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COST ANALYSIS OF PRABUMULIH STORAGE FACILITIES

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Abstract- *Cost Analysis of Prabumulih Storage Facilities (a Division of PT. Emprawi) in 2010 and 2011 are: to identify direct costs, indirect costs and cost allocation Jakarta office, classify these costs into variable costs and fixed costs based on behavior of the respective cost. Identification and classification results are used to determine total margin, cost per unit and break-even point (BEP). Direct costs include employee labor, security police, electricity, field examination accommodation, storage maintenance, social contributions, office supplies, and depreciation of assets, while indirect costs include bank administration, bid bond, business licenses and permits. Direct costs and indirect costs plus Jakarta office allocation formed total cost amounting to Rp. 599 million for the year 2010, consisting of 30% variable costs and 70% fixed costs, while for the year 2011 total cost amounting to Rp. 1.150 million consisting of 40% variable costs and 60% fixed costs. This division rented storage space of 7.650 m2 which generated revenues of Rp. 246 million in 2010 with a negative margin of Rp 353 million. While in 2011 it rented 53.850 m2 that generated revenue of Rp. 1,740 million with a positive margin of Rp. 590 million. BEP in 2010 was 54.859 m2 with the actual rent of 7.650 m2 reflecting respectively 63% and 9% of the available capacity of 86.400 m2, while in 2011, BEP was 29.637 m2 with actual rents of 53.850 m2 reflecting 26% and 47% of available capacity of 115.200 m2. To facilitate the cost analysis, it is recommended that PT. Emprawi improves cost information system that enhances a proper cost identification and classification.*

Keywords: storage facilities, cost identification, cost classification, direct cost, indirect cost, variable cost, fixed cost, Jakarta office allocation and break even point (BEP), PT. Emprawi – Prabumulih

Introduction

Indonesia is amongst the biggest oil and gas producers in the world and the government of Indonesia depends greatly on its revenue from these commodities. This industries have been grown with high stability since the last four decades which have affected the government, Migas and Pertamina to invite local small to medium size companies involve in providing various services to oil and gas companies/operators. These opportunities have been utilized by PT. Emprawi ("the Company") as the Government implements a standard that the scope of business for every company involved in oil and gas are limited to their core specification.

PT. Emprawi was established in 1992 by the owners following their successful to run PT. Mangku Batin Abadi (PT MBA), their first company established in 1987, the Company involved in oil and gas services. PT. MBA holds a special license from Pertamina to issue permits for oil and gas companies to carry explosive material, issuing the permit for detonation, and also doing the detonation process for oil and gas companies. The owners of PT. MBA in the same year in 1992 expanded their business in response to an increase in services needed by their customers by forming PT. Emprawi and PT. Prabuwijaya Abadi. These companies are operated in oil and gas services as well as PT. MBA. While PT. Emprawi specializes in warehousing to keep explosive materials, PT. Prabuwijaya Abadi specializes in transportation to carry explosive materials from and to the oil and gas fields.

PT. Emprawi had not been active since 1992 until 2009, because the owners focused only their business in PT. MBA, they see that their effort to win any tender in those years were very little. Otherwise, the owners were so happy during those periods with PT. MBA's business. Since 2009 the revenue from oil and gas services of PT. MBA has decreased because it faces business competitions. However, as the owners have good business reputation and relationship with oil and gas producers for the last twenty years, they were able to make PT. Emprawi to be active in its business commencing 2010.

For the period from year 2009 to March 2010, PT. Emprawi had built two storage facilities in Prabumulih and Jambi, located in Sumatera Island, to be rented out to oil and gas producers such as Pertamina EP, PT. Tiarabumi, Cooper Energy Sumbagsel to keep their explosive materials safely and properly handled by specialized and qualified technician. All funds to finance the projects and operations are derived from the Company. The Company uses join facilities in Jakarta such as office building and administrative employees of PT. MBA to operate its business. The Company records business transactions such as revenue based on rental agreement and assets based on acquisition costs and operating cost as incurred. However, for cost analysis purposes and Break Even Point (BEP) on this final project, such as matching cost against revenue, and cost allocation basis in the Company needs to be investigated. Cost identification, classification and allocation needs to be present in this thesis. A good and proper cost analysis may help the company to make a decision towards their pricing strategies and efficiency on their cost allocation. Therefore, their intention to gain more profit became more visible because the tools that can help them are present.

