

## **INSTITUTE OF MANAGEMENT**

## NIRMA UNIVERSITY

## SUMMER INTERNSHIP FINAL REPORT

<u>ON</u>



Vardhan Consulting Engineers

Job Profile: Finance Management Intern Project: Project Finance - Modeling and Analysis Title: Financial Modeling and Analysis of 50 Flats Housing Project in Gurgaon, Haryana IN.

## **SUBMITTED TO :**

PROF. MEETA MUNSHI

## **SUBMITTED BY:**

ASTHA SINGH 191214 MBA FT 2019-21 DATE: 5th July 2020

## DECLARATION

I, Astha Singh, hereby declare that this Summer Internship Report is an authentic work done by me. It is to the best of my knowledge and belief. This is to declare that all the work undertaken in the completion of this Summer Internship Report such as researches and analysis is purely my work.

Astha Singh 191214

## ACKNOWLEDGMENT

Summer Internship Report provides an opportunity to pause and reflect back on the work done over the past two months. It gives an idea where we did well, where we still need to learn and also to analyze and learn from our own work. It also provides us an opportunity to be grateful to the company which gave us the learning experience and trusted us. Hence, I would like to thank everyone who had a hand in making my summer internship work fruitful and worthy.

I would like to thank **Mr. Ashish S Kumar, Consultant, Vardhan Consulting Engineers** for providing me this opportunity to undertake Project Finance as my internship project and in guiding me throughout the project. In the desperate and uncertain times due to Covid-19, the learning experience provided by Vardhan was remarkable.

I would also like to thank **Mrs. Neha Kumari, HR Manager, Vardhan Consulting Engineers** for being a supportive figure and successfully guiding the interns to complete their internship tasks and also for taking care of the requirements of the interns.

I extend my heartiest gratitude to the faculty and administration of the **Institute of Management**, **Nirma University** for providing me the opportunity to take up an internship and for making this report.

Special thanks to my **Faculty Mentor - Prof. Meeta Munshi** for her care, support, and guidance during this internship and also as a well-wisher during this difficult time.

I would also like to thank my fellow interns at VCE, **Miss Shalini Budhwani** for her unconditional support and also about informing about this internship opportunity at VCE and **Miss Palak Jain** for helping me learn better and her support while performing the tasks. Their cooperation during the internship period was valuable.

Last but not the least, **my parents** for being the constant pillar of support and guidance and my **best friend** for helping me out in this internship during these difficult times.

## **EXECUTIVE SUMMARY**

Project finance is the financial analysis of the complete life cycle of a project. Typically, a costbenefit analysis is used to determine whether the economic benefits of a project are greater than the economic costs. An analysis is particularly important for long-term CAPEX growth projects.

Project Finance was a completely new concept that I learned at this stage. I learned the difference between corporate finance and project finance. The internship's learning was immense, starting from the basic theoretical concepts of the first task to learn how to build a model in the 4th task. It gave a general understanding of the term project finance, both in theory and in practice. The initial understanding of how the financial model works, looking at Excel spreadsheets and then creating financial models on my own, helped me learn a lot that can be used in the future and in my professional career.

It helped me to understand the basic terminologies, assumptions, and the financial projections on which the attractiveness of a project is decided.

Financial modeling is used in various projects ranging from power generation to residential development projects. It helped in developing an understanding of the business models of various sectors.

On completing the final task of the internship, the learnings are now well established in my mind. I can now understand the terms and calculations used in a financial model and develop one on my own.

The report contains information about the company and the services offered by it. It also contains detailed analysis of the fianancial model which is the title of the project. The report contains an industry overview of the consulting industry. It also includes learnings and findings of the entire internship period and also the corporate skill development program which was part of the internship.

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# **PART A: PROFILE OF THE ORGANISATION**

## **ABOUT VARDHAN CONSULTING ENGINEERS**

Registered Name	M/s Vardhan Consulting Engineers
Registered Address	Vardhan House, Anand Bazar, Danapur Cantt, Patna -
	801503, Bihar (INDIA).
Registered Entity	Sole Proprietorship (Registered under the Bihar Shops and
	Establishment Act, 1953)
Type of Business	Consultancy Services in Energy and Education Sector
NGO / NPO	NO
Registration Date	10th June 2018
GST Registration	YES ( On 21st June 2018)
Conceptualization Date	10th Feb 2014 (Initial framework of VCE was done)
Name of Proprietor	Mr. Ashish Kumar
Website	https://techvardhan.com/
LinkedIn Page	https://www.linkedin.com/company/techvardhan/
Google Business	https://g.page/techvardhan/

Vardhan Consulting Engineers "VCE" is an engineering and management consulting firm for the energy sector. The prime function of the firm and its consultants is to provide technical, financial, and project management services to the project developers of energy, power, and infrastructure sector.

The key services and areas of expertise of VCE are (but NOT limited to);

- ✓ Feasibility Analysis, Detailed Project Report, Financial Analysis (Investment Memorandum).
- ✓ Financial Closure through Debt or Private Equity for Project Finance.
- ✓ On-site and Off-site Project Management and EPC-Management

✓ Documentation and Transaction Services for Sale of Project.

✓ Project Development and Transfer of Rights at NTP (Notice-to-Proceed).

It has a specialty in the following projects:

- a. Solar PV Project
- b. Solid waste management project
- c. Sustainable development and Reporting, and
- d. M&A and private equity financing.

It is present in India, the United Kingdom, the Philippines, Cambodia, Thailand, the special administrative region of Hong Kong and Nepal. It is further expanding its operations in countries with a detailed understanding of the markets. Its customers include public services, they are also looking to expand the customer base by providing services in other sectors as well. The company has a dedicated team of consultants with rich domain experience. The company, as part of its Payback initiative, particularly for young people, has initiatives such as Vardhan Merit Scholarship and VCE Training and Internships. It is contributing to the industry and education of young minds in order to build a better society.

