

## **Business Case Study: Project Investment Analysis of Parking Management Through Manpower**

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### **ABSTRACT**

Whenever an individual or a group is given the opportunity to take on a long-term, profit-oriented project, they have to identify and determine the project's profitability and the amount of time required for payback. These two factors would help determine whether to accept or reject the project, and they can be addressed through project investment analysis. This paper will demonstrate that a project investment analysis on a parking management project can be utilized as a business case study considering the project is long-term, with a possible duration of three to five years depending on which one will generate the most profit. Furthermore, this case study also demonstrates that project investment analysis can be utilized on projects with a service product, no external debt, and the variable of profit-sharing, all of which are uncommon in a project investment analysis case study.

**Keywords:** Case Study, Parking Management, Profit-Sharing, Project Investment, Service Product.

### **1. INTRODUCTION**

PT Binajasa Abadikarya is a multi-specialist service management company with its head office located in East Jakarta. It was established on April 6, 1994 (PT. Bijak, 2018). Based on the interview with the Head Division of Marketing and Business Development of PT Binajasa Abadikarya, they are recently planning to enhance their parking management portfolio by taking on more parking management projects in the hopes that in the future the parking management division of PT Binajasa Abadikarya is able to take on more parking management projects, which will lead to more profit for the firm. The new parking management project is located in the Bintaro Mansion Apartment in South Tangerang City, Banten Province, Indonesia.

PT Binajasa Abadikarya had already created the estimation of revenue, costs, and profit for the parking management project at Apartment Bintaro Mansion, as shown below. It is revealed that they estimated a yearly revenue of 903.000 IDR, a yearly total cost of 695.141.914 IDR, and a yearly profit of 207.858.086 IDR, with PT Binajasa Abadikarya planning to take 70% of the profit, thus resulting in a final yearly profit of 145.500 IDR. As of May 2022, the project is in the negotiation phase in terms of the number of years of the contract, with the option of 3-5 years, and the profit-sharing percentage between PT Binajasa Abadikarya and PT Taman Sari Mantion, the developer of the apartment.

**Table 1** Income Statement Estimation of the Apartment Bintaro Mansion Project

NO.	ITEM	QTT	MONTHLY	YEARLY
	<b>REVENUE</b>			
	<b>Daily Parking</b>			
	a. Car		9.000.000	108.000.000
	b. Motorcycle		9.000.000	108.000.000
	c. Box/Pick Up		2.250.000	27.000.000
	d. Bus			
	Subscription Parking			
	a. Car		35.000.000	420.000.000
	b. Motorcycle		20.000.000	240.000.000
	c. Box/Pick Up			
	<b>TOTAL REVENUE</b>		<b>75.250.000</b>	<b>903.000.000</b>
<b>1</b>	<b>Parking Tax Costs</b>	<b>20%</b>	<b>15.050.000</b>	<b>180.600.000</b>
<b>2</b>	<b>Human Resource Costs</b>	<b>6</b>	<b>27.549.326</b>	<b>330.591.914</b>
<b>3</b>	<b>Operational Costs:</b>			
	System Rent	1	1.250.000	15.000.000
	Entrance Struck/Ticket Termall	50	250.000	3.000.000
	Exit Struck/Ticket HVS	150	250.000	3.000.000
	Manual Ticket (Buck Up)	56	100.000	1.200.000
	General Legal Liability Assurance	1	666.667	8.000.000
	<b>Sub Total</b>		<b>45.115.993</b>	<b>30.200.000</b>
<b>4</b>	<b>General and Administration Costs</b>			
	Photocopy and Binding	1	100.000	1.200.000
	Stationary & Printer	1	200.000	2.400.000
	Transportation	1	100.000	1.200.000
	Office Household	1	150.000	1.800.000
	Telephone & Internet	1	350.000	4.200.000
	Equipment Maintenance	1	50.000	600.000
	Coordination Cost	1	250.000	3.000.000
	Parking Management Permits	1	416.667	5.000.000
	<b>Sub Total</b>		<b>1.616.667</b>	<b>19.400.000</b>
<b>5</b>	<b>Depreciation Costs</b>		<b>11.195.833</b>	<b>134.350.000</b>
	<b>TOTAL COST</b>		<b>57.928.493</b>	<b>695.141.914</b>
	<b>PROFIT/LOSS</b>		<b>17.321.507</b>	<b>207.858.086</b>
	<b>PROFIT SHARING</b>			
	<b>PT.BINAJASA ABADIKARYA</b>	<b>70%</b>	<b>12.125.055</b>	<b>145.500.660</b>
	<b>PT.KCJ/TAMAN SARI MANTION</b>	<b>30%</b>	<b>5.196.452</b>	<b>62.357.426</b>

