Feasibility and Profitability Analysis

An Internship Report for

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MBA Finance

BY

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GOA UNIVERSITY

Date: 28th April 2023

Examined by:

Seal of the School

DECLARATION BY STUDENT

I hereby declare that the data presented in this Dissertation / Internship report entitled, "Feasibilty and Probability analysis" is based on the results of investigations carried out by me in the (Management Studies) at the Goa Business School, Goa University under the Supervision/Mentorship of Prof. Purva Hegde Desai and the same has not been submitted elsewhere for the award of a degree or diploma by me. Further, I understand that Goa University or its authorities will be not be responsible for the correctness of observations / experimental or other findings given the dissertation.

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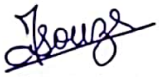

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COMPLETION CERTIFICATE

This is to certify that the internship report **"Feasibility and Profitability Analysis"** is a bonafide work carried out by **Mr. Joshua Myron D'Souza** under my mentorship in partial fulfilment of the requirements for the award of the degree of Master of Business Administration in the Finance at the Goa Business School, Goa University.

Date: 28/04/2023

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INTERNSHIP CERTIFICATE

This is to certify that Mr. Joshua Myron D'Souza, student of the Goa Business School, undergoing Master's of Business Administration (MBA) in Finance has successfully completed Internship between 1st March 2023 to 26th April 2023 at Mangal Analytics and Research Consulting Private Limited. He actively participated in the project execution during the period of internship and learned the skills needed for Projects in Market Research Feasibility and Financial Analysis.

Mr. Ashutosh Kharangate
Managing Director
Mangal Analytics and Research Consulting
Private Limited

Place: Panjim – Goa

Date: 26th April 2023

Seal

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Profile of the Company - MARC

MARC is a business consulting firm engaged in Mergers and Aquisitions Advisory, Business Analytics and Research, Internationalization, and Growth Strategy. They have to their credit, over a decade of experience and expertise through their past associations with the Big 4, reputed MNCs, and a multi-faceted and skilled team. They offer customized and timebound solutions to complex business problems through research and analyticalinsights.

MARC assists its partners in discovering the power and importance of combining market research and data analytics to achieve significant efficiency improvements and achieve scale. It helps its clients to seize opportunities and make informed decisions for expansion and growth.

MARC has been a proven problem solver in mergers and acquisitions, market research, and business analytics for Investment Bankers, Investors, Management Consulting Firms, andSmall and Medium-sized businesses in various industries across the globe. MARC endeavorsto partner with their clients to help unlock their true potential and assist them in growing strategically and achieving unprecedented levels of success in their business.

Vision Statement

"We aim to create an ecosystem of financial awareness and sound fundamental business management knowledge, the resultant effect of which shall be an improved economy."

Mission Statement

"To partner with our clients, at all stages of business, to deliver excellence by helping to start wisely, grow strappingly, and achieve unprecedented levels of profitability."

Literature Review

Faridah Muhamad Halil et al. (2016) A feasibility study was studied in GBP (Green Building Projects). The advantages of planning financial feasibility study would help the client with the decision with considerable assurance knowing whether the project is viable or not. The research concluded that the overall Market and financial feasibility analysis provides clients with information on whether to proceed or abandon the project suggested for the development.If the clients opt to proceed with the project, the necessary improvements and modificationsthat might have surfaced during a feasibility study must be taken into account.

Anna Regína Björnsdóttir (2010) looked at how the usage of structured assessment models in the financial analysis of the viability of investment proposals. Also, the author provides a summary of the financial feasibility analysis, methodologies, and a generic evaluation model that can be utilized as a foundation when building new models. Case studies used to illustrate a geothermal cogeneration facility use a model to gauge the project's viability financially. Finally, The NPV (Net Present Value), and IRR (Internal Rate of Return), to analyze the viability of an investment idea financially. Then again, assessment models are used to determine the financial viability and should enable sensitivity analysis for the user, using simulation and scenario analysis to assess the risk with the investment undertaking.

Pranav B. Maske, Dr. Ajay K. (2021) Gaikwad Every building project needs to benefit the investors. Every building project involves some financial risk. Therefore, the feasibility study analysis provides information on the benefits and worth of investment. To decide whether an investment should be made or not, the viability of the project must be evaluated from a variety of angles. Internal rate of Return (IRR), benefit-cost analysis, and net present value (NPV) are frequently used metrics to determine if a project is feasible or not. Studying the project's financial viability is crucial for the effective implementation of a residential project. To determine whether a residential project in the Pimpri Chinchwad area is feasible, the purpose of this essay

M.B. Murkute et.al (2015) supports the decision-maker graphically. Last but not least, the goal of this effort is to create efficient interactive visualization techniques to aid those who use models for decision-making but need to investigate the sometimes-complex links between the values of model variables and the model output. Therefore, a feasibility assessment should be conducted before beginning. A residential project's sensitivity model can be implemented after being created.

Project 1 - Company XYZ

Introduction to the Project Topic

"Resort Feasibility Study and Projected Profitability Analaysis of Company XYZ "

Company XYZ, a client of Mangal Analytics and Research Consultancy (MARC), has a plot of approximately 24000 sq.mtrs in Nuvem, Goa by the highway that the client wants to develop into a commercial property. The client owns two renowned resorts, one in South Goa and the other in Kolkata, and mainly has expertise in resorts.

Research Questions

1. A feasibility study to evaluate and consider all of the essential factors determining the project.
2. To present forth a concept that will be best suited for the plot area.
3. Creation of a projected profitability analysis for the selected concept for determining if theproject will be financially viable.

Project Objectives

A. Overview of the plot location
   - Perception of Nuvem from the perspective of the local and tourism industry.
   - Population Demographics

B. Features and Challenges of the Plot
   - Surroundings of the plot.
   - Accessibility of plot.
   - Approach to the plot.
   - Challenges of plot/surroundings.

C. Competitive Analysis
   - Collection of industry supply-side data, including major competition review (residential and commercial offerings) in the vicinity.

D. Concepts Suggested
   - A suitable concept for the venture will be suggested based on the above findings.

E. Project Profitability
   - Creation of financial Assumptions (Estimating sales, Materials consumed, Depreciation rates, etc.)
   - Projected Profit and Loss Statement for calculation of project profitability.
   - Capital Budgeting for the Project.

Project Methodology

The project has been divided into two sections. They are namely, the feasibility study and the project profitability. The methodology for each of the sections is explained as follows.

A. Feasibility Study

For the feasibility study, to understand the feature and challenges of the plot, a site visit was conducted along with thorough market research about Nuvem to understand the locality and the vicinities of competitors and find shortcomings.

A Questionnaire was prepared and given to the locals, students, businesses, etc., around Nuvem to understand better the demand–supply gap that exists and how a business concept could be formulated around those ideas. Based on all the collected data, potential concepts were formulated. Secondary data has been sourced from the RERA website, Housing websites such as magic bricks, 99acres, and MARC's internal data sources.

B. Profitability Analysis

Based on the selected concept, market research along with industry averagesand a conservational approach on similar established commercial property to assume financialassumptions to provide a base for Projected profit and loss statements and Capital Budgeting for the project. Secondary data will be sourced from the Tofler website, the RERA website, CARE and CRISIL rating documents, and MARC's internal data sources.