#### **Services Range:**

Vardhan Consulting Engineers has the following revenue streams by rendering various services in Engineering and finance projects which includes:

- i. Consulting Services in Engineering and Management projects
- ii. Pearl jewelry Importing and Branding
- iii. Stock Market and Cross Currency Trading
- iv. Investment & Insurance Advisory

Apart from the above-stated business activities, it also offers services in the education sector, as its society pay-back initiative:

i. Vardhan Merit Scholarship

ii. VCE Training and Internships

Vardhan provides engineering and management consultancy services for small and medium-sized businesses. The projects are :

- (i) Solar PV Project Under this VCE offers services for the developers of the Large-Sized Utility-Scale Solar PV Power Project. The services offered include feasibility analysis, detailed project report, Financial analysis, project finance services, project management services, EPC management services, documentation services, and project development & transfer of rights services.
- (ii) Waste To Energy For the developers of Municipal Solid Wastes Management Units for Municipal Corporation, VCE provides, Techno-Financial Feasibility Analysis of MSW Unit, Engineering designing of segregation, separation, and sanitary landfill of waste components, EPC-Management for compost and fertilizer making unit, RDF, and MSWM Unit, Commercial Analysis of Waste Management Contract and Tipping Fee with Municipal Corporation, Setting up of Pyrolysis Units and Energy Generation Units.
- (iii) Sustainable Development VCE provides the following services to the companies and institutions which want to address their carbon footprints and ready to adopt a sustainable development strategy.
  - Climate Change and Sustainable Development Educational Tour and Sessions.
  - Sustainability Reporting and Documentation.
  - Sustainable Development Practices, Ideas, and Innovation.
  - Reducing carbon footprint strategy.

- M&A and PE For the purpose of merger & acquisition in aiding business growth, the services offered by VCE are:
  - Management of complete process (start to finish) of M&A of company.
  - Help in raising funds as debt, private equity or asset management funds for the project
  - Business development and management consultancy for revenue and market expansion.
  - Valuation and Financial Analysis for different projects with different methods.

#### **Major Projects and Customers:**

Customers of VCE are generally small and medium-sized businesses.

VCE has successfully completed the following major projects in:

- Thailand 5 MW Solar PV Plant 2019
- Cambodia 50 MW Solar PV Plant 2015
- Telangana, India 24 MWp (10+10) Solar PV Plant 2014
- UK 19.50 MWp Solar PV Plant 2014
- The Philippines 6.25 MWp Solar PV Plant 2014
- Chattisgarh, India 2 MW Solar PV Plant 2013
- Gujarat, India 5 MW Solar PV Plant 2012

#### VCE reaches to its clients through the following ways:

- Business Enquires
- Business Presentations
- Website (Email)

#### VCE CORE TEAM

- Ashish S Kumar- Founder CEO (ashish@techvardhan.com)
- Neha Kumari- Manager HR-Admin (hr@techvardhan.com)
- Manish S Kumar-Consultant, M&A and IPO, NewYork, USA
- Amit S Kumar- Consultant, IT & Software Sector, Pinang, Malaysia

## **GROWTH STORY OF THE COMPANY**

The idea for VCE emerged as the investment scenario in the Indian energy sector was very positive in EF 2013-14. The annual installed capacity of photovoltaic energy was expected to grow at a CAGR of around 49.5% between 2010 and 2014.

This led to the incorporation of Vardhan Consulting Engineers in 2018. Since then, the company has been involved in providing engineering and design consultancy services in energy projects, construction projects, and consultancy business development for start-ups.

The company provided its consulting services on projects, especially on solar projects, around the world. He completed about 10 major projects in India, Thailand, Cambodia, the United Kingdom, and the Philippines.

So, in times when the solar sector in India was not rewarding, it started to expand its operations in other parts of the world.

Along with consulting services, the company is providing internships and training for young candidates.

The company has successfully trained and built a network of more than 800 interns on various projects, from finance to engineering projects and corporate skill development.

Thus, being a consulting company, its human capital is the most important resource of the organization. He needs to value his resources and build them as strategic resources to obtain a competitive advantage in the sector.

The idea behind his internship and training for young graduates is to be in constant contact with the population that will be part of the workforce.

#### VCE INTERNSHIP PROGRAM

This internship program is one of the many initiatives taken by VCE to give back to society, helping the needful and create a positive impact. The company believes that small learning, motivation and proper guidance from the industry experts can make a big difference in any student's career prospects. The interns get the chance to work under one of the consultants of VCE who shares his experience, learnings, and practical-industrial insights on the different issues of the corporate. The knowledge one gets during the internship is very enriching to understand the real corporate world, skills required to survive, sustain, and grow, and many more things. It bridges the gap between college and corporate life. The methodology used to provide learning to the interns is unique and it is entirely different than the academic way of learning that usually followed in colleges.

Internships Offered by VCE in different fields are :

- Project Finance
- Solar PV Power
- ➢ Electric Vehicle
- ➢ Waste To Energy
- Climate Change
- Case Study Analysis
- ➢ Green Building

## **INDUSTRY OVERVIEW :**

#### **INDUSTRY CLASSIFICATION:**

- VCE can be classified under the Service sector as Business Consulting Industry.
- However, it provides Consulting services in the Solar energy industry, thus this industry also has implications on VCE.
- In recent years, the demand for specialist consultancy services has been immensely sought after by clients in India, which has ended up opening the opportunity for a large number of consultants to help companies with a knowledge base and specialized resources.
- It is estimated that the sector will grow at a compound annual growth rate of 30%, to become a sector of 27 billion rupees by 2020, according to the reports of the Chambers of Commerce and Industry of India (Assocham).
- To date, there are about 6,000 consulting firms in metropolitan cities, including Delhi (25.7%), followed by Mumbai (25.5%), Chennai (12.1%) and Kolkata (9.1%). In addition, the service sector contributes more than 50% of the nation's GDP.
- This rapid growth of this sector in India is largely attributed to improved investment activities due to the low-cost structure, entry of many major players in the Indian market, relaxation of restrictions prior to FDI and strong capabilities in areas such as IT, management, civil engineering, telecommunications, petrochemicals, energy, and metallurgy. The steady growth will lead to the expected increase in contracting activities.
- It is projected that by the next three years, there would be more than 2.2 lakh people getting employment in almost 10,000 consultancy firms across the nation.

