

Financial Analysis of Commercial / Residential cum Office Building Complex, Al Khuwair, Oman

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Abstract:

The concept of building hyper market in capital city is gathering momentum in many middle- east economies as it gives boost to tourism industry and creates a suitable climate for right investment. The Directorate of Orphan Funds, Sultanate of Oman constructed and developed a Hyper Centre in Al Khuwair area in Muscat during 2003 to 2005 to promote Muscat as a favoured destination of investment as well as for generating revenues from tourism. What was the financial viability of making such a huge investment? The financial benefits of such a hyper market were calibrated by carrying out a cost-benefit analysis of the expenditures incurred and benefits accrued. The cost-benefit was checked with Financial Internal Rate of Return (FIRR). The land was provided free of cost by His Majesty government of Sultanate of Oman. However the infrastructure development costs were the major costs which were financed by raising loan and by floating equity. The major outflow was the capital cost incurred on land development cost. Developed lands in hyper market were rented out afterwards under certain agreements. The income or inflows were rental income received from residential area, shopping complex and official buildings. The FIRR was carried out with a 60:40 debt-equity model. The net cash flow technique was adopted to calculate the financial viability. 11% was the project FIRR before the payment of

interest and the equity FIRR was 10%. Overall the investment project was financially viable.

Key words: Financial Internal Rate of Return (FIRR), project IRR, debt-equity model, financial viability, discounted cash flow technique

JEL Classification: G13, G31, H43, R33

1.0 INTRODUCTION

The Directorate of Orphan Funds carried out a project, constructed and developed a Hyper Centre in Al Khuwair area in Muscat, which has expanded a lot in the last 15 years in Oman. This *Hyper Centre* was developed to promote the tourism sector in Muscat and the entire Sultanate. It was expected to have multiplier effect on the national economy.

The plot for the hypermarket is located in Al Khuwair has area of 40,000 sq. m. A financial analysis was carried out with the objective of examining the financial viability of such kind project. For this purpose, annual streams of costs and revenue were prepared. The viability was expressed in terms of pretax FIRR (Financial Internal Rate of Return) on total investment.



Source: *mapsofworld.com*



Source: google.com

Figure 1: Muscat and Al Khuwair Map

2.0 LITERATURE REVIEW:

There exists a basic difference between financial and economic analysis. The financial analysis deals with the project benefits from the market point of view or business angle whereas the economic analysis deals from the national economy point of view. Further the economic analysis deals with technically or economically important projects e.g. development projects. However, the financial analysis is an essential prerequisite for the economic analysis where there is a need to consider about the non-economic demands and effects of a project (Kampf et.al. 2009).

What are the reasons for conducting a financial analysis for a public sector project? One vital reason is to ensure the availability of funds and to finance the project throughout its investment, operation and maintenance phases without any bottleneck. Expected positive economic returns although are important in a project life cycle but is not a sufficient condition to validate undertaking a project. Further, it is vital to ensure that there are enough funds to finance the operations of the project. There are number of examples of development projects with expected high economic returns but have failed due to financial hindrances. (Jenkins et. al. 2011)

As per the Asian Development Bank guidelines, financial benefit-cost analysis assess the financial viability of a proposed project, i.e., if the proposed project is financially attractive or not to make investment. Here, the unit of analysis is project and not the entire economy. Therefore, attention is paid for the additional financial benefits and costs to the utility, attributable to the project. But the economic benefit-cost analysis evaluates the project from the viewpoint of the entire economy whereas the financial analysis evaluates the entire utility by providing projected balance, income, and sources and applications of fund statements. The financial benefit-cost analysis includes the following steps: (i) determination of annual project revenues (ii) determination of project costs (iii) estimation of annual project net benefits (iv) determination of the appropriate discount rate (v) estimation of average incremental financial cost (vi) estimation of financial net present value (vii) estimation of the financial internal rate of return and (viii) risk and sensitivity analysis. Project revenues, costs and net benefits are estimated with-project and without-project conditions. Again these are estimated on the basis of constant prices for a selected year (e.g., constant 2004 prices), typically using the official exchange rate at appraisal. The revenues of the project comprise of entirely user charges which exclude government subsidies.