Data Discussion and Analysis

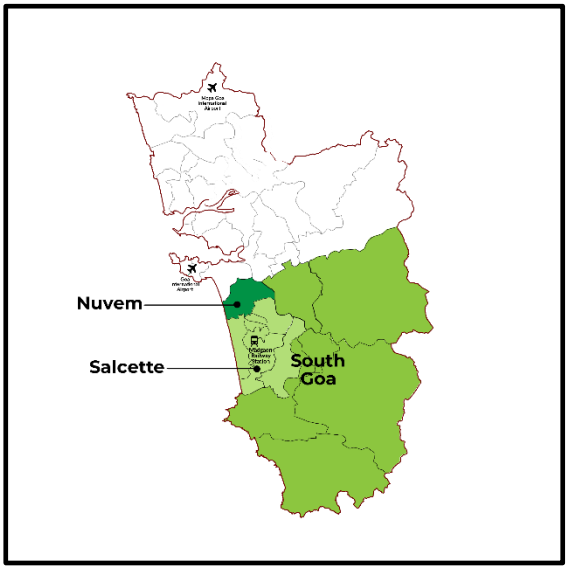
A. Feasibility Study

1.1. Locality Overview

Nuvem is a serene, untainted, and picturesque village across the National Highway 17 in the Salcete taluka of South Goa.

Its area is 14.5 km². Its neighboring villages include cities of Verna, Majorda, and Seraulim. The area is located 5 km from its most prominant town in the south Margão, 24 km from Vasco da Gama, and 29 km from the state capital Panaji.

The distance from Goa International Airport to Nuvem is 22.8 km, and the closest railway from Nuvem is Margao Railway Station which is 9.2 Km away, while Verna Industrial Estate is around 5 km from Nuvem



1.2. Population Demographics.

Nuvem Population Demographics	
Number of Households	3,050
Population	12,624
Male Population	6,048 (48%)
Female Population	6,576 (52%)
Children Population	3,738
Sex-ratio	1,087
Literacy	79.77%
Scheduled Tribes (ST) %	11.96%
Scheduled Caste (SC) %	1.51%

1.3.Locals Perspective

Some locals view Nuvem as a vibrant and culturally rich village known for its beautiful landscape, church, schools, colleges, historical significance, marble, granite, ceramics shopping, amusement park, and kayaking in backwaters. In contrast, others have a more negative perception due to traffic congestion, noise pollution, lack of adequate infrastructure, garbage dumping in the field, and water shortage.

1.4.Tourists Perspective

From the tourism point of view, the tourists appreciate the laid-back atmosphere of the village, as well as the traditional handicrafts and local cuisine that can be found in the area. Tourists also enjoy the beaches such as Betalbatim, Majorda, and Utorda Beaches

1.5.Site Analysis

The site is on a slope, with the compound facing the old highway towards the east. The site is directly accessible from the highway and is completely covered with wild grass and a few Mango and Jackfruit Trees. On the left is the granite and marble shop, while a vacant showroom on the right of the site is available on lease. The plot is on a slope as it is located at the foothill.

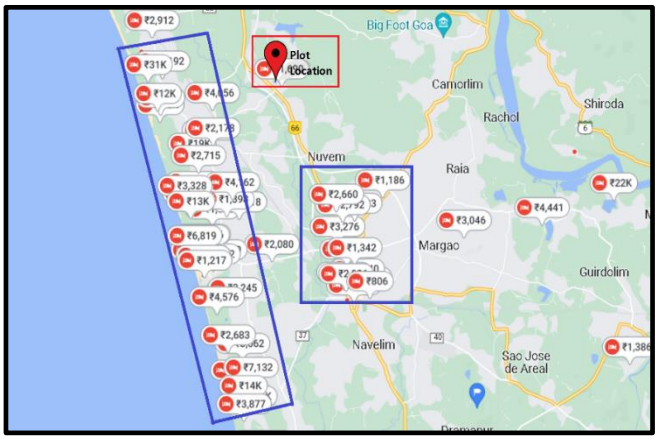
Tourists' spots around the location

Front facing from highway

Interior of plot

AROUND NUVEM	AREA
Arossim Beach	Arossim
Ashvek Vintage World Car Museum	Nuvem
Betalbatim Beach	Betalbatim
Colva Beach	Colva
Froggyland - The Water World	Arpora
Goa Kayaking Sal	Sal Backwaters
Mae dos Pobres Igreja	Nuvem
Majorda Beach	Majorda
Milsim Goa Paintball	Margao
PJN Stadium	Fatorda
Utorda Beach	Utorda

Hotels & Resorts



The cluster of hotels, resorts, and villas is located near the coastline of Velsao, Utorda, Majorda, Benaulim, and Colva, as these places are closer to the beach. Budget hotels are more around Margao city as many people would like to stay in the town close to the railway station. There are very few hotels around the site, which is a plus point as there would be less competition for a resort or hotel, and it would also be close to the highway.

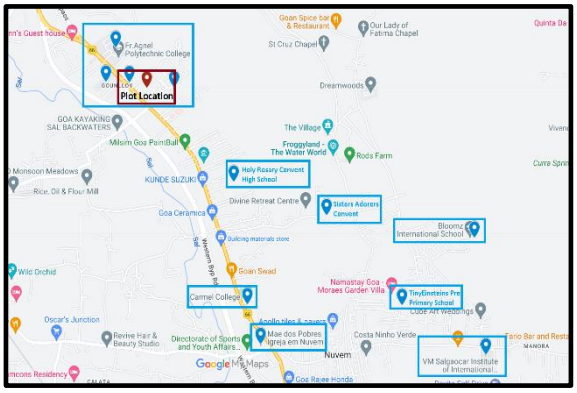
Restaurants around the site

A cluster of small eateries is present around the site as the location is conveniently accessible on the National Highway. But only a few small cafes and restaurants are around the site targeting college students and travelers using the highway.

Shops and Showrooms around the site

A cluster of showrooms is present around the site as the location is situated along the Margao-Panjim National Highway and is easily accessible, being an unmistakable landmark in South Goa. Nuvem also happens to be a hub for the granite market in Goa. Most building material shops are present here and are on lease. As the traffic is diverted to the new bypass, the exposure to the Market has reduced, but the footfall is still the same as mentioned by shop owners.

Schools & Colleges around the locality



A cluster of schools and colleges is present around the locality. About six schools and six colleges are present in a short space of 14.5 square kilometers. Additionally, there is an incubation center for startups called CIBA (Centre for Incubation and Business Acceleration) that helps startups lay their foundation. Students from around the locality and other villages and cities travel here for their education.

1.6.SWOT Analysis of the Plot

STRENGTH

- Building material availability.
- The site is located on a busy highway.
- There is a demand-supply gap in retail ventures.
- Commuters and students have good exposure to the site.
- The site is vast enough to accommodate different commercial ventures.

WEAKNESS

- The area does not have any tourist spots.
- Current rentals are high in the area as compared to the development.
- As the traffic is diverted, the vehicular movement is reduced, resulting in potentialcustomer loss.

OPPORTUNITIES

- Direct access to the highway.
- Locals are eager for development in the area.
- Upcoming projects in the area will increase footfall.
- The presence of schools and colleges around the site leads to good footfall.
- The site holds the potential for the working-class population close by from the Verna industrial estate.
- As the traffic is diverted to the bypass, the site has become a quiet location for residential projects.

THREATS

- The town's population is not high enough for the scale of the project.
- Future maintenance or highway closure could lead to traffic diversionon the bypass, resulting in even lesser footfall.
- New businesses can open around the bypass resulting in more competition and lesser footfall.

1.7.Competitors Analysis

Competitors of Hotels & Resorts

Hotel	Type	Category	Total Rooms	ARR in INR	Tourist Type	Footfall
Indismart Woodbourne	Resort	B	121	1300-3700/ night	Families and event guests	Depends on season but on average 40% occupied
Namastey-Goa Moraes Garden	Villa	D	1	3138–4839/ night	Domestic tourists-mainly	Fully Booked during weekends
OYO Waters Edge	Hotel	C	6	680-2500/ night	Domestic tourists mainly for leisure	High: Fully booked mostly
Treehouse Blue	Service Apartment	C	22	3000-4300/ night	Families	Low rooms available for weekend and weekdays
Meadow View	Resort	C	15	1500-4000/ night	All type of tourists	Medium: rooms are available in week days

There are only a few resorts and hotels around the locality. Most hotels are situated a little further towards the beaches. Most hotels and resorts near the site are away from prime locations and therefore suffer from low occupancy problems. Our site location lies right next to the highway, providing good connectivity and a foothill that offers an excellent laid-back environment. Hotels here are budget hotels whose USPs are cheap and reliant, like Indismart Woodbourne, which provides a banquet hall, hospitality management courses, and rooms for additional revenue.

