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**IMPROVING BUSINESS SYNERGY BETWEEN PT. KRAKATAU STEEL (PERSERO),
Tbk AND PT. KRAKATAU WAJATAMA USING BY PRODUCT OF BILLET STEEL
PLANT TO INCREASE CONSOLIDATED PROFIT**

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Abstract—PT.Krakatau Wajatama is subsidiary 100% owned by PT.Krakatau Steel (Persero) Tbk, doing business in production and distribution steel reinforcing rebars. Marketed using marking “KS”, the product having strong positioning as a steel reinforcing rebars which can lowering risk the building structure damaged impacted by fire and earthquake disasters. Market area are covered jabodetabek, banten, west jawa and parts of sumatera islands. PT.Krakatau Wajatama have no upstream of raw material production facility and having limitation in production capacity and product variances resulted. Facing with those constraints, how PT.Krakatau Wajatama can increase its profit as well as consolidated profit for PT.Krakatau Steel (Persero) Tbk. The final project starts by conducting value chain analysis of entire flow activities in PT.Krakatau Wajatama and main activity flow in Billet Steel Plant PT.Krakatau Steel (Persero) Tbk, and PT.Delco Prima Pasific, to find out opportunity to increase profit. The analysis finds an opportunity to increase profit through improving business synergy between PT.Krakatau Steel (Persero) Tbk and PT.Krakatau Wajatama using byproduct of Billet Steel Plant PT.Krakatau Steel (Persero) Tbk. Furthermore the project is collecting primary data which are production volume and transfer price of byproduct Billet Steel Plant PT.Krakatau Steel (Persero) Tbk, join production fee in PT.Delco Prima Pasific and product selling price of PT.Krakatau Wajatama, and conducting simulation using Microsoft Excel 2007 upon every possible alternatives solution to carry out best alternative. The simulation shows that synergy sales alternative between PT.Krakatau Steel (Persero) Tbk and PT.Krakatau Wajatama is giving potential of increasing in consolidated profit with total amount Rp.861.003.983,- per month, which is the highest value compares to other alternative. Therefore the project proposed this alternative as business solution.

Key Word: Krakatau Wajatama, value chain analysis, by product, consolidated profit.

1. Introduction

PT.Krakatau Wajatama was established on July 24, 1992. Its share is 100% owned by PT.Krakatau Steel (Persero) Tbk, with engaged in the business of production and distribution steel reinforcing bars and steel profile for infrastructure, construction and manufacturing industries, with production capacity 150,000 ton per year, respectively. Market orientation is domestic market, which still limited covers an area of Jakarta, Bogor, Depok, Tangerang, Bekasi (Jabodetabek) and parts of the island of Sumatra. The distribution channel of the company product through distributors, contractors or direct to retail customer.

Company's main activities are processing raw materials steel billet with standard length 6,9 and 12 meters into finished products with size from 13 mm up to 32 mm. The sources of raw materials were from PT.Krakatau Steel (Persero) Tbk and import.

There are two main constraints facing by PT.Krakatau Wajatama that are:

1. The raw material is the key success factor in determining sustainable competitive advantage in steel industry. Since it does not have raw material production facilities then PT.Krakatau

Wajatama has to purchase it from other companies. The main supplier of raw material to PT.Krakatau Wajatama is PT. Krakatau Steel (Persero) Tbk and import from other countries.

2. The bar mill of PT.Krakatau Wajatama having limitation which it cannot producing steel reinforcing bars in 8mm, 10mm, and 12mm diameter. To fulfill customer requirement for complete full set of product variance ranges from 8mm up to 32 mm, PT.Krakatau Wajatama conducting joint production with PT.Delco Prima Pasific in producing steel reinforcing bars in 8mm, 10mm, and 12mm diameter.