The data obtained from PT. Emprawi might not be perfect due to their cost recording system. Furthermore, The author use the data as deep as possible in order to complete this final project.

The author considers doing cost analysis in this Company is challenging as the Company involves in a unique oil and gas industry and multi locations. As the operations of the storage rental are similar for Jambi and Prabumulih sites, the author limit specifically to cost analysis on Prabumulih's storage facilities located in South Sumatera.

Problem Identification

1. Is the Company's information system able to present all costs necessary happen in storage rental business to be used for cost identification, cost classification, and cost allocation.
2. Does the Company have a proper basis of cost allocation group Group company's total costs
3. Is the Company aware that unit cost calculation, total margin, and determine the Break Even Point (BEP) analysis may help the Company to improve its storage rental business.

Objectives

1. Understand the business of PT. Emprawi and the cost flowing in Prabumulih warehouse.
2. Able to define every item cost that incurs in Prabumulih Storage facilities.
3. Specify cost identification, cost classification, and cost allocation in order to get the number of unit costs and BEP (Break Even Point).

Literature Review

This thesis focuses on cost analysis, therefore the relevant theoretical foundations will include definition of cost for cost identification. The discussion of cost is expanded to cost behavior such as fixed and variable costs in order to calculate profit margin and Break Even Point. Further, the discussion about depreciation of assets is included in this chapter.

Cost

"Cost as a resource that sacrificed or foregone to achieve a specific objective" (Horngren, Datar & Rajan, 2012: 49).

The word cost is highly essential towards this thesis, as the discussion occur in this thesis related to all of the cost incurred inside the company. Cost itself can be describe as the amount that have to be paid in order to achieve something towards their business objectives. And it have to be placed carefully and recorded in the business process in order to be able to traced to help the company decides business

Direct Cost

"Direct costs of a cost object are related to the particular cost object and can be traced to it in an economically feasible (cost-effective) way (Horngren, et al, 2012: 50).

For example, on a storage facility, electricity cost can be identify as direct cost because it can be traced directly towards the company's business in an economical way.

Indirect Cost

"Indirect cost can be describe as the cost that related to the particular cost object but cannot be traced to it in an economic feasible way" (Horngren, et al, 2012: 50).

Indirect cost are not directly related to the service or product offered by the company, thus, it can't be directly accountable towards the cost object.

For example, the expense occur for the administration of the storage facility has been identified as indirect cost as the cost relating to administration are not directly related to the storage rental business.

Fixed Cost

Fixed cost can be defined as we see the word itself, it is fixed, a cost that does not change even though it is related to the amount of goods or services produced. It goes along with variable cost, as fixed costs are also the expenses that have to be paid by the company throughout their business activity. It goes along with variable cost and acts as one of the two components that sums the total cost.

Fixed cost is cost that remains constant in total, regardless of changes in the level of activity (Garrison, Noreen, Chesley & Caroll (2004: 44).

A fixed cost remains unchanged in total for a given time period, although change happens in the total activity along with the volume. Examples of fixed cost include depreciation, insurance, interest, salaries, and wages. It affects the financial structure of the organization for their pricing strategies and profits.

Fixed costs are important when a company wants to see the break-even point output of a business. Because the profits can be higher if the company can manage the fixed cost well. Furthermore, it is essential to any company to plan how their fixed cost are going to be handled from the beginning as it can determined how the profits level are for the upcoming years.

Variable Cost

Unlike fixed cost, variable cost varies and can changed if the business process of a company is also changed. It is a corporate expense that relates tightly with production outputs. Variable costs vary depending on a company's production or services volume. If the production or services are high, the variable cost will rise, otherwise, if the production or the services are down, then the number of variable cost will also decreased.

Variable cost is cost that varies, in total, in direct proportion changes in the level of activity (Garrison, Noreen, Chesley & Caroll (2004: 42).

The difference between fixed cost and variable cost are, variable costs are more direct, it relates directly to direct material cost or labor cost. For example, if a particular product becomes popular, the it will need a new packaging and advertisement, then the cost of direct labor material will rise as the company have to buy more material to make more product. Otherwise, if a product remains stagnant in their sales and is already out of favored to the market, then the demand will go down and the company may order less material to make the product.

Example of variable cost includes cost of raw material, marketing, direct labor, travelling.

