
THE IMPACT OF FINANCIAL RISK MANAGEMENT IN SUCCEEDING MERGERS AND ACQUISITION FINAL PROJECT

Dimas Akbar Rizkiyawan

School of Business and Management Institut Teknologi Bandung, Indonesia

Email: dimas_akbar@sbm-itb.ac.id

ABSTRACT

This study explored ways to manage financial risk and also risk management in a case of merger and acquisitions. The goals of this study is to 1.) To conduct a critical examination of financial risk management in the field of merger and acquisition, which contains assets calculation, financial analysis, market analysis, and project profitability, as well as the connections between these aspects towards the succession of undergoing a merger and acquisition process. 2.) Review the outcomes of the data analysis in order to reach conclusions and suggestions in the context of successability of mergers and acquisitions. The research strategy that is included in this paper are quantitative research and case study. One of the research strategy is by using a method by David S. Clifton & David E Fyfe from “Project Feasibility Analysis”. Another research strategy that will be used in this paper is the Failure Mode and Effects Analysis. The data collected by the researcher will mainly be coming from PT Indo Kaya Energi in a form of archival method, other than that, some secondary sources from articles and journals on the internet will be used in this research. The study demonstrates that the process of merger and acquisitions needs to be carefully examined, the reason behind this is because the researcher needed to analyze not only the financial statement from the company, but also analyze the market, assets and future project forecast cashflow as stated in “Project Feasibility Analysis”

KEYWORDS

Finance, Financial Risk, Risk Management, Mergers and Acquisitions



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How to cite:

E-ISSN:

Published by:

Dimas Akbar Rizkiyawan. (2022). The Impact of Financial Risk Management in Succeeding Mergers and Acquisition Final Project. Journal of Eduvest. Vol 2(10): 2033-2047

2775-3727

<https://greenpublisher.id/>

INTRODUCTION

Global Merger and Acquisitions volumes surpassed \$5 trillion for the first time, easily surpassing the previous high of \$4.55 trillion established in 2007, according to Dealogic statistics (Abramov, Khromov, & Shadrin, 2012). According to Refinitiv, the total value of mergers and acquisitions was \$5.8 trillion in 2021, up 64% over the previous year. Therefore, with M&A growing each year, we decided to research on this topic

Financial aspects are one of the most important points to be reconsidered during M&A (Galpin, 2014). The reason being, companies tend to have liabilities and debt towards the bank and other loan lending companies (Didier, Huneus, Larrain, & Schmukler, 2021). The acquirer should also analyze the assets and the cost of acquiring them or moving them towards another storage compartment (Wei & Clegg, 2020). In other cases, assets will not infrequently be damaged or need to be repaired (Kosicki, Tomberg, & Bradley, 2018). With all of those in mind, the acquirer will have to calculate its financial capability to undergo M&A and whether they should take the opportunity or not (Colovic, Lamotte, & Yang, 2022).

PT Brothers is a service company that has the proper tools to operate the project for Pertamina Geothermal Energy (PGE). PT Brothers has been doing projects related to the geothermal industry since 2012, and the last operation they did is back in 2018 (Ridwan, Purwohedi, & Warokka, 2018). They did not continue for future projects because of the financial condition they had in the past few years, therefore they are looking for a partner that can help them go through this situation.

PT Indo Kaya is looking for a project that is related to geothermal, and with the current condition PT Indo Kaya does not have the sufficient technology to undertake this project (Adityatama, Umam, Purba, & Muhammad, 2019). PT Indo Kaya is viewing PT Brothers' experience and technological advantages as a potential for future projects. For the short term, PT Indo Kaya is looking at the benefits of partnering with PT Brothers by having a funding system to continue doing projects and For the long term, PT Indo Kaya sees the possibility of acquisitioning PT Brothers.

The goal of this paper will observe the condition of PT Brothers Indonesia's asset's compatibility, risk to undergo the project, and project cash flow. Whether PT Indo Kaya Energi will take this project or not is based on the analysis of the whole project.