## THE MAJOR STRENGTHS OF THE INDUSTRY

- The main strengths that place the Indian consulting firm above consulting organizations in developed economies are professional competence, low-cost structure, high acceptability, flexible thinking, high learning agility, strong interpersonal skills, focused approach, and a general understanding of business.<sup>1</sup>
- In addition, their experience in several areas and familiarity with local conditions are some other reasons that help them win over global players.

## CHALLENGES AND SHORTCOMINGS

- The Indian consultancy sector has some deficiencies, which has hampered the growth of exports, such as limited local presence in a foreign country due to the lack of intensified knowledge of the market, low-quality assurance, low brand value, lack of strategic links, insufficient international experience Indian consultants working abroad and low level of R&D.
- Despite these limitations, the consulting sector in India is responding creatively to changing customer needs and seeking innovations to meet their future needs.
- The adoption of best practices for data warehousing, knowledge management tools, and the Internet guarantees the fastest growth of this sector in the near future. Despite the expansion of consulting organizations, the size of individual companies is growing in response to another trend in the industry. Consulting firms that are unable to compete in size are trying to meet customer requirements by outsourcing their project to another company while maintaining overall project responsibility.

<sup>&</sup>lt;sup>1</sup> <u>https://www.indianchamber.org/wp-content/uploads/2020/05/COVID-19-Impact-on-Indian-Consulting-Industry-VOS-27042020.pdf</u>

- The biggest challenge for Indian consulting firms is to compete with global players in the market. Indian consulting sectors need to define their specializations and differentiate themselves from their competitors.
- With the increasing globalization of consulting firms, Indian consulting sectors need to adopt a new organizational design that best suits their contexts and identities.

## COVID IMPACT ON THE INDUSTRY

- VCE is affected in two ways, as it is involved in the consulting services sector, but the services offered are for the energy and renewable energy sector.
- The service sector is facing a WFH situation in times of downtime, but the energy sector is suffering a production impact of -20% to -25% in times of hidden crisis.
- The measures that were taken to contain the spread of Covid-19 certainly had an adverse effect on the consultancy industry in terms of new business development activities, where face-to-face interaction is often required to gaining the trust of stakeholders.
- The main cost component of the consulting industry is salary cost. A reduced cash flow due to the delay in receiving payments from customers takes more immediate action impact on payroll costs. Delays in payroll payments can lead to discontent among the workforce that, in turn, would affect the quality of customer relationship management and deliveries.
- The main cost component of the consulting industry is salary cost. Reduced cash flow due to delay in receiving payments from customers takes more immediate action impact on payroll costs. Delays in payroll payments can lead to discontent among the workforce that, in turn, would affect the quality of customer relationship management and deliveries.
- The real opportunities for this sector are likely to be felt from the fourth quarter of FY21 and will continue into FY22, which may appear to be a more beneficial year for the Indian country consulting industry<sup>2</sup>

<sup>&</sup>lt;sup>2</sup> <u>https://www.indianchamber.org/wp-content/uploads/2020/05/COVID-19-Impact-on-Indian-Consulting-Industry-VOS-27042020.pdf</u>

## **COMPANY'S ORGANIZATION CULTURE**

To acquire potential employees and retain existing employees, VCE's organizational culture involves the following practices:

- Internship and training program: The supply of talent is appropriate for the internship and training program as a return initiative from society. In addition, training is provided to potential employees.
- Mentor Guidance: Interns are designated mentors who help them throughout the apprenticeship period and train them according to industry requirements. A similar practice is followed on Facebook to gather a talented base of employees.
- Achievements and recognition: Employees are recognized for their efforts and are rewarded through financial incentives or additional benefits, thereby creating a healthy competitive environment in the organization.
- Adapting to changing business and business models: To adapt to changing models, employees are trained to be thinkers and create opportunities in times of adverse situations.
- Constant feedback: Employees, including interns, are constantly reviewed and oriented about the work/task they perform. Helps in creating a culture of employee growth in the organization.

## **7-S FRAMEWORK ANALYSIS**

7S Framework identifies 7 factors that can be divided into Hard Factors and Soft Factors.

- I. Hard Factors: Concrete factors represent the factors that can be explicitly observed in an organization. These factors can be changed in an organization to build a strategic position in the competitive space.
  - Structure: The VCE structure has the main team: Ashish S Kumar: Consultant, Energy sector, Bangkok, Thailand

Neha Kumari: Consultant, HR, and ERP,

Manish S Kumar: consultant, mergers and acquisitions and IPO,

Amit S Kumar: Consultant, IT, and software industry,

The VCE follows the centralized system, although there are geographical heads in the business. Employees report to their heads and who report to the consultant's head.

- Strategy: VCE's strategy is to develop experience in consulting and engineering services for companies in the solar energy sector. It is also taking an initiative to connect with young minds from business and engineering colleges to take advantage of human capital. In addition, VCE is expanding its global presence in countries that differ from its competitors in the Indian market. iii.
- Systems: VCE employees must report their level of progress on a daily basis to their heads.

#### II. Soft Factors :

Soft factors refer to the factors implicit in the organization.

 Style: The Laissez-Faire leadership style is adopted at VCE. According to him, employees have the opportunity to "let them do it: as they can. Young startups generally follow this leadership style, as it helps to build a trusting relationship between the employer and the employee.

- Team: The VCE team generally has engineering and management qualifications and has varied experience in the industry. They are able to adjust to global markets and offer quality services.
- Skills: It involves training the team and developing their skills and competences.
  It helps in consultancy companies, as human capital is their biggest advantage.
- Shared values: VCE follows the green model and is environment friendly and reflects it in its model.