Project Revenue: The project revenues are generally determined for different users, such as households, government institutions and private commercial/industrial establishments. Each of this user group has different consumption pattern, charged different tariff and have different response to tariff increase.

Project Cost: The preliminary project costs are generally worked out in detail by cost- engineers after the selection of the least-cost alternative. The following are main categories of project

cost (i) investments cost (ii) operation and maintenance cost and (iii) re-investments cost during the project life cycle.

Financial Benefit of the Project: The project net benefit is the difference between the project revenues and project costs. The net benefit stream is called the net cash flow.

Financial Rate of Return (FIRR): The profitability of a project to the entity is indicated by the project's financial internal rate of return (FIRR). The FIRR is also the discount rate at which the present value of the net benefit stream in financial terms becomes zero.

3.0 OBJECTIVE

This paper is a post project analysis of the verification of financial viability of the constructed hyper center where a combination of commercial, residential cum office complex buildings has already come up.

4.0 METHODOLOGY

The financial analysis for the project is based on cost-benefit analysis using the discounted cash flow technique and the results are expressed in terms of pretax FIRR on total investment. For this purpose, annual net cash flow statement has been prepared considering annual streams of costs and revenue.

Net Cash Flow: The net cash flow is the difference between total inflows and total outflows.

Net Cash Flow from Equity: The net cash flow from equity is the difference between total inflows and equity value minus principal payment minus interest payment.

5.0 ANALYSIS

The detail methodology include infrastructure development pattern, project costing, developing a debt – equity model and finally carrying out the financial analysis.

Infrastructure Development: Out of the total area of 40,000 square meter, the infrastructure developed for residential area was 12,700 square meter, shopping complex was developed in an area of 14, 100 square meter and office complex was built on an area of 13,200 square meter. The detail of Infrastructure development is given in **Table 1**.

**Table 1: Infrastructure Development
Built-up Area & Rate per sq. meter (in Riyal Oman)**

Sl. No.	Type	Area (Sq. meter)	Rate (RO per sq. m)
1	Residential	12,700	1.65
2	Shopping	14,100	2.50
3	Office	13,200	2.20
<i>Total</i>		<i>40,000</i>	-

The monthly average rental per sq. m of covered area, at the prevailing rates (2005 - 2006) in Muscat, in comparable areas, was taken as RO 1.65 for the residential Block, RO 2.50 for the Shopping Block and RO 2.20 for the Office Block, in the first year, i.e. 2006. The rentals was increased by 10% every second year during the first ten years period, i.e. up to 2015 and by 5% every second year thereafter up to the horizon year.

5.1 *Project Cost and Its Phasing*

The capital cost of the project had been worked out at RO 8.64 million. It consisted of:

- a) Construction and development cost = 8.5 million,
- b) Design fee = RO 60,000,
- c) Supervision cost = RO 60,000 and
- d) Project start-up cost = RO 20,000.

Operation & Maintenance cost for the first year after construction, was taken as RO 50,000 in the second year as RO 75,000 and from the third year onwards it is taken as RO 100,000 per annum to meet the routine maintenance, operational and administrative expenses.

The item wise project cost was phased over 3 year's period from 2003 to 2005 as follows **Table 2**.

Table 2: Project Cost Phasing* (in %)

Sl. No.	Item	2003	2004	Jan to June 2005	July to Dec 2005
1	Project design	40.00	30.00	20.00	10.00
2	Construction	0.00	60.00	40.00	0.00
3	Supervision Cost	0.00	60.00	30.00	10.00
4	Start-up cost	0.00	0.00	0.00	100.00

* excluded land cost

The phasing is based on the work schedule planned by the Design Consultants. Based on the above phasing pattern, the phased cost, year wise, up to the start-up period is presented in **Table 3**.