PT Indo Kaya Energi (IKE) was established in Indonesia in 2005 to provide products and services to the Indonesia Energy Industry. IKE is a wholly owned Indonesia company, focusing on providing first class offerings in a specialized range of products and services. Their focus is on developing their Indonesia business and assets through internal investment and technology partnerships with renowned international companies. A prime example is our partnership with Oil States Industries who have licensed IKE for the manufacture/sale of conductor and premium connections since 2005. IKE has also invested in technology and our personnel to have a specialized product line of Tubular Running Services, as well as Conductor Hammering and Casing Running Equipment.

RESEARCH METHOD

The procedures used to collect data and research it in accordance with a coherent system are referred to as methodology (Cai, 2018). Methodology offers a critical assessment of various research tactics and procedures. The research strategies allow for the formulation of a set of reasoning or processes for approaching the research problems (Chaney et al., 2020).

This dissertation will be using a quantitative research, descriptive approach. For this research, we will be calculating assets, debts and liabilities, market opportunities, and the financial risk that it holds. The quantitative approach will later help us to determine whether financial risk management is important in the case of merger and acquisition.

The qualitative approach is not suitable for this research because simply we do not want a subjective view of the role of financial risk management in the mergers and acquisitions process. Qualitative view will not satisfy our research objective to calculate the financial risk and determine whether Role of Financial Risk Management In Succeeding Merger and Acquisitions importance.

This research will use methods that can be used to determine the financial risk by using the project feasibility analysis. Project feasibility analysis covers most of the aspects that a company needs to know for the ongoing of the merger and acquisition process. This includes market analysis, financial analysis, social profitability analysis and project financing. Thus, we will be using project feasibility analysis to calculate the financial risk for mergers and acquisitions by (Clifton & Fyffe, 1977).

The data for this research is provided from a company in Indonesia, PT Brothers Indonesia and PT Indo Kaya Energi .We chose the study case based on the topic that we will be discussing “financial risk management in merger and acquisition”, the case study should include various aspects such as financial risk caused by liabilities, operation expenses, and project profitability that will need to be analyzed. We also have been using this method in our past projects of mergers and acquisitions, one being in the Indonesian companies between PT Indo Kaya Energi and PT Brothers Indonesia (Kennedy, 2018). Therefore, choosing this tool to help us calculate will be more familiar.

We will be using case studies and existing sources gathered from journals and books from the internet (Azlan et al., 2020). Depending on the sources the researcher utilizes, secondary data can be obtained more quickly and more economical, since there are limitations of financial expense. Secondary research can aid the researcher answer research questions.

RESULTS AND DISCUSSION

Looking for more investment opportunities, PT Indo Kaya Energi is looking to enter the geothermal industries. Indonesia is one of the highest geothermal producers in the world, number three to be precise, right below The United States of America and The Philippines at 1,197 Megawatt Tons. In addition to that, PT Indo Kaya Energi was incentivized by being offered a project from Indonesian electricity company, Perusahaan Listrik Negara (PLN), to supply them with geothermal energy. There are problems however, PT Indo Kaya Energi is lacking experience and the equipment in the field of geothermal since they are mainly focusing in the oil and gas industry. This could be the supporting motive for undergoing merger and acquisition.

1. Amerika Serikat	3,092 MWe
2. Filipina	1,904 MWe
3. Indonesia	1,197 MWe
4. Meksiko	958 MWe
5. Italia	843 MWe

Figure 1
List of geothermal producers.

1. Assets Overview

This is where PT Brothers Indonesia comes in place, a SME company that worked in the geothermal industry for 8 years. Equipped with machinery and workers with enough knowledge and experience to undergo the project. PT Indo Kaya Energi's approach to enter the geothermal industry is to work with the company and or acquire them in the long term in order to expand expertise in other industries, creating the best possible outcome for the company.