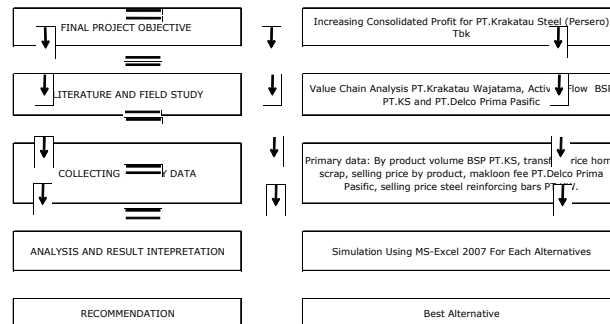
Facing to those constraints how does PT.Krakatau Wajatama can create opportunity to increase its profit and at the same time also contribute to increase consolidated profit for PT.Krakatau Steel (Persero) Tbk?

2. Business Issue Exploration

The basic concept of this final project is aim to increasing value added or consolidated profit for Krakatau Steel Group, which are PT.Krakatau Wajatama and PT.Krakatau Steel (Persero) Tbk. The final project starts by conducting value chain analysis of entire flow activities in PT.Krakatau Wajatama and main activity flow in Billet Steel Plant PT.Krakatau Steel (Persero) Tbk, and PT.Delco Prima Pasific, to find out opportunity to increase profit.

The final project collects relevant primary data which are production volume and transfer price of Billet Steel Plant PT.Krakatau Steel (Persero) Tbk, join production fee in PT.Delco Prima Pasific and product selling price of PT.Krakatau Wajatama, and conducting simulation using Microsoft Excel 2007 upon every possible alternatives solution to carry out best alternative which is alternative which provide the highest value added as a business recommendation. Schematically the final project described in following table:

Table 2.1: Final Project Conceptual Framework



BSP PT.KS = Billet Steel Plant PT.Krakatau Steel (Persero) Tbk
 BM PT.KW = Bar Mill PT.Krakatau Wajatama

PT.Krakatau Wajatama

Using value added analysis as a guideline to explore entire those activities mentioned above, detail flow main activities of PT.Krakatau Wajatama can explained as follows:

Inbound logistic

Raw material is purchased under Franco term condition which received at billet stock yard. Especially for the raw material imported, it is purchased under Cost and Freight (CFR) term which received in Cigading sea port, which then pick up by trucking to billet stock yard.

The billet stock yard completed by two gentry cranes to unload and upload the billet from truck to billet stock yard and transfer to billet wagon. At the billet stock yard, main activity is cutting billet into specified shorter length which then picks up to the billet wagon for transfer into mill.

Operations

The operation activities start by discharge the billet from wagon into reheating furnace. In the reheating furnace the billet was burn in temperature 1,150 degree celcius, which then being pushed out from the reheating furnace and forged in rolling stands becoming steel reinforcing rebars.

At the finishing process of operation, steel reinforcing rebars being cut into standard length 12 meters, conducted quality check and being strapped bend with wire for packaging.

Outbond logistics

The outbond logistics activities start by picked up the finishing product into wagon and transfered it into warehouse. In the warehouse, the finish product then discharge into finish goods stock yard by the cranes, which placed separately in order of the particular size.

When the sales orders are gained from the customer, sales department will release shipment order document to the warehouse. The warehouse officers upload the finsh goods using cranes into the truck for shipment to the customer.

Marketing and sales

PT.Krakatau Wajatama delivers its product to the customer using two main distribution channels which are through distributor or agen and direct sales to retail and contractor customer. Distibutor and retail customer submit their sales inquiry to the sales forces, and for contractor’s customer the sales inquiry usually gained after the sales forces win the bidding process.

Marketing and sales activities start by received the sales inquiry from the customer, and making negotiation for the pricing. Once the transaction is deal, the sales forces than prepare the sales contract for signing by authorized personnel. After sales contract completing, sales forces release delivery order and invoice to the customer.

The company is promoting its product through the company website, product catalogue, and yellow pages. The company also put the sign board at the project that using company product as advertising.

Services

PT.Krakatau Wajatama also provides sales service to its customer. This activity usually related to technical assistance giving by the company to the customer. Proper end used of product application is the most likely required by the customer.