Table 3: Project Cost Phasing (in R0)

Items	Total	2003	2004	Jan to June 2005	July to Dec 2005
Design	60,000	24,000	18,000	12,000	6,000
Construction Cost	85,00,000	0	51,00,000	34,00,000	0
Supervision Cost	60,000	0	36,000	18,000	6,000
Start-up Cost	20,000	0	0	0	20,000
Total Cost	86,40,000	24,000	51,54,000	34,30,000	32,000

5.2 Project Financing

Of the total project cost of RO 8.64 million, 60% was raised through a loan and 40% through government contribution. Summary of project financing is presented in **Table 4 & 5**. The details of repayment schedule of principal loan amount and

interest are given in **Table 7**. The cost break-up is presented below:

Table 4: Project Financing

Sl. No	Items	Amount (RO)	% share of project cost
1	Loan	51,84,000	60%
2	Govt. contribution (Land & project cost)	34,56,000	40%
Total cost		86,40,000	100%

In addition, the Government will provide the designated land free of cost.

Table 5: Project Cost and Interest during Construction (in RO)

Sl. No	Items	Year 2003	Year 2004	Year 2005	Total
1	Loan	14,400	30,92,400	20,77,200	51,84,000
2	Interest during construction	864	1,87,376	5,20,037	7,08,276
Total loan including interest during construction		15,264	32,79,776	25,97,237	58,92,276

Table 6: Interest calculation during Construction

Items	Year 2003	Year 2004	Year 2005	Total
Interest during construction	Loan in 2003*0.12*0.5	(Loan in 2005*0.12*0.5)+(Total loan including interest in 2003 *0.12)	(Loan in 2005*0.12*0.5)+(Loan including interest in 2003 *0.12)+(Loan including interest in 2004*0.12)	Total interest in 2003, 2004 and 2005

Table 7: Schedule of Repayment of Long Term Loan (in RO)

Particulars \ Years	2005	2006	2007	2008	2009
Beginning Balance	58,92,276	58,92,276	59,33,292	49,44,410	39,55,528
Additional loan	0	41,015	0	0	0
Principal Repayment	0	0	9,88,882	9,88,882	9,88,882
Ending Balance	0	59,33,292	49,44,410	39,55,528	29,66,646
Interest Payment @ 12%	0	7,07,073	7,11,995	5,93,329	4,74,663

Particulars \ Years	2010	2011	2012	2013	2014	2015	2016
Beginning Balance	29,66,646	19,77,764	9,88,882	0	0	0	0
Additional loan	0	0	0	0	0	0	0
Principal Repayment	9,88,882	9,88,882	9,88,882	0	0	0	0
Ending Balance	19,77,764	9,88,882	0	0	0	0	0
Interest Payment @ 12%	3,55,997	2,37,332	1,18,666	0	0	0	0

<i>Particulars \ Years</i>	<i>2017</i>	<i>2018</i>	<i>2019</i>	<i>2020</i>	<i>2021</i>
Beginning Balance	0	0	0	0	0
Additional loan	0	0	0	0	0
Principal Repayment	0	0	0	0	0
Ending Balance	0	0	0	0	0
Interest Payment @ 12%	0	0	0	0	0

<i>Particulars \ Years</i>	<i>2022</i>	<i>2023</i>	<i>2024</i>	<i>2025</i>	
Beginning Balance	0	0	0	0	
Additional loan	0	0	0	0	
Principal Repayment	0	0	0	0	
Ending Balance	0	0	0	0	
Interest Payment @ 12%	0	0	0	0	

5.3 Revenue

The project revenue was accrued from rental income received from the commercial, residential and office facilities, starting from 2006. Occupancy of complex was taken at 70% in the first year, 80% in the second year and 90% thereafter. It was assumed that, on an average, occupancy would fall short by 10% of the capacity over the study period of 20 years (benefit period).

The annual revenue stream for the entire complex was computed up to the horizon year 2025 of the study. The details are set out in **Table 8**.