Upcoming Housing projects

UPCOMING HOUSING PROJECTS	PROJECT AREA (SQ.MTR)	UNITS	AREA	FLATS	VILLAS
Aditya's Pride	2,510	16 Flats	71-121 sq meters	55,000-2 BHK	N/A
Aura - Micon Estate	3,542	42 Flats	38-83 sq meters	38,566 -1 BHK	N/A
Cornerstone Bliss	505	2 Villas	Villa 221 sq meters	N/A	37200 - 4 BHK
Dreamwoods	14,250	36 Villas	167 sq meters	58,454-4 BHK	59,281 - 3 BHK
IRMAO	11,585	7 Flats	83-102 sq meters	83,871- 2 BHK	N/A
Ista Serene	3,116	27 Flats - 2 and 3 BHK	170 sq meters	38,235-2 BHK	N/A
Sumit Bells Plot A	3,050	12 Villas	195 sq meters	N/A	51,286- 3 BHK

According to the RERA website, around seven upcoming residential properties are around the locality. Most of these are around the highway and range from 2-4 BHK. Most properties are around 2000 to 4000 Sq. Meters and only a few upcoming projects are greater than 10000+ Sq. Meters

1.8.Concepts Suggested

After interviewing locals and conducting a thorough research of the plot, the locality and the competition the following suggestions were given to the client.

Concept 1: Residential Project

Residential projects of constructing a villa or apartments with amenities such as a clubhouse, swimming pool, gym and spa, convenience store, and event hall are already upcoming in the locality and are in demand.

Concept 2: Mall

With the number of students present in the locality and the fact that there is no large-scale mall in South Goa, the idea of a mall was suggested. Students mostly needed a cinema hall, food courts, and arcades, so the following concept was suggested.

Concept 3: Resort

Since the client already knows about running two renowned resorts, a suggestion of a resort was given to the client. Amenities such as spa, wellness center, yoga center, banquet hall, restaurant, VIP suites etc. were suggested.

Concept chosen

The report of the market feasibility study was given to the client and was also presented to them. From our interaction of the project findings with the client, the client decided to proceed with option 3. Option 1 was rejected as it was a one-time revenue-generating option. Option 2 was discussed and was dismissed as the client felt that the mall could have issues running in the long term. Finally, Option 3 was selected as it was a business, they were familiar with. They had years of knowledge about the industry, and all other factors, such as highway connectivity, lack of good competitors, etc., gave option 3 the highest weightage.

B. Profitability Analysis

The subsequent project profitability analysis was conducted from the feasibility research.

Assumptions

The following Assumptions were taken towards the creation of Projected Profit and Loss.

Land

The land price has been calculated at 15,000 per Square Meter for 24,000 Square Meters.

Revenue Verticals

The occupancy in 1st year during season time is considered to be 60% during the season and 40% during the off-season and increases by 5% yearly.

- Percentage of guests expected to have in-house F&B services 70%
- Percentage of guests staying in rooms expected to visit spa/yoga 50%.
- Revenue from Travel Desk is considered at 2.5%.

Materials Consumed

- Material consumption or consumables consumed for providing rooms services is considered to be 10% of sales of rooms, 40% as cost of material consumed for F& B.
- Consumption is assumed at 20% of revenue from Rejuvenation (Spa).
- Yoga center, conference, and banquet consumables are expected to cost 4% of the sales from these services.

Heat, Light, and Power

- Electricity requirement per month is estimated to be two lakh units.
- Water consumption of 1lakh liters per day.

Expenses According to Industry Standards

Particulars	% to sales
Administration	9%
Advt. and selling expenses (For initial 6 years @8% of sales thereafter 4% of sales)	8%
Operations (travel, commissions, laundry, telephone, internet)	6%
Repairs and maintenance (with a percentage increase of 4% to sales till the 4th year, 8% to sales thereafter.)	4%
Employee Benefit Expense (with a 10% increment every year)	17%
Other Expenses (Misc. expenses)	3%

Depreciation Rates are as follows.

Building @10%, Electricals @15%, Furnishings @15%, Equipment @15%, Software@60%

1.1 Projected Profit & Loss

PROFIT AND LOSS										
Particulars	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Sales	326095120	370719417	421571072	479525278	545581002	603582203	668256376	727311308	813911896	886303054
Other Income	4861948	11026898	12504502	14180106	16080240	17670871	19429518	20983879	23373219	25243077
Total Income	**330957068**	**381746315**	**434075574**	**493705383**	**561661242**	**621253074**	**687685894**	**748295187**	**837285115**	**911546131**
Material Consumption	48323242	54893577	62370728	70881235	80569442	89142948	98697335	107412459	120063863	130722836
Heat, Light and Power	22016902	24440138	27141949	30155482	33517958	36925255	40692863	44598016	49329446	54080082
Operations	19857424	22904779	26044534	29622323	33699675	37275184	41261154	44897711	50237107	54692768
Employee Benefit Expense	49278600	54206460	59627106	65589817	72148798	79363678	87300046	96030050	105633056	116196361
Administration	29786136	34357168	39066802	44433485	50549512	55912777	61891730	67346567	75355660	82039152
Advt. and selling expenses	26476565	30539705	34726046	39496431	44932899	49700246	27507436	29931807	33491405	36461845
Repairs and maintenance	13238283	15269853	17363023	19748215	44657969	49396145	54678252	59497328	66572962	72477492
Other Expenses	8273927	9543658	10851889	12342635	14041531	15531327	17192147	18707380	20932128	22788653
Total Expense	**217251079**	**246155338**	**277192078**	**312269621**	**374117783**	**413247560**	**429220964**	**468421319**	**521615625**	**569459190**
EBITDA	**113705989**	**135590977**	**156883497**	**181435762**	**187543459**	**208005514**	**258464930**	**279873868**	**315669490**	**342086941**
Depreciation	60579186	52978892	46572484	41053995	39248941	34592300	30516269	26942436	23805146	24048373
EBIT	**53126803**	**82612085**	**110311012**	**140381767**	**148294518**	**173413214**	**227948661**	**252931433**	**291864344**	**318038567**
Financial Expense	35037696	29681615	24325534	18969453	13613372	8257291	2901211			
EBT	**18089106**	**52930469**	**85985478**	**121412314**	**134681146**	**165155922**	**225047450**	**252931433**	**291864344**	**318038567**
Net Profit	**18089106**	**52930469**	**85985478**	**121412314**	**134681146**	**165155922**	**225047450**	**252931433**	**291864344**	**318038567**
Provision for tax	5426732	15879141	25795643	36423694	40404344	49546777	67514235	75879430	87559303	95411570
PAT	**12662374**	**37051328**	**60189834**	**84988620**	**94276802**	**115609146**	**157533215**	**177052003**	**204305041**	**222626997**

1.2. Project Cost

From the calculations of assets shown in the annexure, the total amount required would be Rs.88,54,66,860.