The main goal of this paper is to demonstrate that this business case study can be used for teaching project investment analysis because, other than the project characteristic of long-term with a duration probability ranging from three to five years, the firm provides a service product, there is no external debt, and profit-sharing is a variable, all of which are uncommon characteristics in a project investment analysis case study.

The methodology for this study is primary data taken from PT Binajasa Abadikarya and secondary data for a weighted average cost of capital calculation. The balance sheet, income statement, and cash flow of the project are calculated from primary data. The straight-line method is used for depreciation, and they are fully depreciated after 48 months.

Weighted Average Cost of Capital refers to Damodaran's calculation of the unlevered beta of business and consumer service in emerging markets, the equity risk premium of Indonesia, and the risk-free rate using the IBPA 5-year bond. This paper was organized into five sections. Section one is the introduction; section two is the related literature and conceptual framework; section three is the methodology and data used in this study; section four is the analysis of the results; and section five concludes the study.

## 2. LITERATURE REVIEW

Gitman and Zutter (2015) stated that "capital budgeting is the process of evaluating and selecting long-term investments that are consistent with the firm's goal of maximizing owners' wealth." Capital budgeting is primarily concerned with how a firm makes decisions based on a sizable investment in long-lived projects to achieve the firm's overall goal. (Dayananda, 2008). According to (Brigham and Ehrhardt, 2002) typically there are three cash flows consists of:

1. Initial investment outlay that includes costs of fixed assets and initial investment in net operating working capital.
2. Annual project cash flow includes net operating profit after tax and depreciation.
3. Terminal year cash flow are often produced from salvage value of the fixed assets and return of net operating working capital not already accounted for in the annual cash flow.

Below is the list of concepts used in project investment analysis:

- The present value (PV) of expected future cash flows on an asset is related to the asset's value and the discounted cash flow (DCF) (Damodaran, 2012).
- The weighted average cost of capital reflects the expected average future cost of capital over the long run (Gitman and Zutter, 2015).
- The cost of capital can be sourced from long-term debt, common stock equity, and preferred stock. For the cost of capital to be optimal or minimal, a company must choose the right proportion of cost of debt and cost of equity (Nurhikmah, 2013).
- Although debt is able to generate capital and thus leverage the capability to gain a return that subsequently improves the welfare of stakeholders, it can increase risk from increased interest payments and principal installments (Cahjono, Dananti, and Mujiyono, 2017).
- Three of the most popular capital budgeting techniques include the payback period, net present value, and internal rate of return (Gitman and Zutter, 2015).
- The payback period is defined by Brigham and Ehrhardt (2002) as the expected number of years required to recover the initial investment.
- (Fernando, 2020) defines net present value (NPV) as the difference between the present value of cash inflows and the present value of cash outflows over a period of time.
- (Corporate Finance Institute, 2019) defines the internal rate of return, or IRR, as the discount rate that makes the net present value (NPV) of a project zero or the expected compound annual rate of return that will be earned on a project or investment.