Table 8: Annual Revenue Stream (in RO)

<i>Years</i>	<i>2006</i>	<i>2007</i>	<i>2008</i>	<i>2009</i>	<i>2010</i>	<i>2011</i>
Occupancy (%)	70%	80%	90%	90%	90%	90%
Revenue (in RO)	7,16,058	9,00,187	10,12,711	11,13,982	11,13,982	12,25,380
<i>Years</i>	<i>2012</i>	<i>2013</i>	<i>2014</i>	<i>2015</i>	<i>2016</i>	<i>2017</i>
Occupancy (%)	90%	90%	90%	90%	90.00%	90.00%
Revenue (in Ro)	12,25,380	13,47,918	13,47,918	14,82,710	14,82,710	15,56,845
<i>Years</i>	<i>2018</i>	<i>2019</i>	<i>2020</i>	<i>2021</i>	<i>2022</i>	<i>2023</i>
Occupancy (%)	90.00%	90.00%	90.00%	90.00%	90.00%	90.00%
Revenue (in Ro)	15,56,845	16,34,687	16,34,687	17,16,422	17,16,422	18,02,243
<i>Years</i>	<i>2024</i>	<i>2025</i>				
Occupancy (%)	90.00%	90.00%				
Revenue (in Ro)	18,02,243	18,92,355				

Note: Rent increase by 10% every second year during the first 10 years period, i.e. up to 2015 and by 5% every second year thereafter up to the horizon year.

The annual revenue for the complex increased from RO 0.7 million in 2006 to RO 1.1 million by 2010 and further to RO 1.9 million by 2025.

6.0 FINANCIAL VIABILITY

Financial Analysis was based on cost-benefit analysis using the discounted cash flow technique and the result was expressed in terms of pretax FIRR on total investment. For this purpose, annual net cash flow statement was prepared considering annual streams of costs and revenue. The financial detail is presented in **Table 9**.

The shortfall in meeting the financial obligation in the initial period, particularly to meet the interest on the loan amount, a bridge loan (short- term) was raised in the year 2006 when the complex utilization is low at 70%.

Table 9: Financial Internal Rate of Return Calculations

<i>Particulars \ Years</i>	<i>2003</i>	<i>2004</i>	<i>2005</i>	<i>2006</i>
Revenue	-	-	-	7,16,058
O &M *	-	-	-	50,000
Net Revenue	-	-	-	6,66,058
Interest payment	-	-	-	7,07,073
Principal repayment	-	-	-	-
Equity	9,600	20,61,600	13,84,800	-
Cost	24,000	51,54,000	34,62,000	-
Cash flows for FIRR on Project Investment	(24,000)	(51,54,000)	(34,62,000)	6,66,058
Cash flows for FIRR on Equity Investment	(9,600)	(20,61,600)	(13,84,800)	(41,015)
Cash flows for FIRR on Project Investment (after interest payment)	(24,000)	(51,54,000)	(34,62,000)	(41,015)
Project FIRR	-	-	-	-
FIRR on equity	-	-	-	-
Project FIRR (after interest payment)	-	-	-	-

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<i>Particulars \ Years</i>	2007	2008	2009	2010
Revenue	9,00,187	10,12,711	11,13,982	11,13,982
O &M *	75,000	1,00,000	1,00,000	1,00,000
Net Revenue	8,25,187	9,12,711	10,13,982	10,13,982
Interest payment	7,11,995	5,93,329	4,74,663	3,55,997
Principal repayment	9,88,882	9,88,882	9,88,882	9,88,882
Equity	-	-	-	-
Cost	-	-	-	-
Cash flows for FIRR on Project Investment	8,25,187	9,12,711	10,13,982	10,13,982
Cash flows for FIRR on Equity Investment	(8,75,690)	(6,69,500)	(4,49,564)	(3,30,898)
Cash flows for FIRR on Project Investment (after interest payment)	1,13,192	3,19,381	5,39,318	6,57,984
Project FIRR	-	-37%	-24%	-16%
FIRR on equity	-	-	-	-
Project FIRR (after interest payment)	-	-	-	-30%