In addition to these two types of costs mentioned above, in certain cases there are costs that are a combination of fixed and semi-variable costs are variable costs are variable costs (semi-variable cost), therefore in the calculation of break even point analysis only cost is the cost of both forms fixed and variable cost then by using some specific calculation method is semi variable costs must be allocated either into fixed and variable costs.

Depreciation

Depreciation is the exhaustion of the useful service potential of as assets though the combination effects of utilization, wear and tear, aging, and obsolescence (Dixon, Arnet & Davidoff (2007: 113)).

Furthermore, according to Dixon et al (2007: 114), there are 4 depreciation methods used in practice:

1. Straight-line Depreciation
Depreciation is determined by dividing the depreciable cost of the asset by number of accounting periods contained in the useful life of the assets.

2. Wavy-line Depreciation (Units of Production Method)
Depreciation is determined by dividing the depreciable cost of the asset by total number of units of output that the asset is expected to render.

3. Decreasing-line
Depreciation is calculated multiplying significant rate of depreciation (e.g. 50% or 25%) by depreciable cost of assets. The amount of yearly depreciation usually is big in the first year and becoming smaller in subsequent years (accelerated depreciation). This method is commonly called double decline method and sum-of-years' digits method in order to accommodate that most depreciable assets tend to turn out less and less service as they grow older.

4. Composite and Group Depreciation
Depreciation is calculated by grouping the similar types or ages of assets multiplying the firm's or group rates in order to simplify the calculation of assets depreciation.

In this thesis, the author would use the straight-line method in order to calculate the amount of depreciation occur in the Company.

Cost Allocation

According to Jiambalvo (2010: 198),

Companies allocate costs to products, services and department for 4 major reasons:
1. *To provide information for decision making.*
2. *To reduce the frivolous use of common resources.*
3. *To encourage evaluation of internally provided services.*

4. *To calculate the "full cost" of products for financial reporting.*

Contribution Margin

Contribution margins can be simplified into several words:

Contribution Margin = Total Revenues – Total Variable Costs

Cost – Volume – Profit Analysis

Total costs, revenues and profit are essential in order to talk about Cost volume profit analysis. This Cost volume profit analysis analyze the behavior and the elements above within the changes that happen in cost of goods sold, selling price, variable cost, and also fixed cost.

The bigger picture of cost volume profit analysis are defined in the following 5 steps:

1. Identify the problem and uncertainties
2. Obtain information
3. Make predictions about the future
4. Make decision by choosing among alternatives
5. Implement the decisions, evaluate performances, and also learn

In order to implement 5 steps above, several theoretical studies needs to be present in the equations to make the numbers solid and can be trusted to be used in the implementation.

Unit Cost

The unit cost is the theory about cost incurred inside the company to produce and sell one unit of a particular product. Unit cost relates tightly with fixed cost and variable cost. Unit cost is essential towards business growth and development. As unit cost are able to conclude that if the company's unit cost become lower annually, it means that they have increase their effectiveness between their revenue and cost incurred inside the company.
The formula of unit cost can be simplified a follows:

$$\text{Unit cost} = \frac{\text{Total Variable Cost + Total Fixed Cost}}{\text{Total Unit Sold or Manufactured}}$$

Break Point Even (BEP)

Break even analysis is a simple yet powerful approach to profit planning that illuminates the relationships among sales, fixed costs, and variable costs (Droms & Wright (2010, 126).

This technique is also commonly referred to as cost-volume-profit analysis. These relationships can be simplified as follows:

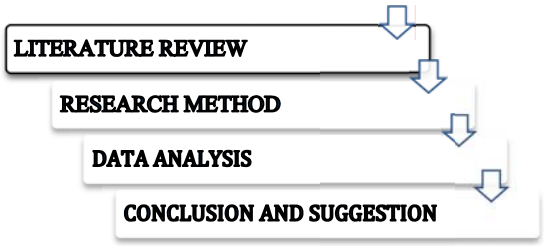
Sales = Fixed Costs + Variable Costs

Based on this equation, BEP (in unit) can be calculated as follows:

$$\text{BEP (in unit)} = \frac{\text{Fixed Cost}}{\text{Sales(per-unit)-Variable Cost(per unit)}}$$

Methodology

Methodology in this final project are the tools that helps us understand the step towards this project that can be taken in order to achieve the goal intended in the first time. The research for methodology requires:



Research Method

This mindset can be used as a systematic way to explain better about this whole project, the analysis of this thesis can only be done by doing the first initial research at the beginning, we have to know about what we are about the company from the inside and also in the outside, we have to know how the company run their business towards their goals, their hierarchy systems, and also the money that circle around the company.