## 3. METHODOLOGY

### 3.1 Data Collection

The study is mainly based on primary data collected from PT Binajasa Abadikarya and consists of parking tariff, vehicle volume projection, revenue, wage cost, operational cost, general and administrative cost, depreciation cost, and initial investment in

parking equipment. The secondary data gathered from Damodaran's unlevered beta emerging market table, Damodaran's equity risk premium, and the IBPA 5-year bond for risk-free rate were used to calculate the weighted average cost of capital.

### 3.2 Assumptions

Below are the assumptions that were considered during the analysis of the study and will be categorized as either general assumptions or balance sheet or income statements.

#### 3.2.1 General Assumption

- The net profit of the project will be shared in a 70:30 proportion between PT Binajasa Abadikarya and PT KCJ/Taman Sari Mantion, respectively.
- All of the financing for the project was sourced from PT Binajasa Abadikarya's own capital without any additional funds from financial institutions.
- The project has three duration alternatives: 3/4/5 years.
- All transactions are recorded in Indonesian Rupiah.
- IDR inflation was calculated using the average of 36 months of monthly inflation data from Bank Indonesia's Monthly Inflation Rate.
- At the terminal cash flow, the assets would be used for another parking management project at a different place.

#### 3.2.2 Balance Sheet

- The profit that PT Binajasa Abadikarya received from the parking management project was considered a cash account.
- The project is done without current assets (accounts receivable and inventories).
- Intangibles in fixed assets are from the cashless system.
- Accounts payable come from the maintenance vendor and accruals. come from the parking excise tax.

#### 3.2.3 Income Statements

- Revenue is the result of parking tariffs and projections of vehicle volumes.
- The parking tariff value comes from the 2-hour tariff.
- Vehicles included are a car, motorcycle, and pickup.
- Cars, motorcycles, and pickups have daily parking, while cars and motorcycles have monthly parking.
- The revenue for each year is the same as PT Binajasa Abadikarya's yearly revenue projection.
- The cost of service comes from ticket costs, system costs, struck costs, and direct labor.
- General and administration expenses include general and administration equipment and wages.
- The depreciation method for equipment and intangibles is the 48-month straight-line method following the Indonesian Financial Accounting Standard.
- Parking excise tax is 20% of revenue.

### 3.3 Data Processing

Capital budgeting cash flow values were processed from the projected balance sheet, projected income statement, and projected cash flow, while capital budgeting analysis requires discounted free cash flow and a weighted average cost of capital. Each capital

budgeting cash flow and capital budgeting analysis has its own calculations for the project and for PT Binajasa Abadikarya, which are separated based on the contract duration, which could be 3, 4, or 5 years.

## 4. RESULT AND ANALYSIS

### 4.1 Weighted Average Cost of Capital

Since the assumption is that this project has no external source of funding, all of the funding is sourced from the internal cash of PT Binajasa Abadikarya, which leads to 100% cost of equity and 0% cost of debt, and this makes the beta used in the capital asset pricing model calculation count as unlevered beta. Damodaran's beta emerging market table did not have a category for the human resource industry; it was chosen as the closest category, which describes the industry that PT Binajasa Abadikarya indulges in. Using the CAPM formula, it is found that the cost of equity for the project is 11,83%, which means the weighted average cost of capital for the project is the same as the cost of equity at 11,83%.

**Table 2** Cost of Equity

CAPM Variable	Base	Value
Unlevered Beta (Business Service Global)	Damodaran	0,81
Risk-Free Rate	IBPA 5 Year Bond	6,87%
Equity Risk Premium	Damodaran	6,12%
<b>Cost of Equity</b>	<b>Calculated</b>	<b>11,83%</b>

**Table 3** Weighted Average Cost of Capital

WACC Calculation	Base	Weight (1)	Cost (2)	(1) X (2)
Cost of Debt (After Tax)	Calculated	0,00%	0,00%	0,00%
Cost of Equity	Calculated	100,00%	11,83%	11,83%
<b>WACC</b>				<b>11,83%</b>

### 4.2 Capital Budgeting Analysis

The table below shows the free cash flow of PT Binajasa Abadikarya after the profit is shared at 70%. There is no terminal cash flow value because the asset would remain to be used for future parking management projects. Because the asset value has already been fully depreciated, the cash flow at the end of the fifth year is significantly lower than the previous four years, reaching around a level of 250 million IDR at only 88 million IDR.