<i>Particulars \ Years</i>	2011	2012	2013	2014
Revenue	12,25,380	12,25,380	13,47,918	13,47,918
O &M *	1,00,000	1,00,000	1,00,000	1,00,000
Net Revenue	11,25,380	11,25,380	12,47,918	12,47,918
Interest payment	2,37,332	1,18,666	-	-
Principal repayment	9,88,882	9,88,882	-	-
Equity	-	-	-	-
Cost	-	-	-	-
Cash flows for FIRR on Project Investment	11,25,380	11,25,380	12,47,918	12,47,918
Cash flows for FIRR on Equity Investment	(1,00,834)	17,832	12,47,918	12,47,918
Cash flows for FIRR on Project Investment (after interest payment)	8,88,048	10,06,714	12,47,918	12,47,918
Project FIRR	-9%	-5%	-2%	1%
FIRR on equity	-	-	-21%	-11%
Project FIRR (after interest payment)	-20%	-14%	-8%	-5%

<i>Particulars \ Years</i>	2015	2016	2017	2018
Revenue	14,82,710	14,82,710	15,56,845	15,56,845
O &M *	1,00,000	1,00,000	1,00,000	1,00,000
Net Revenue	13,82,710	13,82,710	14,56,845	14,56,845
Interest payment	-	-	-	-
Principal repayment	-	-	-	-
Equity	-	-	-	-
Cost	-	-	-	-
Cash flows for FIRR on Project Investment	13,82,710	13,82,710	14,56,845	14,56,845
Cash flows for FIRR on Equity Investment	13,82,710	13,82,710	14,56,845	14,56,845

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Cash flows for FIRR on Project Investment (after interest payment)	13,82,710	13,82,710	14,56,845	14,56,845
Project FIRR	3%	5%	6%	7%
FIRR on equity	-5%	-1%	1%	3%
Project FIRR (after interest payment)	-2%	0%	2%	3%

<i>Particulars \ Years</i>	2019	2020	2021	2022
Revenue	16,34,687	16,34,687	17,16,422	17,16,422
O &M *	1,00,000	1,00,000	1,00,000	1,00,000
Net Revenue	15,34,687	15,34,687	16,16,422	16,16,422
Interest payment	-	-	-	-
Principal repayment	-	-	-	-
Equity	-	-	-	-
Cost	-	-	-	-
Cash flows for FIRR on Project Investment	15,34,687	15,34,687	16,16,422	16,16,422
Cash flows for FIRR on Equity Investment	15,34,687	15,34,687	16,16,422	16,16,422
Cash flows for FIRR on Project Investment (after interest payment)	15,34,687	15,34,687	16,16,422	16,16,422
Project FIRR	8%	9%	9%	10%
FIRR on equity	5%	6%	7%	8%
Project FIRR (after interest payment)	4%	5%	6%	7%

<i>Particulars \ Years</i>	2023	2024	2025
Revenue	18,02,243	18,02,243	18,92,355
O &M *	1,00,000	1,00,000	1,00,000
Net Revenue	17,02,243	17,02,243	17,92,355
Interest payment	-	-	-
Principal repayment	-	-	-
Equity	-	-	-
Cost	-	-	-
Cash flows for FIRR on Project Investment	17,02,243	17,02,243	17,92,355
Cash flows for FIRR on Equity Investment	17,02,243	17,02,243	17,92,355
Cash flows for FIRR on Project Investment (after interest payment)	17,02,243	17,02,243	17,92,355
Project FIRR	10%	11%	11%
FIRR on equity	9%	9%	10%
Project FIRR (after interest payment)	7%	8%	8%

* *Excluding periodic maintenance*

** *To be met from an additional loan as indicated in the schedule of repayment of loan*

7.0 CONCLUSION:

The Financial Internal Rate of Return was worked out for two cases, one on the net income stream without accounting for interest payments and the second by considering net income stream after interest payments. The FIRR worked out to 11% before interest payments and 8% after the payments of interest over the 20 year period. The entire cost of the project including principal and interest repayments was recovered in 7 years, i.e. by 2012.

8% annual internal rate of return was attained after meeting the annual capital- at- charge on the loan amount which covers the total capital cost of the project with interest as well as other operational and maintenance costs. It may be added that the complex will remain functional for another 20-30 years and its residual value could be placed at RO 2.5 million. It will be in addition to the land value of the prime land plot of 20,000 sq. m on which the complex will be built.

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