Observation and Comprehensive Research

Observation in this area means the author want to know what is the real deal that happen in the company which relates to the final project, which means, communicate with specific people, following the work environment in the company should have been done so that we know how far this project can go and what to expect in the process.
Comprehensive research in this project means that the author have to start thinking in a systematic way to begin research inside the company, we cannot just ask for all of the data that we need to the company, we have to do it step by step with sequential right timing so that the company are willing to help with a good manner. Furthermore, as the information from the company are received steadily, the author are steadily knows how business runs in the company. By doing that, the author is able to continue the next step toward this thesis.

The observation is done with a visit to the field at Prabumulih storage. The place are very quiet, and if we didn't notice, the place can barely seen from the outside, as the place are not meant to be recognized too much by others.

Literature and Theoritical Study

Literature studies consist of any theoretical material that can help this final project to be finished. This theory might help us to have limitation so we know what we are doing in order to save time and create efficiency. Theoretical Study information can be inherited in related textbook about cost analysis and management theory. This step will help the author solve the equation and applied knowledge in order to stay in the right track of this thesis.

A study of cost accounting are essentials towards this thesis, the author primarily used Cost Accounting by Charles T. Horngren et al in order to solve the numbers that the author need to analyze the cost that occurred to the company.

Methodology

In this step of the thesis, the author is receiving and analyzes the data so that it can be processed for the next step. The data will be divided into two categories, which are:

1. Primary Data
   This data can be collected directly from the company, which are PT. Emprawi. All of this data are collected inside the company. Relating to this thesis, the data that are collected for this thesis is the data about the financial report, and all of the cost that are occur in the business process of the company. The data are essentially collected with direct access with the employee inside the company. The physical ways to get this kind of information is by directly come and communicate to the people inside the company. Interview with several employee also essential to see how the business really works on all level inside the company

2. Secondary Data

This data are also essential towards this thesis, secondary data are the data that are collected outside and inside the company but still related to the company itself, focusing in this thesis, printed financial reports, printed cost summary are also can be categorized as secondary data. From the outside, it can be collected through the company's business related friends, the government office that tare taking care of business permit. Secondary data can also be inherited through the open source such as Internet and newspaper.

Data Analysis

This step is very crucial to see out the process of the thesis. In this step, the author gathers all of the data including the primary data and secondary data. The data are sorted in order to get the right information to be processed in the equation. The information that is already gathered can be processed with the help of literature and theoretical material that can be found in the textbook.

This data analysis can be done with step by step system, the data gathered from the first time until all of the data have already gathered, it has to be sorted from the beginning to the end based on the timing of the data collected.

Conclusion and Reccomendation

Conclusion and Recommendation can only be made if 4 elements above are already done. This requires a mix of objective and subjective matter to conclude. Solution needs to be present in this thesis as one of the objectives of this thesis is to make the company handle their cost based matters better. In summary, the purpose of this final project is to do something that might make the company that we have been in to be better.

DATA ANALYSIS

PT. Emprawi (The Company) was founded on December 23rd 1992 in Jakarta. The Company had been inactive from 1992 to 2009; however, commencing year 2010 the Company has been active in storage rental business. There are 2 commissioners and 3 directors manage the Company. The Company has 8 employees in Prabumulih and 8 employees in Jambi.

The Company runs a business specifically in storage facilities rental to customers to store commercial explosive materials, which are located in Jambi and Prabumulih. The Company obtained various legal and business licenses. For this final project the author focus on data analysis of Prabumulih Site.

Location Map
Source : PT. Emprawi's Document

The location is a little bit far from the crowded area, thus, the location is generally safe to do the business process inside the warehouse, explosive material have to be taken care of with professionalism and high technical awareness.

Table 1 – Type of Storage Facilities and Number of Square Meters

Description		m2
Shaped Charge Warehouse		
	8 units of warehouse with 15m2	120
	8 units of warehouse with 9 m2	72
	Total	192
Detonator warehouse		
	8 units of warehouse with 10m2	80
	8 units of warehouse with 6m2	48
	Total	128
Total Available Square Meter		320

Source : PT. Emprawi's Document

Storage Rental Pricing

The Company sets selling price based on the time period of renting and the size of warehouse room. Inside the facility, there are two big houses consisting of separate Detonator warehouse and shaped charge storage. There's a policy that if the customer or end user want to store their explosive material, they have to rent both of the detonator warehouse room and shaped charge storage room.