Cost of Project	
Assets	**Amount**
Land	**360000000**
Building	**378316860**
Electronics	**44900000**
Furnishings	**86900000**
Equipments	**13850000**
Software	**1500000**
TOTAL	**885466860**

1.3. Cost of Capital

The client can source 25% of the project cost through their sources, while the remaining 75% has been obtained from a bank loan of 15%, for which details from the client have not been disclosed. Equity is assumed to be taken as the interest rate for a FD. The discounting factor obtained after that is 9.625% which is taken at 10%. DF=(Weight*(Interest(1-Tax)) + (Weight*Interest))

COST OF CAPITAL					
Capital components	**Amount**	**Weight**	**Cost of Capital**	**DF**	**DF Taken**
Loan	**664100145**	**0.75**	**0.15**	**0.09625**	**10%**
Equity	**221366715**	**0.25**	**0.07**		

1.4. Profitability Analysis

Particulars	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Outflow	(885,466,860)									
Inflow	73,241,560	90,030,221	106,762,319	126,042,615	133,525,743	150,201,446	188,049,485	203,994,438	228,110,187	246,675,370
Net cash flow	(812,225,299)	90,030,221	106,762,319	126,042,615	133,525,743	150,201,446	188,049,485	203,994,438	228,110,187	246,675,370
NPV	**53,522,250**									
IRR	11.50%									
Payback	(885,466,860)	(885,466,860)	(885,466,860)	(885,466,860)	(885,466,860)	(885,466,860)	(885,466,860)	(885,466,860)	(885,466,860)	(885,466,860)
Payback Years	**7.15 years**									
ROI	**1%**	**4%**	**7%**	**10%**	**11%**	**13%**	**18%**	**20%**	**23%**	**25%**
ROI Average	**13%**									

Net Present Value

NPV (Net Present Value) is the difference between the present value of cash inflows and the present value of cash outflows over a period of time. The NPV for the project is 5,35,22,250 which means that the cash inflows are more than the cash outflows. Therefore, since the project NPV is positive the project should be pursued.

Internal Rate of Return

IRR is the rate at which the present value of cash inflows equals the present value of cash outflows. The IRR for the project stands at 11.5%. The discounted cashflows will match the initial investment when NPV is 0 at 11.5%.

Payback Period

The payback period is the time it takes to earn back the money invested through the cash generated by the investment. The Payback period for the project is 7.15 years. It means that the initial investment that was invested will be recovered in 7.15 years.

Return on Investment

ROI is a ratio used to evaluate the financial performance of an investment by comparing the investment gains to the investment costs. ROI for the project has increased from 4% to 25% from Year 1 to Year 10. The average ROI for the project stands at 13%, which indicates that one can expect 13% of Return every year from the initial investment.

1.5. Scenario Analysis

Scenario analysis is a method that involves examining the effects of multiple hypothetical scenarios on a specific investment or project to evaluate its potential performance under different conditions.

Scenario 1: Sales increased by 4%

In scenario 1 we assume that the sales have increased by 4% than the original estimation while all other values remain constant. Favorable economic conditions, product quality, increase in demand, etc. can lead to increased sales.

Scenario 1: If sales were to increase by 4%										
Particulars	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**	**Year 7**	**Year 8**	**Year 9**	**Year 10**
Outflow	(868,205,280)									
Inflow	80,062,497	97,782,359	115,470,880	135,847,051	143,964,853	161,661,785	201,425,338	218,528,357	244,426,754	264,481,160
Net cash flow	(788,142,783)	97,782,359	115,470,880	135,847,051	143,964,853	161,661,785	201,425,338	218,528,357	244,426,754	264,481,160
NPV	**135,441,361**									
IRR	**13.67%**									
Payback	(788,142,783)	(690,360,424)	(574,889,545)	(439,042,494)	(295,077,641)	(133,415,856)	68,009,482	286,537,838	530,964,593	795,445,753
Payback Years	**6.66 Years**									
ROI	**2%**	**5%**	**8%**	**11%**	**12%**	**15%**	**20%**	**22%**	**25%**	**28%**
ROI Average	**15%**									

Scenario 2: Expenses increased by 4%

In scenario 2 we assume that the Expenses have increased by 4% than the original project estimation while all other values remain the same. Unfavorable economic conditions, Rising material costs, etc. can lead to an increase in expenses.

Scenario 2: If Expenses were to increase by 4%										
Particulars	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**	**Year 7**	**Year 8**	**Year 9**	**Year 10**
Outflow	- 868,205,280									
Inflow	67,446,374	83,354,337	99,140,850	117,357,757	123,023,725	138,514,607	175,822,806	190,630,957	213,282,033	230,529,888
Net cash flow	- 800,758,906	83,354,337	99,140,850	117,357,757	123,023,725	138,514,607	175,822,806	190,630,957	213,282,033	230,529,888
NPV	**8,631,395**									
IRR	**10.25%**									
Payback	- 800,758,906	- 717,404,569	- 618,263,719	- 500,905,962	- 377,882,238	- 239,367,631	- 63,544,825	127,086,131	340,368,164	570,898,053
Payback Years	**7.3 years**									
ROI	**1%**	**4%**	**6%**	**9%**	**10%**	**12%**	**17%**	**19%**	**22%**	**24%**
ROI Average	**12%**									

Comparison of Original Estimation with Scenario 1 and Scenario 2

Scenario Analysis Comparision			
Key Indicators	**Original Project Estimation**	**Scenario 1**	**Scenario 2**
NPV	53,522,250	135,441,361	8631395
IRR	12%	14%	10%
Payback Years	7.15 years	6.66 Years	7.3 years
ROI Average	13%	15%	12%

From the above table,

- The NPV for Scenario 1 is the highest at 135,441,361 as the PAT has been higher since sales have increased, and vice versa for Scenario 3 where expenses have decreased and has the lowest NPV of 8,631,395.

- The IRR has jumped from 2% when sales have been increased by 4%, while on the other hand, IRR has fallen by 2% in Scenario 3.

- The rate at which the payback period has changed for Scenario 1 is higher than that of Scenario 3 compared to the original project estimations. Scenario 1 will earn back its investment 0.49 years earlier than the original, while Scenario 3 will return its initial investment by 0.15 years more.

- The average ROI over the years has increased by 2% for Scenario 1, while it has fallen by 1% for Scenario 2.

- The following conclusions can be drawn for this project for Scenario Analysis.

- A change in sales has a higher percentage of a difference than expenses.

- NPV, IRR, and ROI have a strong positive correlation with each other for the project at 99% for all combinations. At the same time, Payback versus NPV or IRR, or ROI, has a strong negative correlation for the task at -99% for the same.

- The client must look into different ways to increase sales as it will boost the project's performance by a good margin.

Findings

The current findings on the project are,

- The site and its neighborhood are a hotspot for upcoming and fully-developed projects.
- The demand forthe residential Market is high in and around this area.
- Opportunity in the form of a high number of colleges and schools in the area.
- The working class in Nuvem suggested a need for residential villas and eco-resorts.
- The people in Nuvem also prefer a cinema hall and play arcade.
- There is a hub for the granite market in Nuvem
- The feasible options would be a mall, resort, or apartment.
- The option of a resort would be feasible.
- Scenario analysis of the project suggests even in the worst-case scenario; the project is profitable but with lower returns.
- In any scenario, it would take the client almost 6-7 years to earn back the amount they initially invested.
- The Return on Investment would be between 12% to 15% of the project life in any scenario.
- If Sales were to boost, the Return on investment would significantly jump to give better returns.
- The client must pursue the idea of a resort based on the project's profitability.

Conclusion

Upon evaluating the plot space owned by Kenilworth in Nuvem, it was determined that constructing a resort is the most appropriate option. This decision was made based on several factors, such as the calm and relaxed environment in the area, the low level of competition in the vicinity, and the presence of attractive tourist destinations nearby. Additionally, the financial analysis of the project reveals that it is both financially viable and feasible, with a positive net present value (NPV) of 5,35,22,250 and an internal rate of return (IRR) of 11.50 % approximately 12% that meets expectations. As a result, it is recommended that the client proceed with the plan to develop a resort on the land in Nuvem.