Table 1

Shown in this table are the list of PT Brothers Indonesia's assets. (Bolded Unit Names are the available assets in Cisauk warehouse)

No	Unit Name	Specifications	Quantity
1	Sullair Primary Air Compressor, Driven With Engine Caterpillar C -16 ATAAC Fuel Efficiency	Sullair 1350 HDL Two Stage Rotary Screw Compressor, Skid Mounted Open Frame type total Air Volume 1350 scfm at 350 psig.	1
2	Sullair Primary Air Compressor, Driven With Engine Caterpillar C -16 ATAAC Fuel Efficiency	Sullair 1350 HDL Two Stage Rotary Screw Compressor, Skid Mounted Open Frame type total Air Volume 1350 scfm at 350 psig.	1
3	Sullair Primary Air Compressor, Driven With Engine Caterpillar C -16 ATAAC Fuel Efficiency	Sullair 1350 HDL Two Stage Rotary Screw Compressor, Skid Mounted Open Frame type total Air Volume 1350 scfm at 350 psig.	1
4	Sullair Primary Air Compressor, Driven With Engine Caterpillar C -16 ATAAC Fuel Efficiency	Sullair 1350 HDL Two Stage Rotary Screw Compressor, Skid Mounted Open Frame type total Air Volume 1350 scfm at 350 psig.	1
5	Booster JOY WB 12 Gardner Denver Driven With Engine Caterpillar C -15 ATAAC Fuel Efficiency	Two stage Booster Compressor Capacity 2700 scfm at 2500 psig Skid Mounted, open frame.	1
6	Booster Hurricane Driven with Engine Caterpillar C-18 ATAAC fuel Efficiency.	Three stage Booster Compressor Capacity 2000 scfm at 3500 psig Skid Mounted, open frame.	1
7	Office Container	20 feet Office Container C/W Maintenance	2

		Room	
8	Rotating Control Head	WASHINGTON 1300 series 30"x20" Adaptor Rotating Head C/W Bearing Assembly	1
9	Rotating Control Head	WASHINGTON 1300 series 21-1/4" x 2000 Psi C/W 11"x 2000 Dynamic Pressure 350 Psi.Static Pressure 600 psi,Maximum RPM 150 RTJS R71 C/W Bearing Assembly	1
10	Rotating Control Head	WASHINGTON 1300 series 13 - 5/8" x 3000/5000 Psi C/W 11"x 2000 Dynamic Pressure 350 Psi.Static Pressure 600 psi,Maximum RPM 150 RTJS RX 57/BX 160 C/W Bearing Assembly	
11	Rotating Control Head	Grant Rotating Head 7068 13 - 5/8" x 5000 Psi C/W 7-1/16"x 2000 Falow Dynamic Pressure 350 Psi.Static Pressure 600 psi,Maximum RPM 150 RTJS BX 160 C/W Bearing Assembly	1 Each
12	Rotating Control Head	Gran Rotating Head 8068 21 - 1/4" x 2000 Psi C/W 10 "x 2000 Flow Dynamic Pressure 350 Psi.Static Pressure 600 psi,Maximum RPM 150 RTJS BX 160 C/W Bearing Assembly	1 Each
13	Injection Line/Hard Line	2" Pipe sch 160 with long 10 feet,8 feet 6 feet,4 feet,plus TEE,Elbow C/W Union Hammer FIG 1502 C/W Certificate Hydro Test from Anson	2 Sets
14	Hammer Plug Valve	2" Hammer Plug Valve C/W Union Hammer FIG 1502 end Connection MAWP 10000 psi	8 Each
15	Check Valve	2"Check Valve C/W union Hammer FIG 1502 end Connection MAWP 10000 psi	6 Each
16	Adjustable Choke Valve	2" Adjustable Choke Valve C/W union Hammer FIG 1502 End Connection	1 Each
17	Banjo Box	21-1/4"x 2000 psi Bottom and upper Flange RTJS R73 C/W 10" x 900 Ansi (3000) psi Outlet Flange RTJS R 53 (Diverter Flow)	2 Units
18	Banjo Box	13-5/8"x 5000 psi Bottom and upper Flange 13-5/8"x 5000 psi Bottom and upper Flange Outlet Flange RTJS R 53 (Diverter Flow)	2 Units
19	Isolation Valve	10" x 900 ansi Flange RTJS R 53 Expanded Wedge Gate Valve operate by Hydraulic System	1 Each
20	Isolation Valve	12' x 900 Ansi Flange RTJS R53 Expanded Wedge Gate Valve operate by Hydrolique	1 Each
21	Isolation Valve	10" x 900 ansi Flange RTJS R 53 Expanded Wedge Gate Valve operate by Hand Whell	1 Each
22	Throttle Valve	10" x Ansi 600 Flange,Hand wheelsystem RTJS R 53	2 Each
23	Gate Valve	10" x 150 Ansi Flange Hand Whell operated system	3 Each
24	High Pressure Spool	10" x 600 Ansi Flange RTJS R 53 C/W 3 hole 1" Theedolet	2 Each
25	Blooie Line	10" pipe Sch 40 x 6M Long C/W 10"x150 Ansi Flange end Connection	2 Sets
26	Barton Recorder	ITT Barton MAWP 3000 psi 0-400 inch water	2 Each
27	Geothermal Separator	Adjustable Up and Down	2