There are no exact price for every end user who wants to rent the storage, the price are set bnegotiation between every end user and the company. However, the company has set the minimal period to rent the storage is 6 months and minimum rental price of US$ 3.50 or equivalent to Rp. 31.500 per m2 per day. The Company with total space capacity of 320-m2 and unit rental price of Rp. 31.500 expects to cover all operating costs and make huge profit because the business is very specific with high revenue and low cost

Rental Revenue

Summary of Rental Revenue for 2010 and 2011 are made according to detail rental revenue per customer with description storage size rented, total rented days and rental price per m2.

The Company generated revenue from storage rental of Rp 245.538.000 with 7.650 m2 in 2010 and Rp 1.740.449.700 with 53.850 m2 in 2011.

Administration of Storage Facility Rental

PT. Emprawi obtains customer through tender/bid process. An end user or customer, for example Pertamina, sends an invitation to the companies with request for tender on storage facilities rental. After receiving the request, Pertamina will companies including PT. Emprawi to attend a pre-bid process and bring their companies' data. Pertamina will review all companies' data and decide who are eligible for the tender. The selected companies will send proposal to Pertamina submitting prices and periods of the rental, also bid bond issued by a big bank (such as Bank Mandiri, BNI, BRI) amounting to 1 - 5% of the contract value. If the company wins the bid, the company and Pertamina will sign a contract and submit performance bond issued by a big bank (such as BankMandiri, BNI, BRI) amounting to 1 - 5% of the contract value. The Company issued rental invoice every month in order to get payment from Pertamina. The price that the company has given to the customer are already including income tax (PPh 23) at 10%, therefore, the money derived from the customer will be reduced by 10% to be paid to tax office. Pertamina will pay the invoice in next month.

Storage Facility Quality and Shaped Standard

PT. Emprawi has set their own standard for the facility for the entire storage facilities available on the land owned by the company. The facility have been approved and implemented with the standard procedures issued by DIRJEN MIGAS and Indonesian Police Force.

The standard of the facilities that have to be present inside the area are Security Staff, Security Post,Observer Tower, 4 unit @300 watt spotlight, Embankment Soil, Lightning Rod, Fire Extinguisher, Thorn Wire, and Proper Toilette.

Total Cost for the year 2010 and 2011

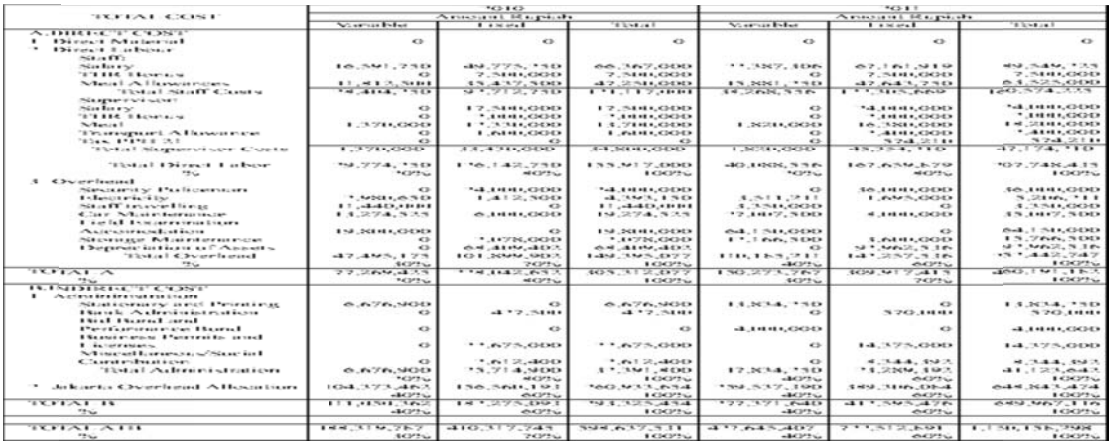
Table 2 – Total Cost for the year 2010 and 2011