To elaborate further, the assessment took into account various aspects such as the target market and operating costs associated with each of the three options (i.e., mall, resort, and apartment). The study found that building a resort aligns best with the location and its surroundings, as it would attract visitors seeking a relaxing and rejuvenating vacation experience.

All these factors indicate that investing in a resort in Nuvem is a prudent financial decision that is likely to yield positive returns and create value for the client. Therefore, it is recommended that the client should pursue the development of a resort on the plot space in Nuvem.

Project 2 - Company ABC -Pyrolysis plant

Introduction to the Project Topic

"Waste Tire Pyrolysis Plant Feasibility Study of Company ABC"

Company ABC plans to start a Waste Tire Pyrolysis plant in Karaswada, Goa. The client already possesses a 10-ton plastic pyrolysis plant. The plastic pyrolysis plant has been running successfully, and they see an opportunity with waste tire pyrolysis; therefore, they want to know whether the company should venture into waste tire pyrolysis.

Research Questions

- There will be enough supply of 10-Ton tires daily for pyrolysis in Goa.
- There is enough supply and demand for the byproducts.
- The project will be financially viable.

Project Objectives

- To understand the tire pyrolysis industry
- To study the availability of raw materials (scrap tires) in the local Market
- To suggest the feasibility of the project venture in Goa

Project Methodology

For the feasibility study, primary research, as well as secondary research, has been conducted. Primary research includes telephone surveys and site visits to scrap yards to determine if a supply of 10 tons of waste tires will be available. Secondary research has been done to determine the prices of the by-products and the cost of procuring the required machinery. Websites such as India Mart and Justdial have been used to find out the prices of by-products. For the computation of profitability analysis, Net Present Value, Internal Rate of Return, and Return on Investment have been calculated.

Data Discussion and Analysis

1.1 Industry Overview

Pyrolysis

Pyrolysis is subjecting substances to highly elevated temperatures in a relatively inert atmosphere to facilitate their thermal decomposition, wherein the following by-products are obtained.

By-Products	Composition	Uses	Price
Bead Wire	10%-20%	Generally used in Tires for reinforcement but, recycled bead wire is sold to furnaces to recycle the steel into new products.	14-17 Rs
Carbon Black	50%- 60%	Rubber industry - surgical gloves, motor vehicle tires, cables and shoe soles. Paint Industry- Toners, Paints Road Construction - Asphalt	1-4 Rs
Pyrolysis Oil	32%-38%	Used in heavy industries like cement plants, glass factories, ceramic factories, brick factories for running heavy burners. Can be refined and converted to Diesel.	40-45 Rs

Global Market Size of the by-products

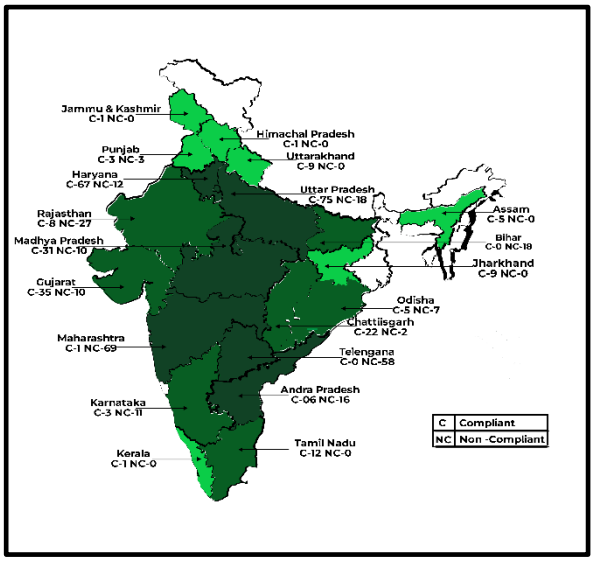
By-Products	Market Size in 2023	CAGR	Market Size in 2031
Bead Wire	5,00,000 Cr	5.80%	7,85,000 Cr
Carbon Black	1,00,000 Cr	4.60%	1,43,000 Cr
Pyrolysis Oil	3,465 Cr	4.30%	4,809 Cr

Challenges of the industry

Some of the pyrolysis plants in India do not comply with the SOPs of the Ministry of Environment and Forest of India, so pyrolysis plants that do comply suffer from a bad reputation. The tire recyclers who are unregistered with governing bodies and illegally running their units are posing a threat to the environment and creating a threat to legal recycling units in terms of raw material availability.

1.2. Competitor Study

There are no tire pyrolysis plants in Goa. All scrap tires collected by scrap yards are sold to neighboring states such as Karnataka, Maharashtra, and Gujarat. Out of 757 tire waste pyrolysis units in India, 349 units comply with the consent and SOPs of the Ministry of Environment and Forest, and 216 units are non-compliant. The units had closed down due to non-compliance with the SOPs of the Ministry of Environment and Forest. Maharashtra alone has around 70 tire pyrolysis plants, while Karnataka has about 14.

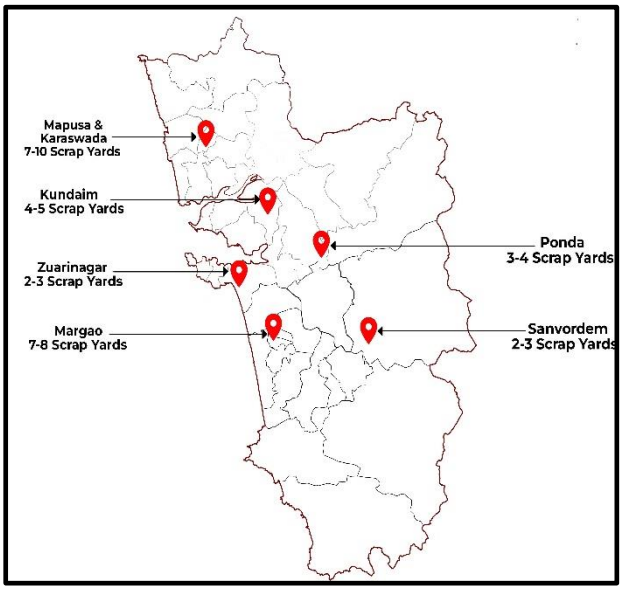


1.3. Availability of raw material

Our primary research was conducted through telephonic surveys and site visits. The following information was found.

Availability of 10 tons of scrap tires daily for the following reason

- Not one single scrap yard in Goa can supply 10 tons of waste tires daily
- Most scrap yards do not sell waste tires as Goa does not have local demand, and storage cost, transportation cost, and handling cost burden falls on the scrap yards
- Scrap yards form part of an unorganized sector which in itself possesses problems



Therefore, to receive a supply of 10 tons of scraps, individual scrap yards will have to supply tires to the plant daily to get 10 tons of waste tires. Information for this is present in the table below.

Supplier	Location	Scrap Type	Price	Per day/ month
A Scrap Dealer	South Goa	Rubber	14-15 Rs/Kg	5-6kg /week
B Scrap Dealer	North Goa	Rubber	14-25 Rs/Kg	2.5 tons/1-2 month
C Scrap Dealer	South Goa	Rubber	16-17 Rs/ Kg	1-1.5 tons /month
D Scrap Dealer	South Goa	Rubber/ Steel	15-16 Rs/ Kg	700-900 kg/week
E Scrap Dealer	North Goa	Rubber/ Steel	16500/ton	1 Month / 2 tons
F Scrap Dealer	North Goa	Rubber/ Steel	16 Rs	3-4 days/ 10 tons
G Scrap Dealer	North Goa	Rubber	14-19 Rs/Kg	5 tons/ week

1.4. Demand & Supply Study

Carbon Black

- Goa does not have local manufacturers of carbon black as there is no pyrolysis plant in Goa.
- The tires are sold out of Goa in states like Karnataka, Maharashtra, and Gujarat since there is no local demand for them.
- As there is no supply of carbon black in Goa, companies buy carbon black from neighboring states.
- There are around 24 suppliers of Carbon black from neighboring states.
- Carbon black is sold in various varieties, and the average price per kilo lies around 70 INR/Kg.
- N330 is the most common variant of carbon black used in Goa and India.
- According to our research, locally produced carbon black is in high demand by local buyers as it saves transportation costs, and its lead time will be reduced.

