluation of technique in capital budgeting used few years back and it was known that 43 percent follow with payback period method, 22 percent use average rate of return(ROR). But it was seen that owners of small organizations have raised their culture as 27 % still use discounted factor technique for primary technique for analysing. In structure to mitigate the risk, high return for increasing the discount rate or lessening of payback period was used by 46 % organizations.

Bierman (1993) by this analysis found that 73 of 100 organizations used discount factor analysis where IRR was quite famous than NPV. Even though payback period was popular technique it's not the prime technique used. Whereas 93 percent organizations use weighted average for discount factor techniques and in order to avoid risk 72 percent use rate of discount based on project.

Drury, Braund and Tayles' (1993) completed surveying of 300 manufacturing companies which identifies that payback period is 85 percent and IRR is 81 percent are the widely popularly analysed method for appraisal of project. Sensitivity analyses is widely used risk analyses technique in project or investment proposal. Also a majority of respondents (95 percent) never used either CAPM or Monte Carlo simulations.

Petry and Sprow's (1993) in his study for around 150 organizations it is noticed that 60 percent of the organizations use non-discounting capital budgeting technique that is payback period method. Around 90 percent of organizations use NPV & IRR for capital budgeting technique. Senior finance management have never heard the difficulty in IRR as many rate of return or dispute among NPV and IRR.

Ryan and Ryan (2002) did study that size of organizations matters for finance and bigger organizations use NPV method and asset pricing model. Whereas smaller organizations use risk analyses technique like risk adjusting rate of discounts, decision tree.

Jog and Srivastava (1995) in their studies noticed that most used method in company like Canada & UK is payback period method.

Anand (2002) in his study for India corporate finances observed for NPV method is the most used technique for capital budgeting and next IRR method is commonly used. In order to handle risk discount rate has to be reduced and sensitivity analyses and scenario analyses are the most popular technique used.

Petty J William, Scott David P and Bird Monroe M (1975) have seen response from 100 organizations out of 500 organizations regarding the technique they used for existing and new product line. It was known that in order to evaluate the project the most used method was IRR And is commonly found that discounting cash flow(DCF) technique was widely used for evaluation of new product line than of existing.

Gitman Lawrence G and John R Forrester Jr (1977) in his survey analyzed the response from 110 organizations out of 600 organizations that they have high stock price growth in the years of 1971 to 1979. The questionnaire for this survey in regard to capital budgeting technique, dividing the responsibilities on decision on capital budgeting, the main and rough stages of capital budgeting, discount rate and risk assessment. It was found that discounting cash flow technique was most used method the project evaluation that is internal rate of return. But this some organizations used payback period method to avoid risk. And majority of organizations have discount rate in 10-15% and it can be adjusted with risk.

Pettway (2009) in his survey took a sample of 300 organizations. The questionnaire was mailed regarding different areas like development, entertaining industry, public services, retail to research on process for capital budgeting and various methods used to avoid or decrease risk. Through his conclusion he was understood that IRR is widely know & popular method for making decisions. Whereas majority was organizations increase their profits for adjusting risk and uncertain in project and to calculate future cash flows which is important phase for process in capital budgeting.

Klammer, Thomas P. (2008) carried out survey on 340 organizations in France which were listed in last five years from years 2001-06 and organizations with 10 lakhs of capital outlay.

And in his conclusion he stated that present value method was most common and preferred method used.

2.3 RESEARCH GAP:

From the above literature review, it has been found that researcher have their own analysis on the best method being chosen among the various capital budgeting techniques. Many of the organizations consider internal return rate method as best technique followed by payback period method and net present value method to find risk and uncertainty of the proposed project. Thus it is better to check the all the techniques of capital budgeting before concluding the decision on which project to choose and by what time the initial investment of the project can be recovered as well the risk and uncertainty of the proposed project.

CHAPTER 3

RESEARCH DESIGN

3.1 PROBLEM STATEMENT:

The study about capital budgeting is to find out when there is return on investment will be recovered for the new product to be launched by the company through the various capital budgeting decision and techniques. In every company, the finance statement or balance sheet helps for decision making. Thus the information produced must be exactly correct and should be meaningful. The cost accounting has a main disadvantage has it has led to high inflation using certain methods over past few years. But still there are some problems associated with capital budgeting like has it cannot provide details of decision made, limits in capital evaluating model and to appraise the investment, less infrastructure facility discourages the production and services of company and final to monitor or to post audit all the capital budgeting decision is very important for a organization. But this is very costly and it's being ignored in real time. Therefore the company management should take care of such activities as it favours the firms over return risk and values.