DESCRIPTION	'010 Total	'011 Total
A. DIRECT COST		
1. Direct Material	0	0
2. Direct Labor	155,917,000	307,748,415
3. Overhead		
Security Policeman	24,000,000	36,000,000
Electricity	4,393,150	5,206,711
Staff traveling	11,440,000	3,350,000
Car Maintenance	19,274,535	35,007,500
Field Examination Accommodation	19,800,000	64,150,000
Storage Maintenance	3,078,000	15,766,500
Social Contribution (Donations/Charities)	3,612,400	8,344,892
Office Supplies	6,676,900	13,834,750
Depreciation of Assets	68,409,402	93,962,536
Total Overhead	158,684,377	324,621,389
Total A	314,601,377	483,369,834
B. INDIRECT COST		
1. Administration		
Bank Administration	432,500	520,000
Bid Bond and Performance Bond	0	4,000,000
Business Permits and Licenses	23,675,000	14,375,000
Total Administration	24,107,500	18,945,000
2. Jakarta Overhead Allocation	360,933,654	648,843,474
Total B	385,041,154	667,788,474
TOTAL A+B	699,642,531	1,151,158,308

Cost Identification (Direct & Indirect Cost Insertion)

All elements of Total Costs have been validated through verification to their relevant documents (observation) and inquiries with PT Emprawi's management and staff. The Total Costs for the years 2010 and 2011 reflect the business activities in Prabumulih site and Jakarta Office Allocation below.

Table 3 – Jakarta Office Allocation 2010
A) Allocation of Total Cost Jakarta Office to each Company (Rp)



B) Jakarta Office Allocation of PT Emprawi to Prabumulih Based on Revenue.

Table 4 – Jakarta Office Allocation 2011
A) Allocation of Total Cost Jakarta Office to each Company (Rp)

Description	PT. MBA	PT. Prabuvijaya	PT. Emprawi
Allocation Percentage of Total Cost to each company (%)	50%	10%	40%
Allocation of Total Cost to each company (Rp)	1,194,914,413	238,982,883	955,931,530

B) Jakarta Office Allocation of PT Emprawi to Prabumulih Based on Revenue.

Description	PT. Emprawi		Total
	Prabumulih	Jambi	
REVENUE (Rp)	1,740,449,700	823,729,200	2,564,178,900
Allocation of Total Cost - Jakarta Office (Rp)			955,931,530
Allocation Percentage Based on Revenue (%)	68%	32%	100%
Jakarta Office Allocation Cost to Prabumulih ard Jambi (Rp)	648,843,474	307,088,056	955,931,530

Cost Classification (Fixed & Variable Cost Insertion)

All elements of total costs have been classified into variable and fixed cost with the following results:

Table 5- Total Cost based on Variable and Fixed Classification for the year of 2010 and 2011