28	Chemical Injection Pump	Texsteam Pump series 5006 capacity 13 GL/H with 1" piston MAWP 3000 psi	6
29	Down Hole Tool	6-5/8" OD Float and Locking sub C/W 4-1/2" IF PIN x BOX end Connection	3 Each
30	Fuel Tank	Square Tank with Capacity 20000 Liters	1 Each
Ex	Pipe Basket	-	1 Each
t	Pipe Rack	-	1 Each
	Chemical Container	20 feet office container	2 Each
	Rigup Container	20 feet office container	2 Each

From table 1 we can see that PT Brothers Indonesia have a lot of assets, these assets might need some checking before getting moved and stored into PT Indo Kaya Energi’s warehouse. Through observation we did in PT Brothers’ warehouse, Cisauk, we found out some points that needed to be noted for continuing the project. These assets were bought in 2012 with a condition that is last time used in 2018, all these assets have not been currently tested for its compatibility for PT Indo Kaya’s project. Regarding the vital assets such as the compressor and the booster needed to be repaired with the uncertainty of the spare parts being available. These two unrepaired core assets needs a running test from a third party which are a risk we need to be aware of.

Assets from PT Brothers needed additional fees to transport it to our warehouse in Citeureup, the crane that needed to lift them is a 30 tons crane (PT Indo Kaya Energi currently only have 16 tons compatibility) meaning that are additional charges for renting the crane machines. The estimated rent fees for the crane is approximately IDR 8,000,000 / 8 hours, and the crane can not be rented hourly, and will need to be rented two times for lifting the units in Cisauk and dropping it off in our warehouse in Cileungsi.