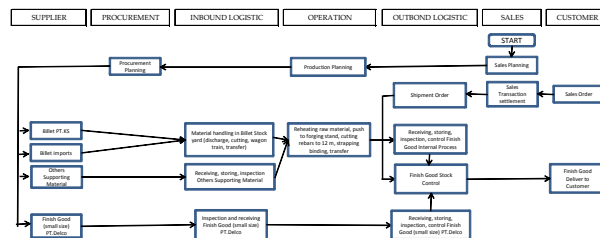


Figure 2.3: PT. Krakatau Wajatama’s main primary activities

Billet Steel Plant PT.Krakatau Steel (Persero) Tbk

As explained in previous paragraph, PT.Krakatau Wajatama getting supply of its raw material steel billet partly from PT.Krakatau Steel (Persero) Tbk. The internal business unit in PT.Krakatau Steel (Persero) Tbk which produce steel billet is billet steel plant (BSP) division.

Main activity in billet steel plant is transform raw material, which is sponge iron and steel scrap, become steel billet. Processes of production is melting sponge iron and steel scrap in Electric Arc Furnace (EAF) at 1,700 Celsius degrees temperature and then added with carbon, manganese, silicone and other additives to produce suitable desired grade of liquid (molten) steel, were are Low, Medium and High Carbon.

The molten steel are then poured in to Continues Casting Machine (CCM) as gradually lowered its temperature to 1,200 Celcius degrees with spraying of water, and casting suitable to the dimensions size of the steel billet desired.

The steel billet then distributed to the wire rod mill division of PT.Krakatau Steel (Persero) Tbk, for further processing becoming wire rod products and PT Krakatau Wajatama as a raw material for production of steel reinforcing rebars.

As well as producing standard products of steel billet with length 6, 9 and 12 meters, Billet Steel Plant production process was technically unavoidable also produces by product that is steel billet that does not meet the standard dimensions (length), which is below 6 metres length. This by products was then cut into 1 meter length, for later recycle as a raw material steel scrap (home scrap) in billet steel plant it self.

The flow of production and distribution of billets steel plant PT.Krakatau Steel (Persero) Tbk are schematically as shown below:

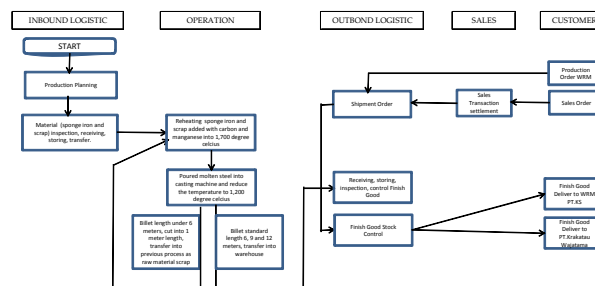


Figure 2.4: Billet steel plant PT. Krakatau Steel (Persero) Tbk main activities

PT.Delco Prima Pasific

While to overcome the limitations of production capacity and variability of the product resulted, especially for the small size steel rebars which is 8mm, 10 mm and 12mm diameter, PT.Krakatau Wajatama conducting joint production cooperates with PT.Delco Prima Pacific.

PT.Delco Prima Pacific is private company located at cikande serang. Established in 1997, PT.Delco Prima Pasific operates bar mill with annual capacity around 70.000 tonnes. As a rebars producer, its production process is quite similar with bar mill of PT.Krakatau Wajatama.

The main activity in the production process in steel mills of PT.Delco Prima Pacific done by cutting the length of a standard steel billet to be an effective length which suitable to reheating furnace specifications and production program.

Slightly different from the specification of reheating furnace of PT.Krakatau Wajatama, effective cut length of steel billet in PT.Delco Prima Pacific is 1.8 up to 2 meters. The steel billet then push in to the reheating furnace to be heated with the temperature up to 1,150 ° Celcius degrees, then to forging roll becomes steel reinforcing bars.