3.2 NEED FOR THE STUDY:

- This study of capital budgeting is carried out to analysing and also understand the process of budgeting in finance department where theory knowledge is exhibited for practical implementation.
- In order to understand the organization operation by applying the different capital budgeting technique.
- To understand various sources were the company is getting funded.
- To conduct finance analysis of different proposal towards initial investments thus to select the best in multiple proposal or projects.

3.3 OBJECTIVES OF THE STUDY:

- Understand different types of capital budgeting problems that company faces.
- In order to make a decision on capital budgeting certain factors need for considerations to be outlined.
- In order to know various methods to calculate the size for capital budgeting and also to evaluate investment proposals.
- To make an analysis and understand the strength and weaknesses of current process in the capital budgeting.
- To know the profit, risk, growth and uncertainty of the proposal by consideration of all the cash flow.
- To make suggestions to improvise the finance position of the organization.

3.4 SCOPE OF THE STUDY:

In capital budgeting, certain appropriation for expenditure must be taken into consideration which is related to:

- Constructions or acquisitions of capital facility included with land purchases, preparations and easement.
- Acquisitions, constructions, demolitions or replacements of capital assets.
- The major repairs or renovations of a capital assets where materials extents its usefulness of living or improve or increase the capacities.
- Analysing the effect of budgeting technique in the organizations.
- In plan or designing of some above.
- To know the practice use of budgeting in evaluation the projects.
- To make conclusions that derives from this research and to provide suited suggestion to efficiently utilize the expenditure decision.

3.5 RESEARCH METHODOLOGY:

To accomplish the above objective the below methodologies has been followed. Thus information required for this project is gathered from Tekvity Private Limited by using two sources: primary sources and secondary sources.

Primary data: The primary information is gathered through observations and interactions with the finance department of organization. It is said to be first hand data.

Source of primary data:

- Data was obtained through discussions with the organization mentor.
- Data is also gathered by interactions with office staff those are working with finances and account department of the company.

Secondary data: This data is gathered through websites, balance sheets and various books.

Sources of secondary data:

- Company records
- Financial statements
- Magazines
- Newspapers

3.6 LIMITATIONS OF THE STUDY:

The various limitations under this study are as below;

- Limitation to evaluate of capital investment decision is uncertainty. Whereas the biggest limitation is both uncertainty and risk to evaluate the technique of capita1 budgeting which is required to estimate the cash inflows and cash outflows of the future. It's very difficult to acquire the financial data in organization as the data is very sensitive. The study on the project is always carried out the data which is already available and the analysis is made on that because of data restriction. Since this study is finance based data that are obtained from the organizations balance sheet where the limitation of financial statement are also applicable equally.
- The results on decision on capital budgeting are dispersed over a span of period. At different point of time the decision on the cost and benefits can be taken. The project cost can be recovered sooner. Whereas, it takes certain years in order to recover the investment being made on the project.

3.7 CHAPTER SCHEME:

Chapter 1: Introduction

The chapter introduces on industry profile in brief with company profile its promoters, vision, mission, products & services and future prospects of the company.

Chapter 2: Conceptual Background and Literature Review

This chapter deals with the theory background on title of the project and concepts involved in it. It is also about the study of research papers and projects carried out by the different researcher scholars to understand the gap and to make a study about such gaps.

Chapter 3: Research Design

This chapter is about the problems, scopes, need of the study, objectives of study with the research methodo1ogy from where the data is collected.

Chapter 4: Data Analysis and Interpretation

This chapter takes the center stage where the analysis & the interpretation of the data which are collected & shown

Chapter 5: Summary of Findings, Suggestions and Conclusion

This chapter deals with the observation, finding that would be arrived after the study, also the suggestions and recommendations that would he found after studies are undertaken and final conclusion.

CHAPTER 4

DATA ANALYSIS AND INTERPRETATION

INTRODUCTION:

Tekvity Private Limited as a new project ongoing with a certain investment and its required to know the return on its investment on the proposed project through different capital budgeting techniques as briefed in previous chapters. Thus the proposed project details are given below:

Project Details: Dementia is most prevalent in elderly, unrecognized dementia lead to iatrogenic illness, current methods of early screening assessment for dementia is subjective questionnaires, it's difficult to map the stage of dementia in early stage and provide treatment. There is a need of a objective way to assess and screen elderly with mild cognition impairment in order to prevent dementia and cognitive disability. The solution to map cognitive impairment stage based on augmented reality based app to map spatial memory, prospective memory & executive functions along with EEG.

USP (Unique Selling Proposition) of Product:

- Accurate way of mapping.
- Cognitive impairment.
- Neuro motor index of elderly.
- Cognitive outcomes.
- Support neurologists in classifying patient health, risk, and with Mild Cognitive Impairment (MCI).
- Easy to use.
- No barrier to language, religion.