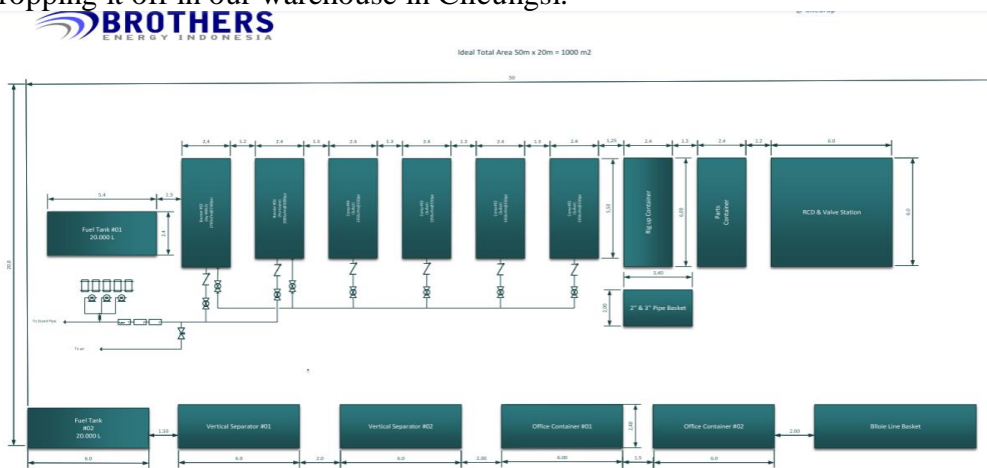


Figure 2
Total space needed for PT Brothers Indonesia main assets

Figure 2 showed us the spacing area needed for these units to be able to fit in PT Indo Kaya Energi’s warehouse is approximately 1000 square meters, which is a fit to our current inventory. The spacing information for the units is shown above.

Reparation Expenses

Table 2
Total reparation costs, preparation costs, salary, and rents for fixing
PT Brothers Indonesia's assets. Total (in USD) ≈ 104,200

No	Job	Quantity	Unit	Unit Budgetary	Total Budgetary
1	Equipment Preparation (Reparation and Spare Parts)				
	Material & Parts Purchase	1	Set	IDR600,000,000	IDR600,000,000
	Repairing /rebuilding parts	1	Set	IDR150,000,000	IDR150,000,000
4	Recertification				
	SKPP Compressors and Boosters BRO #01	1	Set	IDR130,000,000	IDR130,000,000
	Hardlines pipes	1	Set	IDR60,000,000	IDR60,000,000
	Downhole Tools	1	Set	IDR5,000,000	IDR5,000,000
	Lifting Parts	32	Set	IDR500,000	IDR16,000,000
	Gate Valves 10" ANSI 900	3	Unit	IDR10,000,000	IDR30,000,000
	Gate Valve 10" ANSI 150	3	Unit	IDR10,000,000	IDR30,000,000
	Plug Valve 2" FIG1502	8	Unit	IDR6,000,000	IDR48,000,000
	Check Valve 2" FIG1502	6	Unit	IDR6,000,000	IDR36,000,000
	Adjustable Choke Valve 2" FIG1502	1	Unit	IDR6,000,000	IDR6,000,000
	Safety Relief Valve 1"	14	Unit	IDR2,000,000	IDR28,000,000
	Barton Recorder	2	Set	IDR3,000,000	IDR6,000,000
5	Banjo Box				
	13-5/8" 5000x10" ANSi900	2	Unit	IDR5,000,000	IDR10,000,000
	21-1/4" 2000x10" ANSi900	2	Unit	IDR5,000,000	IDR10,000,000
6	T High Pressure	1	Unit	IDR5,000,000	IDR5,000,000
7	Adaptor Spool High Pressure	2	Unit	IDR5,000,000	IDR10,000,000
8	Painting	1	Set	IDR100,000,000	IDR100,000,000
9	Relocation Cost to Citeureup Warehouse				
	Crane Rental at Cisauk 45T	1	Unit	IDR12,000,000	IDR12,000,000
	Forklift at Cisauk 4T	1	Unit	IDR3,000,000	IDR3,000,000
	Crane Rental at Cileungsi 25T	1	Unit	IDR10,000,000	IDR10,000,000
	Crane rental at Citeureup 45T	1	Unit	IDR12,000,000	IDR12,000,000
	Trailer Rental f/Ciasuk	8	Unit	IDR5,000,000	IDR40,000,000
	Trailer Rental f/Cileungsi	3	Unit	IDR3,000,000	IDR9,000,000
10	Salary Employee	1	Set	IDR60,000,000	IDR60,000,000
11	Salary BOD	2	Person		
12	ex Yard rental fee	2	month	IDR10,000,000	IDR20,000,000
13	Office BSD rental fee	3,472,222	year	IDR75,000,000	IDR37,500,000
14	Office & Yard Supply	1	Month	IDR5,000,000	IDR5,000,000

Total	IDR1,488,500, 000
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Looking at Table 2 of the financial expenses, most of PT Brothers Indonesia's equipment needed to be repaired and recertified, the expenses piled up to one billion rupiah (USD 69,500), this includes buying spare parts for the machinery, building custom parts, testing and recertification. It will add additional USD 34,700 to the expense for office equipment, supplies, and salaries, now with the total of USD 104,200. This will make PT Indo Kaya Energi to be more considerate towards acquiring PT Brothers, since there will be a large amount of expenses that PT Indo Kaya Energi needs to cover up after acquiring them in order to run future projects. The worth of these assets will be discussed in the next table, and we will find out if repairing these units will be worth the price or not.