As for the payback period across options of 3/4/5 years, it is at 2,02 years and 2,45 years for the discounted payback period, which means that any option has a good payback period of less than 3 years. All of the net present values are positive, and the net present value of the 3-year option increases dramatically when compared to the 4-year option, from 107.386.562,94 IDR to 278.598.862,99 IDR, whereas the net present value of the 4-year option increases only slightly when compared to the 5-year option, from 278.598.862,99 IDR to 329.026.223,92 IDR. The internal rate of return of the 3-year option is lower than the weighted average cost of capital at 11,83%; however, the 4-year option and 5-year option reached 20,21% and 22,19%, respectively.

Considering the discounted payback period, net present value, and internal rate of return, it can be inferred that the project starts to be beneficial for PT Binajasa Abadikarya at the 4-year option because the internal rate of return of the 3-year option is below the weighted

average cost of capital. However, the most optimum option is the 5-year option with the biggest net present value and internal rate of return compared to the 4-year option.

**Table 4** Free Cash Flow of PT Binajasa Abadikarya

Account	0 <sup>th</sup> Year	1 <sup>st</sup> Year	2 <sup>nd</sup> Year	3 <sup>rd</sup> Year	4 <sup>th</sup> Year	5 <sup>th</sup> Year
Net Operating Profit After Tax	-	201.230.655,45	194.457.513,65	187.535.456,81	180.461.210,85	307.581.429,74
Profit Sharing		70%	70%	70%	70%	70%
<b>Net Operating Profit After Tax of PT Bijak</b>		<b>140.861.458,82</b>	<b>136.120.259,56</b>	<b>131.274.819,77</b>	<b>126.322.847,60</b>	<b>215.307.000,82</b>
Depreciation & Amortization	-	134.350.000,00	134.350.000,00	134.350.000,00	134.350.000,00	-
<b>Operating Cash Flow</b>	-	<b>275.211.458,82</b>	<b>270.470.259,56</b>	<b>265.624.819,77</b>	<b>260.672.847,60</b>	<b>215.307.000,82</b>
Changes in Current Asset	-	201.230.655,45	(6.773.141,80)	(6.922.056,85)	(7.074.245,96)	127.120.218,89
Changes in Account Payable and Accuals	-	181.200.000,00	-	-	-	-
Net Current Asset Investment	-	20.030.655,45	(6.773.141,80)	(6.922.056,85)	(7.074.245,96)	127.120.218,89
Net Fixed Asset Investment	537.400.000,00	-	-	-	-	-
<b>Free Cash Flow to the Firm</b>	<b>(537.400.000,00)</b>	<b>255.180.803,36</b>	<b>277.243.401,35</b>	<b>272.546.876,61</b>	<b>267.747.093,55</b>	<b>88.186.781,93</b>
<b>Terminal Cash Flow</b>				-	-	-
<b>Total Cash Flow</b>	<b>(537.400.000,00)</b>	<b>255.180.803,36</b>	<b>277.243.401,35</b>	<b>272.546.876,61</b>	<b>267.747.093,55</b>	<b>88.186.781,93</b>
Accumulated Cash Flow	(537.400.000,00)	(282.219.196,64)	(4.975.795,28)	267.571.081,33	535.318.174,88	623.504.956,81
WACC	11,83%					
PV of Cash Flow	(537.400.000,00)	228.192.070,77	221.700.318,25	194.894.173,91	171.212.300,06	50.427.360,93
Accumulated PV of Cash Flow	(537.400.000,00)	(309.207.929,23)	(87.507.610,98)	107.386.562,94	278.598.862,99	329.026.223,92