TOTAL COST	2010			2011		
	Amount Rupiah			Amount Rupiah		
	Variable	Fixed	Total	Variable	Fixed	Total
A.DIRECT COST						
1 Direct Material	0	0	0	0	0	0
2 Direct Labor						
Staff:						
Salary	16,591,250	49,775,750	66,367,000	23,387,106	62,161,819	85,549,225
THR Bonus	0	2,500,000	2,500,000	0	2,500,000	2,500,000
Meal Allowances	11,813,500	35,437,500	47,250,000	15,881,750	47,643,750	63,525,000
Total Staff Costs	28,404,750	87,712,250	116,117,000	39,268,856	112,305,569	151,574,225
Supervisor:						
Salary	0	12,500,000	12,500,000	0	34,000,000	34,000,000
THR Bonus	0	3,000,000	3,000,000	0	3,000,000	3,000,000
Meal	1,320,000	13,320,000	14,700,000	1,820,000	16,380,000	18,200,000
Transport Allowance	0	1,600,000	1,600,000	0	5,400,000	5,400,000
Tax PPH 21	0	0	0	0	524,210	524,210
Total Supervisor Costs	1,320,000	31,420,000	34,800,000	1,820,000	45,354,710	47,174,710
Total Direct Labor	29,774,750	126,142,250	155,917,000	40,088,856	167,659,279	207,748,435
%	20%	80%	100%	20%	80%	100%
3 Overhead						
Security Policeman	0	34,000,000	34,000,000	0	86,000,000	86,000,000
Electricity	3,980,650	1,412,500	4,393,150	3,511,711	1,695,000	5,206,711
Staff Travelling	11,440,000	0	11,440,000	3,350,000	0	3,350,000
Car Maintenance	11,274,535	8,000,000	19,274,535	32,007,500	8,000,000	35,007,500
Field Examination						
Accomodation	19,200,000	0	19,200,000	64,150,000	0	64,150,000
Storage Maintenance	0	3,078,000	3,078,000	13,766,500	2,000,000	15,766,500
Depreciation of Assets	0	68,409,402	68,409,402	0	93,962,536	93,962,536
Total Overhead	42,495,175	101,899,902	148,395,077	116,185,711	147,257,536	253,442,747
%	30%	70%	100%	40%	60%	100%
TOTAL A	72,269,425	228,042,152	305,312,077	150,273,267	309,917,415	460,190,682
%	70%	40%	100%	30%	70%	100%
B.INDIRECT COST						
1 Administration						
Stationary and Printing	6,676,900	0	6,676,900	13,834,750	0	13,834,750
Bank Administration	0	472,500	472,500	0	520,000	520,000
Bid Bond and						
Performance Bond	0	0	0	4,000,000	0	4,000,000
Business Permits and						
Licenses	0	11,675,000	11,675,000	0	14,375,000	14,375,000
Miscellaneous/Social						
Contribution	0	5,612,400	5,612,400	0	8,344,892	8,344,892
Total Administration	6,676,900	25,214,900	31,391,800	17,834,750	23,289,892	41,123,642
%	20%	80%	100%	40%	60%	100%
2 Jakarta Overhead Allocation	104,373,483	156,560,171	260,933,654	259,537,390	389,306,084	648,843,474
%	40%	60%	100%	40%	60%	100%
TOTAL B	111,050,383	181,775,071	292,325,454	277,372,140	412,595,976	689,967,116
%	40%	60%	100%	40%	60%	100%
TOTAL A+B	183,319,787	410,317,345	597,637,531	427,645,407	722,513,391	1,150,158,798
%	30%	70%	100%	40%	60%	100%

Based on Table 5 above, Total Cost in 2010 represented 30% of Variable Cost and 70% of Fixed Cost. Total Cost in 2011represented 40% of Variable Cost and 60% of Fixed Cost.

Unit Cost Calculation

Unit Cost is calculated based on Total Direct and Indirect Cost incurred in the business divided by total volume m2 for the years 2010 and 2011, based on Table 6 below:

Table 6 - Unit Cost Calculation

DESCRIPTION	2010	2011
A. DIRECT COST		
1.Direct Material	0	0
2.Direct Labor	155,917,000	207,748,435
3. Overhead	149,395,077	252,442,747
B. INDIRECT COST		
1. Administration	32,391,800	41,123,642
2. Jakarta Overhead Allocation	260,933,654	648,843,474
TOTAL A+B	598,637,531	1,150,158,298
Total Volume m2 for the year	7,650	53,850
Unit Cost per m2 in Rupiah	78,253	21,359

The above Unit Cost of Rp. 78.253 per m2 in 2010 significantly dropped to Rp. 21.359 per m2 in 2011 because the number of storage rented in 2011 increased by 6 times to 53.850 m2 from 7.650 m2 in 2010.

Recapitulation Of Cost Analysis

The following Total Revenue, Total Costs, Total Margin and Total Volume in the Table 7 below can help describing Average Unit Price, Average Unit Cost and Average Unit Margin cost.

Table 7 – Recapitulation of Cost Analysis

DESCRIPTION	2010	2011
Total Revenue (Rp)	245,538,000	1,740,449,700
Total Costs (Rp)	598,637,531	1,150,158,298
Total Margin (Rp)	(353,099,531)	590,291,402
Total Volume (m2)	7,650	53,850
Average Unit Price (Rp)	32,096	32,320
Average Unit Cost (Rp)	78,253	21,359
Average Unit Margin (Rp)	(46,157)	10,962

Break Even Point (BEP)

BEP calculation for the year 2010 and 2011:

- 2010: BEP (m2 day) = Rp. 410.317.745 / (Rp. 32.096 - Rp. 24.617) = 54.859 m2
- 2011: BEP (m2 day) = Rp. 722.512.891 / (Rp. 32.320 - Rp. 7.941) = 29.637 m2

The Company should rent out the storage facilities amounting to 54.859 m2 in 2010 to achieve BEP because the Company generated a very small Average Contribution Margin of Rp. 7.379. While in 2011, the Company only required 29.637 m2 to reach BEP with a significant Contribution Margin of Rp. 24.379.