Table 3
PT Brothers Indonesia assets' worth

Unit Name	Quantity	Price
Sullair Compressor	1	USD\$ 125,000
Sullair Compressor	1	USD\$ 125,000
Sullair Compressor	1	USD\$ 125,000
Sullair Compressor	1	USD\$ 125,000
Two Stage Booster	1	USD\$ 175,000
Hurricane Booster	1	USD\$ 200,000
Rotating Head w/ Insert	1	USD\$ 20,000
Total	7	USD\$ 895,000

From table 3, we got the major non-current assets worth of PT Brothers Indonesia in US dollars. It is estimated to be around USD\$ 895,000. With the reparation cost of approximately \approx USD\$ 104,200, it is certainly that if PT Indo Kaya Energi were to merge with PT Brothers Indonesia, it is better to pay for the reparation, relocation, and recertification expenses rather than acquiring new assets that will cost them eight times the price of repairing them.

Financial Analysis

a. Balance Sheet

Table 4
Balance Sheet of PT Brothers Indonesia

Amount in Indonesian Rupiah (Rp)	
Assets	
Current Assets	
Cash	582,362,618
Accounts Receivable	-
Other Receivables	5,990,999,384
Down Payment	2,757,509,289
Prepaid Expenses	4,725,253,111

Supplies	8,930,266,837
Total Current Assets	22,586,391,239
Non-Current Assets	
Fixed Assets	36,033,014
Total Fixed Assets	36,033,014
Total Assets	22,622,424,253
Debt and Equity	
Current Liabilities	
Account Payable	4,336,911,348
Other Liabilities	346,214,126
Short-Term Liabilities	
Payables	732,230,640
Total Current Liabilities	3,258,466,582
Equity	
Authorized Capital	20,000,000,000
Retained Earnings	
Current Year Profit	636,042,329
Total Equity	19,363,957,671
Total Debt and Equity	22,622,424,253

From table 4 stating balance sheet of PT Brothers Indonesia, we can see the total current liabilities of PT Brothers Indonesia is approximately Rp.3,260,000,000. We will be calculating the current ratio for PT Brothers Indonesia, in order to find out the ability of the company to pay short term liabilities. Through current ratio, we can see if PT Brother Indonesia could maximize its current assets on their balance sheet to fulfill its current debt and other payables

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

$$\text{Current Ratio} = \frac{22,586,391,239}{3,258,466,582}$$

$$\text{Current Ratio} = 6.93$$

Since the current ratio of PT Brothers Indonesia is more than 1:1, thus it has the capability to pay its short-term debts. Although this might sound good, but a current ratio number that is too high does not mean the company runs smoothly. The immoderate current ratio that PT Brothers Indonesia has, indicates that there are inefficient use of their current assets or short term financing. This also could be calculated by using working capital ratio with the same equation.

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

This determine that It can mean that the business is letting idle cash flow accumulate rather than properly reinvesting it in business expansion. Most experts believe that a working capital ratio of 1.5 to 2 is desirable.