## PART B: PROJECT WORK

#### **PROJECT FINANCE**

Financial Modeling & Analysis

#### All ABOUT PROJECT FINANCE :

Project finance is a means of financing projects that generally have a lot of infrastructures, are capital intensive, or are related to public services. During their useful life, these projects are treated as entities distinct from their parents. A project financing undertaking is completely off-balance-sheet for the parent company. Therefore, all financing that this entity uses must be repaid exclusively from its own cash flow and subject to its own assets.

Project finance is the financial analysis of the complete life cycle of a project. Typically, a costbenefit analysis is used to determine whether the economic benefits of a project are greater than the economic costs. The analysis is particularly important for long-term CAPEX growth projects. The first step in the analysis is to determine the financial structure, a mix of debt and equity, that will be used to finance the project. Then, identify and evaluate the economic benefits of the project and determine whether the benefits outweigh the costs.

Project financing allows sponsors to raise debt beyond the parents' capacity. This loan can be viewed in an individual capacity and is not affected by the credit standing of its sponsors. Therefore, more beneficial and flexible credit terms can be negotiated, depending only on the merit and potential of the project under analysis.

What makes project financing truly special is the separation of the legal identity of parents and SPV. This provides enormous diversification and dilution of the risk element. The parent company's shareholders are immune to fluctuations in the project's destination. The liability is limited to the value of the equity contributed by the sponsors. In addition, the risk is also reduced with the involvement of several entities. More than one company can often form a joint venture to form a single SPV. Thus, the same amount of risk when distributed among a larger number of participants reduces the exposure of each party.

# PROJECT FINANCE

**PROJECT FINANCE** is a means of funding projects that are typically infrastructure heavy, capital-intensive or related to public utilities.



Fig:1 Overview of Project Finance<sup>3</sup>

<sup>&</sup>lt;sup>3</sup> <u>https://efinancemanagement.com/sources-of-finance/project-finance</u>

#### Why Do Sponsors Use Project Finance?

A sponsor (the entity that requires financing to finance projects) can choose to finance a new project using two alternatives:

- > The new initiative is financed on the balance sheet (corporate financing)
- The new project is incorporated into a newly created economic entity, SPV, and a financed off-balance sheet (project financing)

#### Who are the Sponsors of Project Finance?

When participating in a project financing venture, each project sponsor seeks a clear objective, which varies according to the type of sponsor. In summary, four types of sponsors are often involved in these transactions:

- Industrial sponsors They see the initiative as upstream and downstream integrated or in some way linked to their core business
- Public sponsors Central or local government, municipalities and municipalized companies, whose objectives are social welfare
- Contractor sponsors who develop, build or manage plants and are interested in participating in the initiative, providing equity and/or subordinated debt
- Financial sponsors/investors Invest with the objective of investing capital in high-profit businesses. They are highly prone to risk and seek a substantial return on investment.

#### Sectors where Project Finance fits are :

Since Project Financing shifts part of the risk associated with the project to the lenders, this financial plan is one of the most preferred options for private sector companies. This structured financing technique is implemented mostly by the sectors that have low technological risks and a predictable market. Therefore, the method of funding a project using Project Financing is generally employed by companies in the telecommunication, mining, transportation, and power

industries. Sports and entertainment venue projects also often avail of the benefit of this financing scheme. Project Financing is also preferred by many financial services organizations because they can earn better margins if a business chooses to opt for this scheme as opposed to any other financing technique.

## **PROJECT FINANCE IN INDIA 2020**

Project finance in India has traditionally been associated with "core" sectors such as roads, highways, power projects, ports and airports. Recently, there has been increased government focus on urban development (which is expected to increase by 75% by 2030). We expect that health and sanitation, mass transit and waste-to-energy will be focus sectors for project finance in the next few years. Traditional lenders (banks and non-banking financial companies or NBFCs) are facing a liquidity crisis since their capital is tied up in risk allocation and weightage for stressed debt. Lenders are also taking more calculated and nuanced risk calls, based on industry-wide issues faced by project developers (for instance, the tariff renegotiation for renewable projects in Andhra Pradesh). Funding structures and new sources of lending are being explored (such as InvITs, alternative investment funds and so on). The government has looked to significantly liberalise offshore lending to encourage Indian developers to reduce dependence on Indian banks and NBFCs.

#### **Government Role in Project Finance :**

Depending on the nature of the funding, prior government approval may be required.

External commercial loans (ECB) can be taken under the automatic route (without the approval of the RBI) or under the route of approval (with the prior approval of the RBI), depending on whether the eligibility criteria and limits prescribed by The RBI under the main directions of the ECB is served or violated. For the infrastructure sector, ECBs of up to \$ 750 million or their equivalent can be withdrawn by eligible borrowers under the automatic route.

Likewise, depending on the sector in which the project entity falls, foreign direct investment (FDI) can be done under the automatic route (without the approval of the relevant Indian Ministry/government of the Ministry in question) or the government route (with the relevant Indian Ministry / Indian government) Department prior approval). FDI is prohibited in certain specified

sectors (such as atomic energy, lottery, betting, and gambling). The infrastructure sector generally falls under the 100% automatic route.

Project financing in India is used for both greenfield and brownfield projects in sectors such as:

- Public infrastructure (roads, airports, metro rail, and ports, among others).
- Energy (power generation (solar, thermal, wind, hydro), power transmission, and so on).
- Construction.
- Manufacturing (cement).
- Education.
- Healthcare.
- Telecommunication.

#### Some of the significant project finance deals in the last few years were:

• HPCL-Mittal Energy's 18 million metric tonnes per annum (MMTPA) petrochemicals complex for US\$2 billion.

• Green Bond issuance by Neerg Energy for US\$475 million.

• Dewan Housing Finance Corporation's INR-denominated notes issuance settled for US\$10 billion.