Steel Wires (Bead Wires)

- Recycled bead wire suppliers in Goa are scattered and unorganized, as many scrap yards sell bead wire from tires. Scrap tires contain 10-20% of steel wires of which:
- Scrap dealers sell their product to a more extensive distributor, who then sell their steel wires further.
- Scrap dealers sell burnt wires as they earn a higher price than wires with rubber waste attached to them.
- Steel wire that is burned is preferred more by the buyers as no rubber residue is left behind.
- It is sold to furnaces and smelting factories that sell it to companies and local steel mills.

Pyrolysis Oil

- There are no local manufacturers of pyrolysis oil in Goa.
- Pyrolysis oil consists of 32% to 38% of a tire
- There are around 5 suppliers of the oil for approximately 45 Rs per liter.
- Pyrolysis oil is used by industries in Goa to power heavy burners.
- It is also sold to distillers to convert into other valuable oils.

1.5. Project Profitability Analysis

The venture into waste tire pyrolysis will only be profitable if the NPV, (net present value), is positive. First, the cost of the machine is required

A. Project cost

Cost of Machine	
Particulars	Amount
Pyrolysis Plant	4,500,000
Installation	250,000
Transportation	100,000
Total	**4,850,000**

The cost of the machine is 45 Lakhs and will be transported from Gujarat for a which a transportation cost of 1 lakh is estimated. Installation charges of 2.5 lakhs have been added to the price of the machinery. The machinery is estimated to have a useful life of 6 years.

B. Cashflow calculation

Cashflow Calculation						
Particulars	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6
Sales	70992500	74542125	78269231	82182693	86291827	90606419
Less: Expenses	65529000	69460740	73628384	78046087	82728853	87692584
PBDT	5463500	5081385	4640847	4136605	3562975	2913835
Less: Depreciation	808333	808333	808333	808333	808333	808333
PBT	4655167	4273052	3832514	3328272	2754641	2105502
TAX @ 30%	1396550	1281916	1149754	998482	826392	631650
PAT	3258617	2991136	2682759	2329790	1928249	1473851
Add:Depreciation	808333	808333	808333	808333	808333	808333
CF	**4066950**	**3799470**	**3491093**	**3138124**	**2736582**	**2282184**

***Sales growth has been taken as 5%.*
Expenses have grown at 6% every year, imitating consumer inflation rates.
Depreciation = Straight Line Method

C. Sales calculation

Sales Computation Per Day				
By-Products	Quantity Produced	Price Sold	Daily Sales	Yearly Sales
Steel Wire	1500	15	22,500	8,212,500
Carbon Black	3000	4	12,000	4,380,000
Pyrolysis Oil	4000	40	160,000	58,400,000
			194,500	**70,992,500**

From tire pyrolysis of 10 tons, they can produce a total of 8.5 tons of by-product daily.

D. Expense calculation

Computation of Costs				
Particulars	Quantity	Cost	Daily Cost	Yearly Cost
Tire	10,000	16	160,000	58,400,000
Electricity		20,000		240000
Transportation Cost			16,500	6,022,500
Wages	3	700	2,100	766,500
Maintainance Cost				100,000
				65,529,000

Transportation Cost			
Destination	Amount	No. of Suppliers	Total
North Goa	1500	4	6000
South Goa	3500	3	10,500
			16,500

After interviewing and surveying scrap yards for prices of tires, the average cost of procuring tires is taken to be 16 Rs/ Kg. Electricity consumption per month is estimated to be 20000 Rs for powering the reactor of the plant. Wages of Semi-skilled workers are taken as 700 per person for 3 workers daily. The manufacturer of the plant has provided a yearly maintenance cost of 1 Lakh for their services.

E. Cost of capital

COST OF CAPITAL					
Machine	Capital components	Amount	Weight	Cost of Capital	DF Taken
Waste tire pyrolysis plan	Equity	4850000	1	5.50%	6%

F. Discounted cashflows & key ratios

Waste Tyre Pyrolysis Plant			
Year	CF	DF @ 6%	PV
0	(4,850,000)		
1	4,066,950	0.9434	3,836,761
2	3,799,470	0.89	3,381,528
3	3,491,093	0.8396	2,931,122
4	3,138,124	0.7921	2,485,708
5	2,736,582	0.7473	2,045,048
6	2,282,184	0.705	1,608,940
		TOTAL	**16,289,106**

Key Ratios	
NPV	11,759,106
IRR	73%
ROI	50%

Net Present Value

NPV, or Net Present Value, is a financial measure that is used to assess the profitability of a particular investment or project by calculating the present value of expected future cash flows. After discounting the cashflows and taking a total of the current values, the NPV is much greater than the project cost (Outflows) and is positive; therefore, we accept the project. NPV = 16289106-4850000 = 11759106.

Internal Rate of Return

IRR stands for Internal Rate of Return. IRR is the rate at which the present values of the future cash flows are equal to the present value of the initial investment. A high rate of IRR indicates the project is worth pursuing and vice versa. The IRR rate for this project stands at 73%, which is very high, and therefore this project financially is worth pursuing by the client.

Return On Investment

Investors and businesses commonly use ROI as a measure to determine the effectiveness of an investment or project. The higher the ROI percentage, the more profitable the investment or project is perceived to be. Conversely, if the ROI percentage is low, it indicates that the investment is not generating enough returns to justify the initial cost. Therefore, ROI is a valuable tool in evaluating an investment's performance and determining whether to continue with the investment or not. ROI for this project stands at 50%, which indicates that the project will produce enough returns over the initial cost.

Findings

- The by-products have enough demand in the market.
- Goa has no competitor in Tire pyrolysis plants.
- There is enough supply of scrap tires in Goa and the average price offered is around 16 Rs a Kg
- The profitability analysis suggests the venture of starting a pyrolysis plant in Goa.

Conclusion

Tire pyrolysis presents a significant opportunity for exploration in Goa, particularly due to the limited presence of such plants in the region. The abundance of waste tires in landfills, coupled with the potential to extract valuable by-products such as carbon black, steel wire, and pyrolysis oil, make this an attractive venture.

The market demand for tire pyrolysis in Goa is promising, with suppliers in the region eager to sell their waste tires locally and save on transportation costs. Additionally, the potential for converting waste tires to rubber granules can also be used in synthetic turf further expands the market potential of this endeavor incase the granules were not used for tire pyrolysis.

Detailed analysis of the project has revealed that it is financially viable, with a projected IRR of 73% and an ROI of 50%. The availability of sufficient raw materials, coupled with the strong market demand for the by-products, positions the project for profitability.

In light of these factors, it is evident that a tire pyrolysis plant for client ABC would be a feasible

and lucrative pursuit for the client. The diverse applications of the by-products, coupled with the strong market supply and profitability projections, make this an attractive opportunity for investment

Contributions

Client CDE's, Crop report for a district in Tamil Nadu.