2. Income Statement

Table 5
Income Statement and Operating Expense (2020) of PT Brothers Indonesia

Income Statement (in IDR)	
Operating Revenue	18,000,000
Operating Expense	
Depreciation Expense	
Gross Profit	18,000,000
Operating Expense	
Salary	385,116,388
Transportation	8,924,500
Office	176,624,747
Depreciation and Amortization	-
Documentation and Delivery	1,000,000
Repair and Maintenance	45,380,100
Meetings	
Advertising and Marketing	
General and Administrative Expense	36,996,594
Total Operating Expense	654,042,329
Operating Profit (Loss)	636,042,329
Operating Profit After Tax (Loss)	636,042,329

The income statement table above shows the statement of the year 2020, the year where PT Indo Kaya Energi considered to undergo an acquisition towards PT Brothers Indonesia. The Table 5 above shows that PT Brothers Indonesia do not gain any operating profit from their projects in the year 2020, with a total of Rp.636,042,329 (USD 44,805) in loss. This is caused by their inactivity for more than two years from the end of 2018 to early 2020 therefore lack of projects. Most of their equipment (Assets), shown on Table 2 repairation expenses, need respiration and recertification to make sure it operates accordingly and to gain assurance towards any project givers in the future.

With the negative operating profit, PT Indo Kaya Energi needed to be more cautious on acquiring PT Brother's Indonesia (Naiborhu, 2019). With the excessive working capital ratio discussed below table 4, a combination inefficiency of managing their assets and operating loss, this does not determine a good outcome for PT Indo Kaya Energi. PT Indo kaya Energi are required to redirect their resources in order to be more efficient, such as finding new projects that will utilize their funding and assets (Chan & Pribadi, 2022).

3. Project Forecast

Table 6
Project forecast given from PT Pertamina Geothermal Energy

PERTAMINA GEOTHERMAL PROJECT FORECAST				
Operational	2021	2022	2023	Total
Cash in				
A. ADDITIONAL FUNDS In USD				
B. REVENUE FROM RENTAL EQUIP				
Mobilisation et Demobilisation	50,000	50,000	114,125	214,125
Daily Operation Fee (THO) - Equipment	292,125	292,125	228,000	812,250
Daily Standby Fee (THS)	424,000	424,000	424,000	1,272,000
Transport Fee	36,000	36,000	36,000	108,000
Demobilization	50,000	50,000	50,000	150,000
C. REVENUE - MANPOWER				
Supervisor Fee	360,000	360,000	360,000	1,080,000
Operator Fee	312,000	312,000	312,000	936,000
Supervisor Transport (Return)	4,800	4,800	4,800	14,400
Operator Transport (Return)	4,800	4,800	4,800	14,400
D. REVENUE - MATERIAL				
Stripper Rubber	26,400	28,800	28,800	84,000
Foaming & Agent (Drum, 200 Liter)	51,200	51,200	51,200	153,600
Corrosion Inhibitor (Drum, 200 Liter)	25,600	25,600	25,600	76,800
E. REVENUE - OPERATIONAL				
30" Rotating Head	6,000	6,000	6,000	18,000
21 - 1/4' Rotating Head	20,000	20,000	20,000	60,000
21 - 1/4" Banjo Box	12,000	12,000	12,000	36,000
Data Acquisition System	-	-	-	-
TOTAL CASH IN	1,674,925	1,677,325	1,677,325	5,029,575
TOTAL REVENUE UNIT PER 3 YEARS (in USD)				5,029,575

Although PT Brothers Indonesia might have some problem related to efficiency, based on table 6 PT Brothers Indonesia is able to create a forecast of project cash flow for the geothermal project offered by PT Pertamina Geothermal Energi (PGE) to PT Indo Kaya Energi. This forecast will make it

easier to analyze the potential of running the project, to be specific, a total revenue of USD\$.5,029,575 for three years along the road. This project could also be extended through contract for more than the initial three years if PT Brothers Indonesia perform well throughout the project duration, making it a long term project that could end up being a steady revenue stream for years to come.