Table 8 - Break Even Point (BEP) Calculation

Description	2010	2011
Total Fixed Cost (Million Rp)	410	723
Total Variable Cost (Million Rp)	188	428
Volume (m2 per day)	7,650	53,850
Unit Price (Rp/m2 day)	32,096	32,320
Average variable cost (Rp/m2 day)	24,617	7,941
Average fixed cost (Rp/m2 day)	53,636	13,417
BEP (m2 day)	54,859	29,637
Full capacity (m2 day)	86,400	115,200

The Company should rent out the storage facilities amounting to 54.859 m2 in 2010 to achieve BEP because the Company generated a very small Average Contribution Margin of Rp. 7.379. While in 2011, the Company only required 29.637 m2 to reach BEP with a significant Contribution Margin of Rp. 24.379

The Company had the total available space capacity amounting to 86.400 m2 (320 x 270 days) in 2010, but the actual rent was 7.650 m2, which only 14% of volume from BEP, therefore the company suffered negative result. However, in 2011, the total actual rent was 53.850 m2, 181% above BEP volume and generated a significant positive result to the Company, even though only 48% space was rented compare to available space capacity 115.200 m2 (320 x 360 days). For the Company who is just in the business for 2 years, it is considered very good.

Conclusions and Recommendations

Conclusions

The following are conclusions to answer the questions in problem identification:

1. PT. Emprawi with allocation ratio amounting to 40% incurred in Jakarta office. After that, PT. Emprawi allocates such portion of Jakarta Office cost to Prabumulih and Jambi sites using revenue basis. Allocation of Jakarta Head Office for 2010 amounting to Rp. 260.933.654 and for 2011 was Rp. 648.843.474.
2. Total Rental Revenue for the year 2010 amounting to Rp. 245.538.000 with total volume of 7.750 m2 resulting average rental revenue per m2 per day amounting to Rp. 32.096 and for the year 2011 amounting of Rp. 1.740.449.700 with total volume of 53.850 m2 resulting average rental revenue per m2 per day amounting to Rp. 32.320.
3. Based on cost classification, in 2010 Total Cost represented 30% of Variable Cost and 70% of Fixed Cost. In 2011, Total Cost represented 40% of Variable Cost and 60% of Fixed Cost.
4. Based on actual cost and rented m2, Unit Cost for each year as follows:

   2010:
   Unit Cost = Rp. 598.637.531/ 7,650 m2= Rp. 78.253
   2011:
   Unit Cost= Rp. 1.150.58.298 / 53,850 m2=Rp. 21,359

5. The Company resulted negative Contribution Margin in 2010 amounting to (Rp. 353.099.531) and positive Contribution Margin in 2011 amounting to Rp.. 590.291.402. This is because the Company started the rental business in April 2010 therefore the unit cost of the rental per day was so high because rental unit (volume) in 2010 amounting 7.750 m2 was not enough to cover total costs. The average selling price of Rp. 32.096 per m2 per day charge to customer was relatively high, however the low rental volume has resulted negative margin. In 2011, the Company made positive margin because the Company was able to sell total rental volume of 53.850 m2 and average selling price of Rp. 32.320 per m2 per day similar to year 2010.
6. Break-even point calculation has been made to show how much volume (m2 per year) should be sold in year 2010 and 2011. For 2010, the BEP amounting to 54.859 m2 was so high because the Company spent high fixed and variable costs with low rental volume amounting to 7.650 m2. For 2011, the BEP amounting to 29.637 m2 was significantly low compared to year 2010 (54.859 m2) because the Company spent high fixed and variable cost with high rental volume amounting to 53.850 m2.

Recommendations

The following are recommendations based on the cost analysis discussed in the previous chapters:

1. The Company uses manual recording to record all costs and rental storage revenues.
   Recommendation: Based on the growth of the business, the Company should improve cost information system that enhances a proper cost identification and classification.
2. The Company started its storage rental business since April 2010 and has rented 7,650 m2 in 2010 and 53,850 m2 in 2011. Those rentals were below the available spaces amounting to 86.400 m2 in 2010 and 115.200 m2 in 2011.
   Recommendation: The Company should increase the rental in upcoming years by hiring a marketing manager.
3. The Company did not establish a basis for Jakarta Office allocation.
   Recommendation: The Company should establish the basis for Jakarta Office allocation using the proper basis such as revenue, man-hour, office/storage space meter, etc.

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