- Found potential for the current crops in the district
- Conducted the research to find the potential for other agricultural crops in the district
- Suggestions on Value added products for the crops
- Suggested a market for the crop, whether domestic or export

Client XYZ's Feasibility Study of Plot

- Visited the site for analysis and study of Nuvem.
- Creation of a Questionnaire circulated to locals to understand the demand and supply gap.
- Analyzed respondents' data.
- Collected data from CARE and CRISIL ratings of resorts to extract financials.
- Collected data from websites for market study.
- Contributed towards the creation of 3 possible concepts of commercial property for the plot.
- Contributed towards creation of all financial statements related to the project
- Helped in creating financials from the assumptions
- Analysis of financial data.

Client ABC's Feasibility Study of establishing a pyrolysis plant

- Site visit to few Scrap Yards and telephonic questionnaires for collecting data.
- Analyzed data to provide conclusions
- Market research for the project as secondary data for prices, quantity etc.
- Created financial data for the same
- Analyzed the financial statements.

Recommendations

My recommendations to client XYZ would be to pursue the project as it is feasible and also to tap the potential of the number of students in the village as there are a lot of schools and colleges around who could use a quick service restaurant as a place to hangout which could have a huge potential. To client ABC my recommendation would be to pursue the tire pyrolysis plant as it could unify scrap yards and solve their problems related to selling of waste scrap tires. Being the only tire pyrolysis plant in Goa and providing local supply of the byproduct would bring in a lot of demand for his products and his pyrolysis plant would also work well.

Learnings

My learnings interning at Mangal Analytics and Research Consultancy has been as follows:

- Acquired knowledge on market study methodologies and data analysis techniques to extract valuable insights.
- Gained proficiency in conducting project feasibility and financial analysis to ensure the viability of projects.
- Had the opportunity to attend client meetings and learn best practices for delivering effective presentations to clients.
- Benefitted from exposure to a diverse range of industries through the varied projects offered by MARC, thereby expanding my knowledge and experience.
- Developed an understanding of floor area ratio and its calculation for different locations and construction types.

Annexures

Room Occupancy Calculations

ROOM OCCUPANCY BASE CALCULATIONS											
Type of room	Price of Room	No. of rooms	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Peak-Season												
Guest rooms	7000	60	49000	52920	57153.6	61725.888	66663.95904	71997.07576	77756.84182	83977.38917	90695.5803	97951.23
Guest rooms	7000	60	49000	52920	57153.6	61725.888	66663.95904	71997.07576	77756.84182	83977.38917	90695.5803	97951.23
Suites	16000	10	112000	120960	130636.8	141087.744	152374.7635	164564.7446	177729.9242	191948.3181	207304.1836	223888.5
VIP suites	18500	6	129500	139860	151048.8	163132.704	176183.3203	190277.9859	205500.2248	221940.2428	239695.4622	258871.1
2 Private VIP suites	23000	2	161000	173880	187790.4	202813.632	219038.7226	236561.8204	255486.766	275925.7073	297999.7639	321839.7
Off- season												
Package sales	4900	60	34300	37044	40007.52	43208.1216	46664.77133	50397.95303	54429.78928	58784.17242	63486.90621	68565.86
Guest rooms	4900	60	34300	37044	40007.52	43208.1216	46664.77133	50397.95303	54429.78928	58784.17242	63486.90621	68565.86
Suites	11200	10	78400	84672	91445.76	98761.4208	106662.3345	115195.3212	124410.9469	134363.8227	145112.9285	156722
VIP suites	12950	6	90650	97902	105734.16	114192.8928	123328.3242	133194.5902	143850.1574	155358.17	167786.8236	181209.8
2 Private VIP suites	16100	2	112700	121716	131453.28	141969.5424	153327.1058	165593.2743	178840.7362	193147.9951	208599.8347	225287.8

F&B Calculations

F & B BASE CALCULATIONS										
Particulars	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
% of guests expected to have inhouse F and B services	70%	70%	70%	70%	70%	70%	70%	70%	70%	70%
Spending on F & B	1000	1080	1166.4	1259.712	1360.48896	1469.328077	1586.874323	1713.824269	1850.93021	1999.004627
No.of persons staying in a room	2	2	2	2	2	2	2	2	2	2
No. of functions per year	36	36	36	36	36	36	36	36	36	36
No.of guests attending per function	400	400	400	400	400	400	400	400	400	400
% of guests staying at rooms and are already accounted f	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%

SPA Calculations

Rejuvenation (Spa) / Yoga BASE CALCULATIONS										
Particulars	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
% of guests staying in rooms expected to visit spa/yoga	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%
Charges for spa services	2500	2750	3025	3327.5	3660.25	4026.275	4428.9025	4871.79275	5358.972025	5894.869228
No.of persons staying in a room	2	2	2	2	2	2	2	2	2	2
Guests visiting spa/ yoga per day	15	15.75	16.5375	17.364375	18.23259375	19.14422344	20.10143461	21.10650634	22.16183166	23.26992324
Charges for Yoga services	300	330	363	399.3	439.23	483.153	531.4683	584.61513	643.076643	707.3843073

Sales Calculation

SALES CALCULATION											
Particulars	Season Type	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Guest Rooms	Season	80480400	91264774	103494253	117362483	133089056	143736180	155235075	167653881	190119501	205329061
	Off- season	37557520	42590228	48297318	54769159	62108226	70430728	79868446	86257922	93158555	100611240
	TOTAL	**118037920**	**133855001**	**151791571**	**172131642**	**195197282**	**214166909**	**235103521**	**253911803**	**283278056**	**305940301**
Guest rooms	Season	45864000	52009776	58979086	66882284	75844509	81912070	88465036	95542239	108344899	117012491
	Off- season	30576000	34673184	39319391	44588189	50563006	57338449	65021801	70223545	75841429	81908743
	TOTAL	**76440000**	**86682960**	**98298477**	**111470473**	**126407516**	**139250519**	**153486837**	**165765784**	**184186328**	**198921234**
F & B sales	Sales from guest rooms	35162400	39874162	45217299	51276417	58147457	64055239	70603945	76252261	84725711	91503768
	Sales from banquet and conferenc	7200000	7776000	8398080	9069926	9795521	10579162	11425495	12339535	13326698	14392833
	TOTAL	**42362400**	**47650162**	**53615379**	**60346344**	**67942978**	**74634401**	**82029440**	**88591795**	**98052408**	**105896601**
Revenue from Travel Desk and others	Season	3158610	7163727	8123667	9212238	10446678	11282413	12185006	13159806	14923220	16117078
	Off- season	1703338	3863171	4380835	4967867	5633562	6388459	7244512	7824073	8449999	9125999
	TOTAL	**4861948**	**11026898**	**12504502**	**14180106**	**16080240**	**17670871**	**19429518**	**20983879**	**23373219**	**25243077**
Rejuvenation (Spa)	Guest rooms	62790000	72522450	83763430	96746761	111742509	125375096	140751982	154827180	175217965	192739761
	Outsiders	13687500	15809063	18259467	21089685	24358586	28134167	32494962	37531681	43349092	50068201
	TOTAL	**76477500**	**88331513**	**102022897**	**117836446**	**136101095**	**153509262**	**173246945**	**192358862**	**218567057**	**242807963**
Yoga centre	Guest rooms	7534800	8702694	10051612	11609611	13409101	15045011	16890238	18579262	21026156	23128771
	Outsiders	1642500	1897088	2191136	2530762	2923030	3376100	3899395	4503802	5201891	6008184
	TOTAL	**9177300**	**10599782**	**12242748**	**14140374**	**16332131**	**18421111**	**20789633**	**23083063**	**26228047**	**29136956**
Banquet halls	**TOTAL**	3600000	3600000	3600000	3600000	3600000	3600000	3600000	3600000	3600000	3600000
Total		**326095120**	**370719417**	**421571072**	**479525278**	**545581002**	**603582203**	**668256376**	**727311308**	**813911896**	**886303054**
Revenue from Travel Desk and other ancilliary income		**4861948**	**11026898**	**12504502**	**14180106**	**16080240**	**17670871**	**19429518**	**20983879**	**23373219**	**25243077**