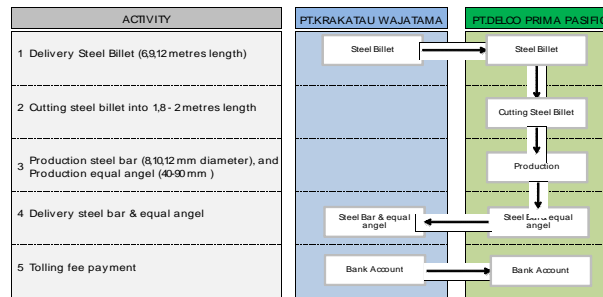
Basically, based on joint production (makloon) scheme agreement between PT.Krakatau Wajatama

and PT.Delco Prima Pacific, makloon activities start by delivery steel billet with standard length 6, 9 and 12 meters from PT.Krakatau Wajatama to PT.Delco Prima Pacific.

Next in its production process, PT.Delco Prima Pasific cutting the steel billet into 1,8 up to 2 meters length accordance with its reheating furnace, then forged roll become steel reinforcing bars suitable with the diameter size ordered by PT.Krakatau Wajatama. After completing the production process, PT.Delco Prima Pasific delivers steel reinforcing bars product to PT.Krakatau Wajatama, and getting tolling fee as a return.

Flowing diagram for tolling scheme activities between PT.Krakatau Wajatama with PT.Delco Prima Pasific, figure out as follows:

Table 2.5: Tolling Scheme Between PT.Krakatau Wajatama and PT Delco Prima Pasific



As well as producing steel reinforcing bars in fulfillment of makloon scheme to PT.Krakatau Wajatama, PT Delco Prima Pacific also producing and distributing steel reinforcing bars for their own customers.

The flow of main activities at PT.Delco Prima Pasific described as follow:

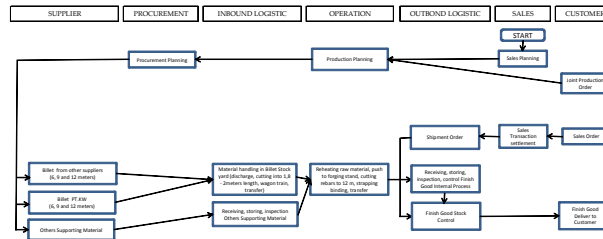


Figure 2.5: PT.Delco Prima Pasific main activities

According to its technical spesification of reheating furnace, PT.Delco Prima Pasific required activities in cutting steel billet from length 6, 9 and 12 meters become 1,8 up to 2 meters. This activity provides an opportunity for PT.Krakatau Steel (Persero) Tbk to get value added from by product of billet steel plant which is steel billet with length under 6 meters.

2.3 CONCLUSION

Based on the conceptual framework and business situation analysis described previously leads to conclusion that business synergy between PT.Krakatau Steel (Persero) Tbk and PT.Krakatau Wajatama can be improved through the optimalization of use of by product (steel billet with length below 6 meters) of Billet Steel Plant PT.Krakatau Steel (Persero) Tbk.

The particular steel billet with length below 6 meters cannot be used as raw material in PT.Krakatau Wajatama, but under joint production “tolling” scheme between PT.Krakatau Wajatama and PT.Delco Prima Pasific, it can be used as raw material in PT.Delco Prima Pasific to produce prime

quality standard of steel reinforcing rebars. Schematically the comparison of flow material before and after the proposal can be shown below:

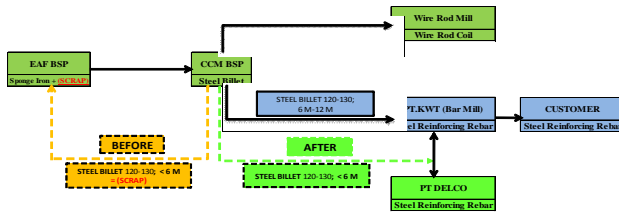


Figure 2.6: Proposed Flow of Material Steel Billet

3. Business Solution

Based on data obtained from Billet Steel Plant Division of PT Krakatau Steel (Persero) Tbk, the volume of by products with a length of less than 6 meters during the first quarter 2013, are as follows:

Tabel 3.1: Volume By-Product Steel Billet
(Source's PT.KS)

MONTH	ITEM	TOTAL (In ton)
January	Saleable	262.434
	Reject (scrap)	35.221
	Total Excess	297.655
February	Saleable	194.857
	Reject (scrap)	8.491
	Total Excess	203.348
March	Saleable	205.293
	Reject (scrap)	21.313
	Total Excess	226.606
GRAND TOTAL	Saleable	662.584
	Reject (scrap)	65.025
	Total Excess	727.609
MONTHLY AVERAGE		242.536

By products in the form of steel billets with a length of less than 6 meters can be utilized through product recycling as raw material (home scrap), or can be sold as a raw material, either to PT. Krakatau Wajatama as a subsidiary or to other reinforcing bar manufacturers. Each of these alternatives solution of utilization of by-products described in the following paragraphs.

1. Recycle (Existing)

Krakatau Steel Management Systems sets that only those products that meet the quality standards and dimensions that can be sold to consumers. These products are always completed with mill certificate as quality assurance documents. Since billet sizes under 6 meters does not meet the standard dimensions, then the product cannot be sold to costumers because it is not completed with a mill certificate as quality assurance documents.

The by product is also technically cannot be used as a raw material in the bar mill of PT Krakatau Wajatama's. Although there are other manufacturers outside the group who need these products as raw materials, but PT.Krakatau Steel (Persero) Tbk choose not to sell it, with the consideration that it will be able to interfere with the performance of PT.Krakatau Wajatama either directly or indirectly.

This by product preferably utilized as a recycle raw material (home scrap) in the Billet Steel Plant. Based on information obtained through hone call interviews with plant accounting manager PT.Krakatau Steel (Persero) Tbk, the carrying amount of this raw materials is Rp 2.900, - per kg.

Elaborating production data of this by product and the carrying value of the raw material (home scrap) in above, then PT.Krakatau Steel (Persero) Tbk, earn monthly savings up to Rp.703.355.367,-

Rp/Kg	Tonage	Value
2,900	242.536	703,355,367

2. Sale to Other Company Outside Group

As explained in the previous paragraph, by-products can be sold to other manufacturers outside the group as a raw material. Even without completed with a mill certificate as quality assurance documents, the manufacturers is still willing to purchase it.

Based on sales data in PT.Krakatau Steel (Persero) Tbk, and phone interview with one of the manufacturers that require steel billet products with a length of under 6 meters, the selling price of these products amounted Rp.5.300,- per kg.

Elaborating production data of this by product and the carrying value of the selling price above, then PT.Krakatau Steel (Persero) Tbk, can obtain monthly added value totally Rp.1.285.442.567,-, or increasing Rp.582.087.200,- compares to recycling alternatives (existing).

Rp/Kg	Tonage	Value
5,300	242.536	1,285,442,567

3. Sinergy Sale to PT.Krakatau Wajatama

Technically the furnace of bar mill PT.Krakatau Wajatama cannot used the by-products of steel billet from PT Krakatau Steel (Persero) Tbk. But hence, based on joint production (tolling) agreement between PT.Krakatau Wajatama and PT.Delco Prima Pacific, it can be used as a raw material in PT.Delco Prima Pacific, which the furnace is technically meets with the size of the by product.

Based on the contract between PT Krakatau Wajatama and PT.Delco Prima Pacific, clauses in joint production (tolling) agreement can be summarized as follows:

- PT Krakatau Wajatama sells steel billets to PT.Delco Prima Pacific, where the steel billet is then manufactured into reinforcing bars with marking "KS", which shall be sold back to PT Krakatau Wajatama.
- PT.Delco Prima Pacific produces reinforcing bar marking "KS" with 100% yield and getting the tolling fee Rp.625,- per kg.
- PT Delco Prima Pacific must fulfill production quality standards required by PT Krakatau Wajatama

PT Krakatau Wajatama can sell the product marking "KS" in accordance with the market price premium quality standard products, since these products quality, both the chemical composition and length dimensions meet the standards set by the Indonesian government (SNI).