4. Failure Mode and Effects Analysis

Table 7
Failure Mode and Effects Analysis table

Function	Failure Modes	Failure Effects	Severity (1-10)	Potential Causes	Occurrence	Present Controls	Detection (1-10)	RPN
Merger and acquisition Processes	Unusable Assets/Tools	Unable to Execute Forward Projects	9	No Available Spare Parts	1	Spare Parts Are Available From Manufacturers	8	72
				Expensive Reparation Costs	1	All the Reparation Costs Details are Available, So it Can Easily be Managed	7	63
				Not Enough Space in Warehouse	1	Assets Mapping has been Given from PT Brothers, and also Having Blueprints for PT Indo Kaya Energi's Warehouse	10	90
Project Cash Loss	Unprofitable Projects	8	No Clear Cash Flows for Future Projects	3	PT Brothers Indonesia has Created a Future Project Cash Flow, in Order to Calculate Future Revenue and Profits if Somehow PT Indo Kaya Energi Decided to Merge with them	8	192	
				6	PT Indo Kaya Energi has detected PT Brothers inefficiency inside their company, their balance sheet report shows them that if they were to merge, they will have to reorganize its funding and assets usage	10	480	
Market Unavailability	No Available Buyers for	10	Breakthrough Commodity	1	They have Researched that Indonesia Has Capable Markets	6	60	

With Failure Mode and Effects Analysis, we could see potential causes for going through the merger and acquisition process. PT Indo Kaya Energi would have to see the risk of acquiring them, and what chances for them to undergo a smooth transition. In other words, based on Table 4-4, the problems that leads to other problems such as the negative operation expenses, the most possible risk that occurs are unprofitable projects caused by PT Brother's Liabilities. Thus, PT Indo Kaya Energi could invest in PT Brothers Indonesia by acquiring them and paying off their debt. In exchange for new possible markets, besides Pertamina geothermal project, equipped with experience and knowledge in the industry

CONCLUSION

The validity will be defined and supported in this chapter. The archival data collection was the primary study tool, which was reinforced by data gathered and given by the researcher by an Indonesian company (PT Indo kaya Energi and PT Brothers Indonesia). Due to the raw data given by the company and the data collected by the researcher.

By doing a project feasibility analysis and financial analysis, we are able to obtain information from the company's assets and liabilities to conclude whether or not the process of mergers and acquisitions is liable or not. Firstly, the market analysis showed that Indonesia is one of the largest producers in the world, proving that joining the geothermal industry is not as risky as pioneering other commodities that are uncertain and unpredictable. With the growing consumer demand of geothermal energy in Indonesia each year, PT Indo Kaya Energi should seize the opportunity in order to expand their business.

Secondly, the asset analysis showed that most of PT Brothers Indonesia assets are damaged, but repairable. The cost of repairing these assets is relatively cheap to their original price, which is USD \$104,200 , instead of PT Indo Kaya Energi buying new core machineries which are eight times more expensive than its respiration costs, with the price of USD\$ 895,000. The relocation cost is also considered affordable, since most of the expense will be coming from preparing the spare parts of equipment, repairing, and recertification. Therefore, repairing, recertification, and relocating should be far more feasible than buying new equipment for PT Indo Kaya Energi. PT Brothers Indonesia is also having financial difficulties from their absence of projects, but on the other hand PT Pertamina Geothermal Energi gave an offer to PT Indo Kaya Energi which they do not have the equipment nor experience to do the job. Therefore, PT Indo Kaya Energi should consider acquisition and repairing the assets as investment for the company in the future.

Lastly, with the project cash flow being shown, PT Indo Kaya Energi could determine one of the outcomes of the project if executed well throughout the period. This will help PT Indo Kaya Energi strengthen their decision towards the mergers and acquisitions process to whether or not to see the potential of acquiring PT Brothers Indonesia in the long run.

In conclusion, the impact of financial risk management is by providing assistance towards PT Indo Kaya Energi to determine whether merger and acquisition of PT Brothers Indonesia is feasible or not. By knowing the state of PT Brothers Indonesia, PT Indo Kaya Energi could evaluate their decision making process by observing the market risks and financial risk shown by their reports and cash flows in order to make their final decision. Therefore, according to our analysis of PT Brothers Indonesia, PT Indo Kaya Energi should take the opportunity to acquire PT Brothers Indonesia.

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