Material Consumption

Material Consumption										
Particulars	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Guest rooms	11803792	13385500.13	15179157.15	17213164.2	19519728.21	21416690.88	23510352.09	25391180.25	28327805.63	30594030.08
Guest rooms	7644000	8668296	9829847.664	11147047.25	12640751.58	13925051.94	15348683.72	16576578.42	18418632.79	19892123.41
F & B sales	16944960	19060064.64	21446151.7	24138537.5	27177191.12	29853760.44	32811776.1	35436718.19	39220963.33	42358640.4
Rejuvenation (Spa	11471625	13249726.88	15303434.54	17675466.89	20415164.26	23026389.3	25987041.68	28853829.29	32785058.52	36421194.39
Yoga centre	458865	529989.075	612137.3816	707018.6758	816606.5705	921055.5721	1039481.667	1154153.172	1311402.341	1456847.775
TOTAL	48323242	54893576.72	62370728.43	70881234.53	80569441.74	89142948.14	98697335.26	107412459.3	120063862.6	130722836

Heat, Light and Power:

Heat,Light and Power										
Particulars	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Electricity (units)	2400000	2520000	2646000	2778300	2917215	3063075.75	3216229.538	3377041.014	3545893.065	3723187.718
per unit cost	6	6.3	6.615	6.94575	7.2930375	7.657689375	8.040573844	8.442602536	8.864732663	9.307969296
Electricity cost	14400000	15876000	17503290	19297377	21275358	23456083	25860331	28511015	31433394	34655317
Water	########	1,149,750	1,207,238	1,267,599	1,330,979	1,397,528	1,467,405	1,540,775	1,617,814	1,698,704
Other energies	########	7,414,388	8,431,421	9,590,506	10,911,620	12,071,644	13,365,128	14,546,226	16,278,238	17,726,061
TOTAL	22016902	24440138	27141949	30155482	33517958	36925255	40692863	44598016	49329446	54080082

Employee Cost:

Employee Cost			
Particular	No. employees	Monthly	Annual
General manager	1	85,000	1,020,000
Departmental head	8	55,000	5,280,000
F & B controllers	2	25,000	600,000
Chef	4	35,000	1,680,000
Kitchen support staff	15	10,000	1,800,000
Restaurant staff	15	11,000	1,980,000
Assistant manager	6	22,000	1,584,000
Accountants	4	18,000	864,000
acounts assistant	4	10,000	480,000
purchase officer	2	15,000	360,000
Purchase assistant	4	10,000	480,000
Stores assistant	4	12,000	576,000
Fitness instructer	5	9,000	540,000
Aurvedic doctor	4	25,000	1,200,000
Yoga instructor	6	13,000	936,000
Spa staff	30	13,000	4,680,000
Front office	10	11,000	1,320,000
Ayurvedic professionals	12	15,000	2,160,000
security	30	12,000	4,320,000
House keeping	50	9,000	5,400,000
HR associates	2	13,000	312,000
IT	4	12,000	576,000
Sales and marketing	5	15,000	900,000
Room boys	30	9,000	3,240,000
Garden mainteinance staff	10	9,000	1,080,000
F& B	33	9,000	3,564,000
Total	**300**	**482,000**	**46,932,000**
Other employee welfare fund			2,346,600
Grand Total			**49,278,600**

Asset Value Calculation:

Asset Value Calculation									
Assets	Rs/sq mtrs			Sq mtrs	Value				
	Construction	Electronics	Furnishings	Sq mtrs	Construction	Electronics	Furnishings	Equipments	Others
Reception/Lobby + restrooms	20000	2000	9000	300	6000000	600000	2700000		
120 guest rooms	22000	4000	6000	5000	110000000	20000000	30000000		
10 suites	27500	6000	7000	900	24750000	5400000	6300000		
6 VIP suites	33000	7000	9000	900	29700000	6300000	8100000		
Spa	25000		9000	1500	37500000		13500000	8000000	
Swimming pool	8000			200	1600000				
2 Private VIP spa suites	37500	8000	10000	250	9375000	2000000	2500000		
Health club	20000		5000	300	6000000		1500000	2000000	
Yoga centre	20000		5000	300	6000000		1500000	1000000	
Lounge bar	26000	3000	9000	300	7800000	900000	2700000	200000	
Restaurant	20000	3000	9000	500	10000000	1500000	4500000	2500000	
Snack bar	25000	3000	9000	200	5000000	600000	1800000		
Spa Retail Boutique	25000	3000	9000	100	2500000	300000	900000		
Business Centre + Library	20000	3000	5000	200	4000000	600000	1000000	100000	
Meeting/Conference rooms	20000	3000	5000	300	6000000	900000	1500000	50000	
Banquet halls	25000	3000	4000	600	15000000	1800000	2400000		
Back of house	20000	2000	3000	2000	40000000	4000000	6000000		
TOTAL				**13850**	**321225000**	**44900000**	**86900000**	**13850000**	
Software									1500000
Garden	2000			2500	5000000				
parking	500			1500	750000				
TOTAL				**17850**	**378316860**	**44900000**	**86900000**	**13850000**	**1500000**

Assets:

Assets										
Particulars	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Land	360000000	360000000	360000000	360000000	360000000	360000000	360000000	360000000	360000000	360000000
Building	37,83,16,860	37,83,16,860	37,83,16,860	37,83,16,860	37,83,16,860	37,83,16,860	37,83,16,860	37,83,16,860	37,83,16,860	37,83,16,860
Electronics	4,49,00,000	4,49,00,000	4,49,00,000	4,49,00,000	4,49,00,000	4,49,00,000	4,49,00,000	4,49,00,000	4,49,00,000	4,49,00,000
Furnishings	8,69,00,000	8,69,00,000	8,69,00,000	8,69,00,000	8,69,00,000	8,69,00,000	8,69,00,000	8,69,00,000	8,69,00,000	8,69,00,000
Equipments	1,38,50,000	1,38,50,000	1,38,50,000	1,38,50,000	1,38,50,000	1,38,50,000	1,38,50,000	1,38,50,000	1,38,50,000	1,38,50,000
Software	15,00,000	15,00,000	15,00,000	15,00,000	15,00,000	15,00,000	15,00,000	15,00,000	15,00,000	15,00,000
TOTALS	**88,54,66,860**	**88,54,66,860**	**88,54,66,860**	**88,54,66,860**	**88,54,66,860**	**88,54,66,860**	**88,54,66,860**	**88,54,66,860**	**88,54,66,860**	**88,54,66,860**

Depreciation:

Depreciation										
Particulars	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Building (10%)	37831685.96	34048517.37	30643665.63	27579299.07	24821369.16	22339232.24	20105309.02	18094778.12	16285300.31	14656770.28
Electronics (15%)	6735000	5724750	4866037.5	4136131.875	50,15,712	4263355.28	3623851.988	3080274.19	2618233.061	37,25,498.10
Furnishings (15%)	13035000	11079750	9417787.5	8005119.375	83,04,351	7058698.748	5999893.936	5099909.846	4334923.369	51,84,684.86
Equipments (15%)	2077500	1765875	1500993.75	1275844.688	1084467.984	921797.7867	783528.1187	665998.9009	566099.0658	481184.2059
Software (60%)	900000	360000	144000	57600	23040	9216	3686.4	1474.56	589.824	235.9296
TOTALS	**60579185.96**	**52978892.37**	**46572484.38**	**41053995**	**39248940.71**	**34592300.06**	**30516269.46**	**26942435.61**	**23805145.63**	**24048373.38**