Based on sales data from PT Krakatau Wajatama, product selling prices for standards reinforcing bar is Rp.7.250, - per kg. Set the selling price of by product to PT.Krakatau Wajatama equally Rp.5.300,- per kg as well as to other manufacturers, then from the data above, the total consolidative value for PT.Krakatau Steel (Persero) Tbk as follows:

PT.Krakatau Steel (Persero) Tbk	Rp/Kg	Tonage	Value
	5,300	242.536	1,285,442,567
PT.Krakatau Wajatama	Rp/Kg	Tonage	Value
Sales	7,250	242.536	1,758,388,417
Raw Material	5,300	242.536	(1,285,442,567)
Makloon Fee	800	242.536	(194,029,067)
			278,916,783
Consolidated Profit			1,564,359,350

Totally value added amounting Rp.1.564.359.350,- is increasing Rp.278.916.783,- compares to sale to other manufacturers outside group alternatives.

The selection of alternative business solutions based on the value-added consolidation (profits) earned by PT. Krakatau Steel (Persero) Tbk. Alternative that generate the largest value-added consolidation recommended to be selected as a business solution.

Based on the simulation results of each alternative mentioned above, can be compared in the following table:

	ALTERNATIVE SOLUTIONS		
	EXISTING	SALE TO OTHER	SYNERGY SALE
PT. Krakatau Steel (Persero) Tbk	703,355,367	1,285,442,567	1,285,442,567
PT. Krakatau Wajatama	-	-	278,916,783
Total Consolidated Value	703,355,367	1,285,442,567	1,564,359,350
Increasing Added Value Each Alt		582,087,200	278,916,783
Accumulated Increasing Added Value			861,003,983

Since the Synergy Sale alternative generate the greatest total consolidative value of Rp.1.564.359.350,-, or accumulated additional added value amounting Rp.861.003.983,-, which is higher compares to recycle alternatives (existing), the final project recommends this alternative as a business solution.

4. Implementation Plan

1. PT. Krakatau Steel Management System

As explained in previous paragraph, Krakatau Steel Management Systems sets that only those products that meet the quality standards and dimensions that can be sold to consumers. These products are always completed with mill certificate as quality assurance documents.

Since billet sizes under 6 meters does not meet the standard dimensions, then the product cannot be sold to costumers because it is not completed with a mill certificate as quality assurance documents.

Basically even as by product, the steel billet with length less than 6 meters actually meets the standard of chemical composition to produce high quality steel reinforcing rebars. Therefore Krakatau Steel Management System should be updated, so it is possible to present mill certicate as quality assurance document.

2. Transfer Pricing

Eventhough PT. Krakatau Steel (Persero) Tbk having 100% share ownership of PT. Krakatau Wajatama, but hence legally both companies are still as a separate business entity.

Good corporate governance principle should be complying implemented. Management accountability and responsibility should be declared and operationally clear, applies for arms length transaction in price setting.

Therefore both companies should be setting mechanism to set the selling price of the product fairly.

3. Optimum volume

Based on data obtained from Billet Steel Plant division, the monthly production volume of by product which produced by Billet Steel Plant are ranging from 200-250 ton per month. Since the distribution (transportation) cost for steel product for surround Jakarta area is quite high, which is ranging from Rp.50,- up to Rp.75,- per kg, then minimum volume in one batch transaction are recommending at 1.000 ton.

Implementation time frame are shown as follows:

ACTIVITY	PARTIES INVOLVED	TIME					
		Jan-13	Feb-13	Mar-13	Apr-13	May-13	Jun-13
Update Krakatau Management System	Krakatau Steel						
Transfer Pricing Mechanism	Krakatau Steel and Krakatau Wajatama						
Implementation of optimum volume	Krakatau Steel and Krakatau Wajatama						

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