As a general rule, in India, projects are financed with a 3: 1 Debt: Equity ratio. It is preferable that the project is carried out using a special purpose vehicle (SPV) route. This means that the project is maintained as an asset separate from the parent/promoter balance sheet. This helps creditors/debt providers to assess the specific risks of a project and allows them to assume only those risks while financing the project.

#### **Major Sectors/Segments Attracting Funding**

Project financing is the most suitable for infrastructure development (for example, Highways, Power Plants, Ports, Airports, and EEZ), where investment is relatively high and revenue visibility is long term. Projects in the infrastructure segment take 10 to 15 years to repay the loan, which makes them ideal for obtaining long-term financing by raising funds through SPV.

#### A Career in Project Finance:

Broadly, jobs in project finance in India can be classified into three roles:

- Origination/Relationship Management
- Project Appraisal/ Project Advisory
- Project Syndication/Debt Syndication.

## **MY PROJECT IN THE INTERNSHIP**

#### **Project Title :**

#### Financial Modeling and Analysis of 50 Flats Housing Project in Gurgaon, Haryana IN.

#### CASE PROBLEM STATEMENT

Techvardhan Infra Pvt. Ltd (Any Company) "CLIENT" has acquired a piece of land near Gurugram HR and wants to develop it as a residential building having 50 flats of 900 sq. ft each.

They are expecting to sell the flats at a rate of Rs. 4000 / sq.ft. The expected CapEx is Rs. 8 Crore and OpEx is Rs. 50 Lacs / per annum for the whole project.

They are seeking a non-recourse debt (project financing) with 70:30 as D/E ratio from leading commercial banks in India as a 12 years term loan.

Prepare a financial model and analyze the cost, revenue, and debt repayment along with finflow / cash flow analysis. Calculate equity IRR and DSCR.

## **PROJECT INFORMATION**

The project was based on the infrastructure sector. It is the building of residential flats/ housing in Gurgaon. Financial Modeling and Analysis of 50 flats housing project in Gurgaon, Haryana, India,

The model was to be developed on the basis of certain assumptions such as debt rate, sell price appreciation rate, inflation rate, and various other relevant parameters.

The model was to be developed keeping the CAPEX and OPEX in mind and all the necessary conditions.

Banks generally evaluate the projects on the basis of the financial models. Assumptions play an important role in building a financial model, they form the foundation which is realistic and applicable in the current scenario.

The project required preparing a financial model incorporating all the details of the problem and following all the assumptions

A task of developing a financial model in excel with 4 sheets, majorly:

• Cost Sheet - The cost sheet generally includes the overall expenditure involved in the project. Cost is of both capital and operating in nature which is given in the sheet. Capital Expenditure is heavy expenditures involved at the beginning of the project and also while expanding and modernizing. The cost sheet predicts all the expenses involved in any project. The proportion of every expense with respect to the total expenses which helps users to ascertain whether the costs are in their expected range. It gives an idea of whether to incur more costs or control it in any particular area or overall.

4	Project Cost (CapEx)											
5	; Rate (Rs./sq.ft)		% of Project Cost	O & M Cost (Monthly Breakdown) (OpEx)	O & M Cost (Monthly Breakdown) (OpEx)							
5	Flat	995	44,775,000	55.962%	Building Maintainence	44		1,980,000.00				
7	Interior Decoratior	125	5,625,000	7.030%	Utilities (Electric + Water + Internet)	22		990,000.00				
3	Furniture	205	9,225,000	11.530%	Salary (Maid + Acountant)	20		900,000.00				
)	Fixtures	10	450,000	0.562%	Plumber + Electrician + Misc etc	15		675,000.00				
0	Building Registrat	10	450,000	0.562%	Insurance charges	10		450,000.00				
1			-	0.000%								
2	Broker Fee	65	2,925,000	3.656%	Total O&M Cost (per year)			4,995,000				
3	Stamp Duty	200	9,000,000	11.249%								
4	Fund Raising Fee	23	1,035,000	1.294%								
5	Tranfer of Deed Fe	50	2,250,000	2.812%		OPEX Per Flat	99,900					
6				0.000%								
7	Interest During Mc	60	2,700,000	3.375%								
8	Loan and Docume	25	1,125,000	1.406%								
9				0.000%								
0	CSR, HSE, Traini	10	450,000	0.562%								
1												
2												
3	Total Project Cost		80,010,000				Activ	ate Windows				
٨							Go to S	ettings to activate				
	Problem Statement	Cost	Revenue Fin Flow	Debt (+)	•		00103	cungs to activate				

Fig 2: Cost Sheet of the model prepared.

Analysis – This helped in estimating all costs. The amount to be spent on capital expenditure and operating expenditure. The cost breakup of both Capex & Opex.

The cost sheet helps in ascertaining the amount of equity and the amount to be raised from debt. It shows the different expenditures and the budgeted amount.

Here the Capex is INR 8,00,10,000

The Opex is INR 49,95,000.

Revenue Sheet - Revenue Sheets contains the revenue sources and the time period. It also contains the expected amount of income. The revenue sheet may differ from model to model. In the given model the revenue sheets mention the city which shows the real estate scenario in that city. The size of the flat, expected occupancy, rent amount, and rent deposit amount is also given which all contribute to the projection of revenue.

Revenue sheets show the overall income from the flat over the tenure of 25 years with changes adjusted according to different factors like inflation, etc.

Formulae for calculation of terminologies mentioned in the revenue sheets are :

Calculation of revenue = Number of flats sold per year \* Price adjusted as per inflation

Revenue Pa	rameters
City	Gurugram
Number of flats	50
Area Per flat	950 Sq Ft
Selling Rate per sq ft	4000rs/sq ft

#### Fig 3: Revenue Sheet of the Model

The revenue model assumes that of the total 50 flats, 15 are sold each year from Jan 2022 till 2024 and the remaining in the year 2025. The revenue grows up each year as the price increases with a 7 % rate of inflation.