**Table 5** Result of Capital Budgeting Calculation

Capital Budgeting Techniques	3 years	4 years	5 years
<b>Payback Period</b>	2,02	2,02	2,02
<b>Discounted Payback Period</b>	2,45	2,45	2,45
<b>Net Present Value</b>	107.386.562,94	278.598.862,99	329.026.223,92
<b>IRR</b>	9,97%	20,21%	22,19%

## 5. CONCLUSION

The main goal of this paper is to demonstrate that the business case study of project investment analysis of PT Binajasa Abadikarya can be used as a case study due to the long-term duration of the project and its uniqueness among other project investment analysis case studies; that is, to show that it can also be done on a service product with zero external debt and a variable of profit-sharing because usually the project investment analysis case study involves a company that produces goods, has external debt, and no profit-sharing. The case study answer is that PT Binajasa Abadikarya should take the project with the duration of the contract set at 5 years, but if PT Taman Sari Mantion, the owner of the parking lot, does not agree with the 5-year option, PT Binajasa Abadikarya is able to choose the 4-year option. If they are unable to reach an agreement at more than the 3-year option, it is recommended for PT Binajasa Abadikarya to seek another parking management project with another parking lot owner.

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## REFERENCES

- [1] Brigham, E.F. & Ehrhardt, M.C., 2002. *Financial management: Theory and practice*, Fort Worth, TX: Harcourt College Publishers.
- [2] Cahjono, M.P, Dananti, K, Mujiyono (2017). The Best Indicator of Capital Structure to Predict Firm's Performance, *Review of Integrative Business and Economics Research*, Vol. 6(4), 317-326. Viewed 27 July 2022.
- [3] CFI (2019). Internal rate of return (IRR) - A guide for financial analysts. [online] Corporate Finance Institute. Available at: <https://corporatefinanceinstitute.com/resources/knowledge/finance/internal-rate-return-irr/>. [Accessed 9 March 2022]
- [4] Damodaran, A., 2012. *Investment valuation*, Hoboken, NJ: Wiley.
- [5] Damodaran, A. (2021). Country Default Spreads and Risk Premiums. [online] Nyu.edu. Available at: [https://pages.stern.nyu.edu/~adamodar/New\\_Home\\_Page/datafile/ctryprem.html](https://pages.stern.nyu.edu/~adamodar/New_Home_Page/datafile/ctryprem.html). [Accessed 1 March 2022]
- [6] Dayananda, D., 2008. *Capital budgeting: Financial appraisal of investment projects*, Cambridge: Cambridge University Press.
- [7] Fernando, J. (2020, November 13). Net present value (NPV). Investopedia. <https://www.investopedia.com/terms/n/npv.asp> [Accessed 1 June 2022]
- [8] Gitman, L. J. and Zutter, C. J. (2015) *Principles of Managerial Finance*. Fourteenth. Essex, England: Pearson Education Limited.
- [9] Nurhikmah, D (2013). Optimal Capital Structure Analysis A Study From Indonesia Telecommunication Companies Listed in Indonesia Stock Exchange Period 2009-2011, *Review of Integrative Business and Economics Research*, 2(1), 155-187. Viewed 27 July 2022.
- [10] Nyu.edu. (2018). [online] Available at: <https://pages.stern.nyu.edu/~adamodar/pc/datasets/betaemerg.xls> [Accessed 24

February 2022].

- [11] PHEI (2022). HPW dan Imbal Hasil. [online] Available at: <https://www.phei.co.id/Data/HPW-dan-Imbal-Hasil> [Accessed 1 March 2022].
- [12] PT Binajasa Abadikarya. (2022). *Projection Calculation of Apartment Bintaro Mansion*. Jakarta: PT. Binajasa Abadikarya.