The overall investment required for this project is 48.46 lakhs following time liners to complete the project within the span of one year. The details are given below,

a) Detailed Design Engineering (0 to 2nd month)
b) Alpha Product of AR application (2nd to 5th month)
c) Alpha- product of EEG module with signal readout (2nd to 6th month)
d) Testing & development of behavioural analysis (6th to 9th month)

e) Deployment of devices in 10 hospitals (10^{th} to 12^{th} month)

The details of breakup investment been represented in the following table

Table No 5: Investment Table

Investment (need to raise)	**Amount (₹)**
Equipment’s	400000
Consumables including server's	400000
Human Resources	2200000
Admin & overheads	480000
Outsourcing, Marketing & BD	1366000
Total Investment	**4846000**

According to technical experts, the cost of the device per unit is ₹ 150000 and the subscription cost per person is ₹ 200.

The following table shows the cash flows for next four years with number units sold, number of customers, device revenue, subscription cost, SG&A (Se11ing, Genera1 and Administrative Expenses) and R&D (Research and Deve1opment)

Table No 6: Cash Flow for Four Year

Headings	**2020 – 2021**	**2021 – 2022**	**2022 – 2023**	**2023 – 2024**	**2024 – 2025**
Product 1: ReLife No. of Units Sold	R & D	15	25	40	60
No. of Customers	R & D	300	600	900	1,300
Device Revenue	-	2250000	3750000	6000000	9000000
Subscription Cost	-	60000	120000	180000	260000
SG&A	800000	400000	400000	400000	400000
R&D	4046000	646,000	400000	400000	400000
Net Income	-4846000	1,264,000	3,070,000	5380000	8460000

The Device Revenue, Subscription Cost and Net Income is calculated by following formulae:

a) Device Revenue= Number of devices sold * Unit price of device

b) Subscription Cost= Number of customer * Subscription cost

c) Net Income = Device Revenue + Subscription Cost - SG&A - R&D

PAYBACK PERIOD (PBP) METHOD:

Table No 7: Calculation of Payback Period Method

PAYBACK PERIOD(PBP)		
Year	Cash Flow	Cumulative Cash Flow
0	-4846000	-
1	1,264,000	1,264,000
2	3,070,000	4,334,000
3	5380000	9,714,000
4	8460000	18,174,000
	PBP	3 Years

Interpretation: From above table no 7 we note that the payback period which is calculated in Excel for the period of 4 years , since the cash flow is different for each year, thus the cumulative cash flow are taken in order to calculate the years. It is noted that the time period took to recover the initial investment in this project is 3years. Thus, this project will be accepted by the organization as the payback period lesser than higher standard time set by the organization.

AVERAGE RATE OF RETURN (ARR) METHOD:

Table No 8: Calculation of Average Rate of Return Method

AVERAGE RATE OF RETURN(ARR)	
Year	Cash Flow
0	-4846000
1	1,264,000
2	3,070,000
3	5380000
4	8460000
Average Net Profit	4,543,500
Initial Investment	4846000
ARR	**93.76%**
Cost of capital	10.00%
ARR	**Accept**

Calculation:

Average rate of return = Average Net Profit / Initial Investment

Where, Average Net Profit = Average Cash Flow / No. of Years

= 18174000 / 4

= 4543500

ARR = 4543500 / 4846000 *100

= 93.76 %

Interpretation: From the table no 8 we observe that average rate of return is being calculated in excel sheet and the above calculations represent the theoretical way to calculate average return rate. This proposal will be acceptable if at all the ARR is most than cost of capital (10 %) fixed by the management of organization else it's being rejected if the project has ARR lower the cost of capital.

NET PRESENT VALUE (NPV) METHOD:

Table No 9: Calculation of Net Present Value

NET PRESENT VALUE(NPV)	
Year	Cash Flow
0	-4846000
1	1,264,000
2	3,070,000
3	5380000
4	8460000
Cost of capital	10%
NPV	**₹8,660,648.45**
NPV is Positive	**Accept**

Calculation:

Table No 10: Theoretical Calculation of NPV

Year	**Cash Flow**	**PVF@10%**	**PV of CF's**
0	-4846000	1	-4846000
1	1264000	0.909	1148976
2	3070000	0.826	2535820
3	5380000	0.751	4040380
4	8460000	0.683	5778180
		Total Cash Flow	3811356
		NPV	**8657356**

Interpretation: The table no 9 shows the calculations of net present value using excel and the table no 10 shows the calculations of net present value using theoretical method. Thus the NPV values obtained in both the methods are approximately same and we can observe that the NPV value is positive. Thus we can accept this proposed project because net present value is positive which is higher than zero.