• Debt Sheet - The debt sheet contains information regarding the debt amount, interest rate, term, payment period, and moratorium period as well. It also depends on the kind of loan one is taking and from which institution. The debt sheet given in the case contains a debt repayment schedule over the number of years for which the loan is taken. Interest expense in the debt sheet flows into the income statement, the closing debt balance flows onto the balance sheet, and principal repayments flow through the cash flow statement (financing activities).

Formulae for calculation of terminologies mentioned in the debt sheets are :

<u>IPMT</u>: IPMT is used to get the interest amount of payment for the first period, the last period, or any period in between. Rate, concerned period, total no. of payment periods, and loan amount(i.e. present value of project amount\_debt amount).

<u>PPMT</u>: PPMTis used to get the principal amount of payment for the first period, the last period, or any period in between. Rate, concerned period, total no. of payment periods and loan amount (i.e. present value of project amount\_debt amount)

<u>PMT</u>: PMT function calculates the payment for a loan based on constant payments and a constant interest rate.

Rate, total no. of payment periods, and debt amount.

-		-	-	-	-		-							-
1														
2														
5														
4	Debt Amount	56.01		Period No	Date (EoQ)	Int. Pmt.	Prin. Pmt.	Total Pmt.	<sup>p</sup> rin. Balance	2				
6	Debtrate	12%		0	Friday, January 1, 2021	1.6803	0	1.6803	56.01					
7	Moratorium	0.25 yrs		1	Thursday, April 1, 2021	1.6803	2.08445178	3.7647518	53.9255482		Date (EoQ)	Int. Pmt.	Prin. Pmt.	Fotal Pmt
8	Term	5 years		2	Wednesday, June 30, 2021	1.6177664	2.14698534	3.7647518	51.7785629		Saturday, January 1, 2022	8.01874	8.72057	16.7393
9	ayment Period	20		3	Tuesday, September 28, 2021	1.5533569	2.2113949	3.7647518	49.567168		Sunday, January 1, 2023	5.24393	9.81508	15.059
10				4	Monday, December 27, 2021	1.487015	2.27773674	3.7647518	47.2894312		Monday, January 1, 2024	4.01205	11.047	15.059
11				5	Sunday, March 27, 2022	1.4186829	2.34606885	3.7647518	44.9433624		Tuesday, December 31, 2024	2.62556	12.4334	15.059
12				6	Saturday, June 25, 2022	1.3483009	2.41645091	3.7647518	42.5269115		Wednesday, December 31, 2025	1.06505	13.994	15.059
13				7	Friday, September 23, 2022	1.2758073	2.48894444	3.7647518	40.037967					
14				8	Thursday, December 22, 2022	1.201139	2.56361277	3.7647518	37.4743543		Total	20.9653	56.01	76.9753
15				9	Wednesday, March 22, 2023	1.1242306	2.64052115	3.7647518	34.8338331					
16				10	Tuesday, June 20, 2023	1.045015	2.71973679	3.7647518	32.1140963					
17				11	Monday, September 18, 2023	0.9634229	2.80132889	3.7647518	29.3127674					
18				12	Sunday, December 17, 2023	0.879383	2.88536876	3.7647518	26.4273987					
19				13	Saturday, March 16, 2024	0.792822	2.97192982	3.7647518	23.4554689					
20				14	Friday, June 14, 2024	0.7036641	3.06108772	3.7647518	20.3943811					
21				15	Thursday, September 12, 2024	0.6118314	3.15292035	3.7647518	17.2414608					
22				16	Wednesday, December 11, 2024	0.5172438	3.24750796	3.7647518	13.9939528					
23				17	Tuesday, March 11, 2025	0.4198186	3.3449332	3.7647518	10.6490196					
24				18	Monday, June 9, 2025	0.3194706	3.44528119	3.7647518	7.20373845					
25				19	Sunday, September 7, 2025	0.2161122	3.54863963	3.7647518	3.65509882					
26				20	Saturday, December 6, 2025	0.109653	3.65509882	3.7647518	0.00				Act	ivate '
27		1				- T							Got	o Sottin
	• •	Prob	lem Stat	ement	Cost Revenue Fin Flow	Debt	(+)							o settiii

Fig 4 Debt Sheet of the Model.

- The debt tenure was of 12 years but as residential projects generally end in 5 years, hence a separate debt amortization table was prepared to calculate EMI in a tenure of 5 years with quarterly payments.
- The amortization table considered a moratorium period of 0.25 years and the interest expense of the period was considered in capital expenditure calculation.
- The debt rate used was 14% p.a.

**Finflows Sheet -** The Fin flow sheet starts with the project details which is very important for as the cost and revenue both depend on it and it gives a basic idea of what is being dealt with.

The details in this case are :

-Size of property

- Debt-Equity Ratio
- COD
- Debt Service Reserve

It states the assumptions of the financial model which is crucial for projecting. They form the foundation of a financial model on which it is built.

The details in this case are:

- Inflation rate
- Expected tax rate
- Debt rate
- Moratorium
- Debt tenure
- Depreciation rate
- MAT

	А	В	С		D		E		F		G	
1	PROJ	Assumptions										
2	Size in Sq. Ft	950	80.01		Inflation		7.00%		Inflation		7.00%	
3	Equity	30%	24.00		Debt rate		12.0%	12.0% T			25.00%	
4	Debt	70%	56.01		Debt tenure		12.0 yrs	12.0 yrs			10%	
5	Debt Service Resv (DSR)	0.25 yrs			Moratorium		0.25 yrs					
6												
7		Today	COD		1		2		3		4	
8		22-May-2020	Friday, January	1, 2021	31-Jan-	2022	31-Jan	-2023	31-Ja	an-2024	31-	Jan-2025
9												
10	Revenue in Million INR					57	1	60.99		55.2593		20.33
11					For 50 flat	s	For 35 flats	5	For 20 fla	ats	For 05 fl	ats
12	Operating Expenses					1.98		1.48		0.63		0.07
13	Building Maintenance				(	0.99		0.74		0.32		0.03
14	Utilities (Electricity + Water + Intern	et)			(	0.90		0.67		0.29		0.03
15	Salary (Maid + Acountant)				(	0.68		0.51		0.22		0.02
16	Plumber + Electrician + Misc etc				(	0.45		0.34		0.14		0.02
17	Insurance Charges											
18												
19	Total Operating Expenses				5	5.00		3.74		1.60		0.17
20												
21	EBITDA				5	2.01	5	7.25		63.66		20.16
11												
23	Non Operating Expenses											
24	Interest				-8.027328344		-5.249547659		-4.016349395		-2.628373884	
25												
26	Income before Taxes				43.98		52.00		59.64		17.53	
27	Tax				10.99		13.00		14.91		4.38	
28												
29	Net Income				32.98		39.00		44.73		13.15	
30		Coch Flow										
31		Cash FIOW										
22	Equity	-24.00										
34	Net Income	-24.00			32.98		39.00		44 73		13 15	
35					52.50		35.00		4.75		15.15	
36	Principal Payment (-)				-8.729910556		-9.825591241		-11.05878951		-12.44676502	
37												
38	Final Project Cashflow (Equity)	-24.00			24.25		29.17		33.67		0.70	
39												
40	DSCR				3.759534509		4.65989367		5.211790535		1.627927845	
41												
42	Final Cash Flow	-80.01			24.25		29.17		33.67		0.70	
	Problem Statement	Cost Revenue	Fin Flow D	ebt	(+)				: 4			

Fig 5 Fin Flow Sheet of the Model.

After preparation of the financial model, the project was to be evaluated on the basis of:

DSCR = (EBITDA - tax) / total debt service (i.e. interest + principal payment)

IRR = Internal rate of return (IRR) is the interest rate at which the net present value of all the cash flows (both positive and negative) from a project or investment equals zero.

н	I						
RESU	-						
Equity IRR	63.02%						
Min DSCR	1.627928	-					
Avg DSCR	3.81						
Project IRR	Fig 6						
Equity IRR:							
Equity IRR = 63.02 %							
DSCR:							
• Min. DSCR = 1.6279							
• Avg. $DSCR = 3.81$							

Factors that need to be considered for qualifying a project as project finance are:

- Assessment of promoter history and background
- Evaluation of the company and project business model
- Legal due diligence
- Analysis of financial statements and capital structure
- Determine major risks associated with the project
- Analysis of tax effects
- Credit analysis and evaluation of loan terms
- Project valuation

The internship was divided into 4 smart tasks and preparing the financial model was the 4<sup>th</sup> and final task. The other three tasks included building the concept of project finance, learning the different terminologies that are a part of project finance. It helped us in understanding the uses of project finance and the different sectors where it is used. The tasks gave a fair idea of the assumptions that are required in building a financial model and how values are assumed

considering the project and also on the location, etc. It helped in understanding different sheets used in a financial model and the banking regulations. The main task was to assess how a new venture is assessed to qualify as project finance. What are the factors that are needed to be considered while qualifying it as project finance? The different types of revenue models and the repayment procedure if the debt currency and revenue currency was different.

## INFRASTRUCTURE TRENDS IN GURGAON

• A certificate of no objection (NOC) from the city and country planning department is now a must for registering properties in Gurgaon.

• According to Section 7A of the Haryana Urban Development and Regulation Act (Amendment) 2017, registration of land sales (less than 0.5 acres) in 95 villages in Gurugram cannot be done without a department NOC city and country planning department. But there was an increase in illegal land registration in the first three months of this year, without the knowledge of the DTCP.

• In recent years, there has been a significant change in the purchasing behavior of customers, especially in the generation of the millennium. They are more inclined to more dynamic living spaces compared to space usually rented.

• As industries continue to struggle with labor due to blocking restrictions, Haryana State Industry and Infrastructure Development Corporation (HSIIDC) is working on a policy for distributing housing units to industrial workers who have failed to attract buyers in more than six years

. • Developers and home buyers have supported green technology. This will continue to grow with developers focused on technological advances in the acquisition of raw materials that are environmentally friendly and sustainable and environmentally sensitive projects. Customers are also opting for smart homes that pave the way for sustainable living.

# PART C: LEARNING FROM THE SUMMER TRAINING PROJECT.

## LEARNINGS & FINDINGS FROM SMART TASK -1

Smart Task 1 was focused on the basics and concept of project finance which was essential so that we develop an idea of what project finance is all about.

The understanding of how project finance works and the areas where it is applied.

Project finance is a means of funding projects that are typically infrastructure-heavy, capitalintensive, or related to public utilities. During its lifetime, these projects are treated as distinct entities from their parent. A project finance venture undertaken is completely an off-balance sheet item for the parent.

The module thus laid a brief introduction of types of financing the projects and the important aspects of project finance.



Fig 7

## LEARNINGS & FINDINGS FROM SMART TASK - 2

The task involved in module 2 was to understand the financial model made in excel platform and various steps involved in constructing the real financial model based on the original project. A financial model of a residential project was provided to the interns where we had to analyze and learn from the costs, assumptions, formulae, and other crucial things.

So there are four major portions in the financial model

- Cost sheet which considers every cost involved in the project. Cost is of both capital and operating in nature which is given in the sheet.
- Revenue Sheets contains the revenue sources and the time period. It also contains the expected amount of income. The revenue sheet may differ from model to model.
- The debt sheet contains information regarding the debt amount, interest rate, term, payment period, and moratorium period as well.
- FinFlow sheet gives the overall cash flow in the project until the whole life cycle of the project.

It helped us in analyzing the complete model required to study a project financially.

In order to analyze a project, certain calculations are required, such as:

- i. Internal rate of return
- ii. iii. Debt service coverage ratio

Based on these calculations, a project is evaluated on its profitability.