INTERNAL RATE OF RETURN (IRR) METHOD:

Table No 11: Calculations of Internal Rate of Return

INTERNAL RATE OF RETURN(IRR)	
Year	Cash Flow
0	-4846000
1	1,264,000
2	3,070,000
3	5380000
4	8460000
IRR	57%
Cost of Capital	10%
IRR>Cost of Capital	Accept

Calculation:

Table No 12: Theoretical Calculations of Internal Rate of Return

Year	Cash Flow	PVF @ 50%	PV of CF's	PVF @ 60%	PV of CF's
0	-4846000	1	-4846000	1	-4846000
1	1264000	0.667	843088	0.625	790000
2	3070000	0.444	1363080	0.391	1200370
3	5380000	0.296	1592480	0.244	1312720
4	8460000	0.198	1675080	0.152	1285920
			627728		**-256990**

$$\textbf{Internal Rate of Return} = \textbf{Lower rate} + \frac{\textbf{PV @ Lower Rate}}{\textbf{PV @ Lower Rate - PV @ Higher Rate}} \textbf{*(Difference in rate)}$$

= 50 % + (627728 / 0.7095232605) * 10 %

= 57.1%

Interpretation: The table no 11 represents the calculations of internal rate of return using excel and table no 12 represents the calculations of internal rate of return using theoretical method. The IRR values obtained in both the methods are same. So from the beyond calculation, the project investments are evaluated based on IRR. Return rate is defined or obtained based on the capital made. In this calculations the IRR is obtained as acceptable IRR of 57%, which is more than the investment made on the capital (10%)

PROFITABILITY INDEX:

Table No 13: Calculation of Profitability Index

PROFITABILITY INDEX(PI)	
Year	Cash Flow
0	-4846000
1	1,264,000
2	3,070,000
3	5380000
4	8460000
PI	**2.78717467**
Cost of Capital	10%
PI > 1	Accept

Calculation:

Profitability Index = 1 + NPV/ Initial Investment

= 1 + 8660648.45 / 4846000

= 2.79

Interpretation: The table no 13 shows the calculations of profitability index using excel and above showed the calculations using theoretical method. Using both the methods the values are profitability index is same. So, from the previous data, we notice that profitability index is 2.79 were it is more than one. Therefore, we can accept this project.

CHAPTER 5

SUMMARY OF FINDINGS, SUGGESTIONS AND CONCLUSION

5.1 STUDY FINDINGS:

The project with the estimated initial investment of ₹ 4846000 is generating unequal cash flows each year and thus the following points observed are given below,

- Through the Payback Period (PBP) method calculation we understood that the investment made to this project can be recovered during 3rd year itself.
- By using Average rate of return (ARR) method with obtained value of 93.76 % were is more than cost of capital (10 %), so thus this proposal can be acceptable.
- Net present value (NPV) is obtained positive through calculation, so thus the project can accepted.
- Through the calculation internal rate of return (IRR), it's observed that this project is accepted has obtained IRR value 57 % is more than the cost of capital (10 %).
- Finally by using Profitability Index (PI) method it is observed that this project can is accepted because obtained value of PI 2.79 is greater than 1.

Through the above observations it found that it is good to invest in the proposed project as the initial investment is recoverable earlier.

5.2 SUGGESTIONS:

Based on the results observed in this project there are few aspects which can be suggested and they are,

- The various departments taking place in the Tekvity Private Limited to change so as to develop as a fully-fledged research and developed department for bringing technological changes and improvements in its design and process.
- The company should be providing training to the employees. So that they can take information about the new technology to improve the working process.

- As the company is in loss according to last financial statement thus it has come up with some new product in order to make profits.
- In any organization a good communication has to be maintained between among departments in the organization
- The company should use proper budgeting control system to evaluate profitable projects.

5.3 CONCLUSIONS:

When a company is preparing a capital budgeting for its business, then it means that the company is planning for the future outcome of the business for a month or year. Investment decisions in a business depends on how the project budgeting is involved. While making decision on the capital budgeting, a finance analyst should analyze the long term investment programs effectively; so as to enhance the business overall and thus maximum profit can be obtained. Whereas, most of the businesses either forget or ignore the other half part of the capital budgeting. In any business a capital budgets are usually proposed, discussed, and accepted. These decisions are used to impact managerial action for prolong time implications and affects the growth figure and profit of the company. Tekvity private limited should think in prolonged way and must find the opportunities' for different kind of businesses. So it's always recommended to remember the records that have been created during our business period. A decision on capital budgeting is of specific sacrifices of internal resource in order to get undetermined outcome in future but hopefully a profit. Thus in any organization capital budgeting is the most important decision to be taken by management which leads to profit, growth and risk. Thus through various techniques of capital budgeting it's understood the proposed project is accepted and management of Tekvity private limited can take further decision on accepting project.

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