It also helped us to learn the steps involved in building a financial model.

All these details when properly calculated give an understanding of the profitability and the feasibility of the project.

## LEARNINGS & FINDINGS FROM SMART TASK - 3

The third task given in the internship makes it clearer to understand the lenders' perspective and how they assess the project and make the decision whether to finance the project or not.

The following aspects are really important to be taken into consideration

- > Debt to equity ratio
- Principal repayment schedule
- Sinking fund build-up
- Trust and retention mechanism

The next part of the module gave a picture of various sectors where project finance is used to assess the business. Sectors such as Power Sector (Coal, Gas, Solar, and Wind Power Plant Project), Infrastructure (Residential and Commercial Buildings), and Public Utilities (Airport, Road, Highways, etc.) and Manufacturing Sector, etc. Every sector has a different way of revenue generation which means different ways to repay their obligation. Therefore different sectors need a different plan of action in project finance.

The module also developed an understanding of the various factors that should be considered if the financing bank is in abroad and the debt is in foreign currency. These factors can be as under:

- i. Monetary policies
- ii. Money market rates
- iii. Financial market rates
- iv. Exchange rates

## LEARNINGS & FINDINGS FROM SMART TASK - 4

The smart task 4 involved preparing a report and a financial model in excel for clients of VCE. The case selected by me was of the Financial Modeling and Analysis of 50 Flats Housing Project in Gurgaon, Haryana, India.

All the previous tasks were the foundation for completing this task. Constructing the financial model, I had to analyze all the factors required in setting up a residential unit. The trends of the infrastructure sector. The banking and other government regulations followed in Gurgaon.

Adjusting the expenditure according to the Capex and Opex given the case problem statement.

Building all the four sheets was the major part which constitutes a financial model

Calculating the IRR, DSCR, IPMT, PPMT, and PMT.

Adjusting revenue according to the inflation rate.

Constructing debt amortization table

All this was major learning as this is how the financial model is prepared in the corporate world for banks, lenders, and other stakeholders.

The residential model incorporated real scenarios and real rates which are prevalent in the market That was an additional learning opportunity to analyze and prepare accordingly.

This internship was a building stone in my professional career. It will be helpful in my future endeavors in Finance.

Project Finance and Financial Modelling are two crucial parts of the Finance domain and adding them both to my knowledge and skillset will be a great help in taking up future opportunities in the financial world.

### LEARNINGS FROM CORPORATE SKILL DEVELOPMENT

Corporate Skill Development Program was also a compulsory part of the internship which was to be undertaken by every intern.

The purpose of it was to analyze our own personality and skillsets and develop them to be used as a plus point in the career.

To understand what success means to us and how one should be focused on the goal and waste zero energy in negativity. The session clearly mentioned how we should devote our time and energy to only important things. We need to prioritize things to make efficient use of time and energy so that most of our time and energy can be used to do productive things.

It was to be undertaken keeping in mind the current scenario and be prepared to face difficult situations both in professional and personal lives.

Overall development- To summarize the whole of the corporate skill development program I would like to mention the learnings from all the sessions.

<u>Analyzing the skillset</u>: Listing down our own skills gives a clear picture of where we need to work and in which thing we need to polish to be corporate ready. Even those skills that cannot be written on resume play an important role in the overall development of a person. So unlisted skills must also be considered for improvisation.

<u>Defining success</u>- We need to be clear with the 3 Ps while deciding our goals because just passion cannot be followed if we do not have any purpose and practicality of doing it. So defining your own success is really important to me to be clear about the journey.

<u>Time and Energy Management</u>- Prioritizing the activities in life is really important to manage our time and energy in life. Effective utilization will always result in a better outcome. Removing negativity from day to day life gives a better result.

<u>Sensitivity Analysis</u>- Knowing that what all thinks matters more than others and which all things we are sensitive to must be known to us so that we can work upon to improve ourselves to be corporate ready.

## ANNEXURES

#### **1.CERTIFICATE OF COMPLETION - Internship**

#### 2. CERTIFICATE OF COMPLETION – Corporate Skill Development Program





#### Certificate ID: VCE/COC6005

Date: 25th June 2020

## **Certificate of Completion**

This certificate is awarded to **Miss Astha Singh** from **INSTITUTE OF MANAGEMENT NIRMA UNIVERSITY**, for successfully completing her internship at M/s Vardhan Consulting Engineers as Management Intern during **1st May 2020** to **25th June 2020**.

We appreciate her focus towards learning and analyzing about Project Finance – Modelling and Analysis and completing her internship project along with the report submission.

Astha Singh's internship project title was "Financial Modeling and Analysis of 50 Flats Housing Project in Gurgaon, Haryana IN".

During her tenure as Management Intern, we found her efforts sincere, meticulous and result oriented.

We wish all the best in her future endeavors.

Sincerely

Aumari

Neha Kumari Sr. Manager HR & Internship Coordinator

+91 979 111 2715 hr@techvardhan.com



Certificate URL : https://certificates.techvardhan.com/COC6005



## Vardhan Consulting Engineers

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Certificate ID: VCE/CSD2541

Date: 30th May 2020

# CERTIFICATE OF COMPLETION

This is to certify that **Miss. Astha Singh** from **Institute of Management**, **Nirma University**, in appreciation of the successful self-evaluation activities performed during the **Corporate Skill Development Program** in our organisation during **1st may 2020** to **30th May 2020**, she analysed, listed and developed important skill set for corporate requirements.

We found Astha Singh a self-aware, enthusiastic, punctual and hardworking individual. With her developed skills and learning attitude, she can be a great value addition to the team she joins for any project or purpose.

Aumari

Neha Kumari Program Coordinator





Certificate URL : https://certificates.techvardhan.com/CSD2541 Organised by: VARDHAN CONSULTING ENGINEERS (https://techvardhan.com/)

## REFERENCES

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