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**THE DEVELOPMENT OF PT KHI'S BUSINESS MODEL TO ENHANCE SUSTAINABLE  
COMPETITIVE ADVANTAGE**

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*Abstract— This research about how PT KHI make an improvement in Business model by offering EPC (Engineering, Procurement & Construction) services to customer to gain a better profit margin. Research result suggests PT KHI to improve its Business Model in order to enhance sustainable competitive advantage. Many competitors have the same business model in industry. PT KHI should offer different business model to stay ahead and winning the competition. The research result indicate based on current condition at PT KHI, a new value proposition will increase company's profitability to enhance sustainable competitive advantage. The author proposes PT KHI to innovate its business model through new proposed Business Model Canvas.*

*Keywords; Business Strategy, Business Model, Business Model Canvas, Pipe Industry, Innovation*

## **1. Introduction**

The development of business in Indonesia has entered the era of globalization. It began with the Asean Free Trade Area (AFTA) in 2003, followed by Asia-Pacific free trade (APEC) in 2010 for developed countries, and no later than 2020 for developed countries. The business environment is so competitive that it reflects the evolving and dynamic world. It forces companies to evolve rapidly so that the company can achieve its goals and maintain the existence of performance to attain a certain level of growth. To continuously be able to meet the expectations of shareholders, management of companies should think more in longer term. In fact it means that it can be concluded that the shareholder expectations are sustainable profit. This can only be achieved if the company has a competitive advantage over its competitors.

Given these objectives, the company eventually had to have a Sustainable Competitive Advantage, not just a temporary competitive advantage. Companies should try to maintain its competitiveness in order to win the competition and keep earning profit, since the shareholders always want increasing returns. The company objectives are to achieve or obtain maximum profit or wealth of the owners of the company, maintain the viability of the company, and improve public welfare as corporate social responsibility. However, company's goals cannot always be achieved due to various constraints faced by, among others, unstable market demand especially for companies that have businesses on project basis, prices of raw materials, location of the company not/less strategic, etc.

PT KHI Pipe Industries is a subsidiary company of PT Krakatau Steel (Persero) Tbk. PT KHI engaged in manufacturing steel pipe and coating on project base business where its returns are highly volatile. The

company has a market segmentation based on product allocation, namely: Oil and Gas Pipe, Pilling Pipe, Water Pipe (Water Distribution Pipe Line), and Building Construction Pipe.

Oil & Gas segment is the primary segment which is expected to increase their profits, but market demand for Oil & Gas Pipeline is not always there all the time, and there is not easy to win the bidding. Pilling Pipe Segment have higher needs than the Oil & Gas segment, but intense competition especially from imported pipeline has much cheaper prices, and require firms to reduce costs to be more competitive. Other segment just runs to fill the lack of quantity selling in Oil & Gas segment. Each strategy in each product segment has an impact on the risk of achievement of the company's goal. If the strategy is an inappropriate manage, the company's profit is not only fluctuate, but could impact the company into a loss. It is necessary for study of business models which is applied for the company to overcome the fluctuations in company's Profitability.

## **2. Business Issue Exploration**

A growing number of companies in Indonesia at this time led to the business competition between companies that increasingly tight and competitive. This is a challenge for companies that can still survive and developed. Challenges also come from different companies with other factors, such as variations in consumer demand for quality products and services, technological developments, government policies, and the high price of raw materials which can cause high selling price. The expansion of many pipe makers will increase the excess of production and will reduce the selling prices. That may threaten consumer demand for the products produced by PT KHI Pipe Industries. This makes the company must work hard to maintain market share and consumer loyalty to their products in order to keep corporate profits and avoid losses.

In order to realize the expectations of the shareholders in the form of the stability of the company's profitability, management require creativity and innovation in planning and running the business model. The company cannot grow by itself; the company must have the right business strategy. Management plans and constructs business strategies that will run the company to support the achievement of the vision, mission and objectives. These strategies must imply in business model that will running by the company. Topics discussed in this paper will discuss the business improvement models of PT KHI Pipe Industries through Business Model Canvas developed by Alexander Osterwalder and Yves Pigneur, 2010 to see the advantages & weaknesses, opportunities & threats of the company, and what strategies should be planned and implemented in the company. The results of this research are expected to be input to PT KHI Pipe Industries in planning business strategies that can improvise a stable company profitability going forward. By stable profitability, hopefully PT KHI can achieve Sustainable Competitive Advantage.

### **Conceptual Framework**

PT KHI has formulated a long-term plan every five years, but its realization is often not as expected. It is very disappointing for the company's shareholders that expect company to increase generating profits continuously and the company has a sustainable competitive advantage. In this project, the authors will conduct the company's business model, identify problems and make proposal to correct plans in order to achieve sustainable competitive advantage.

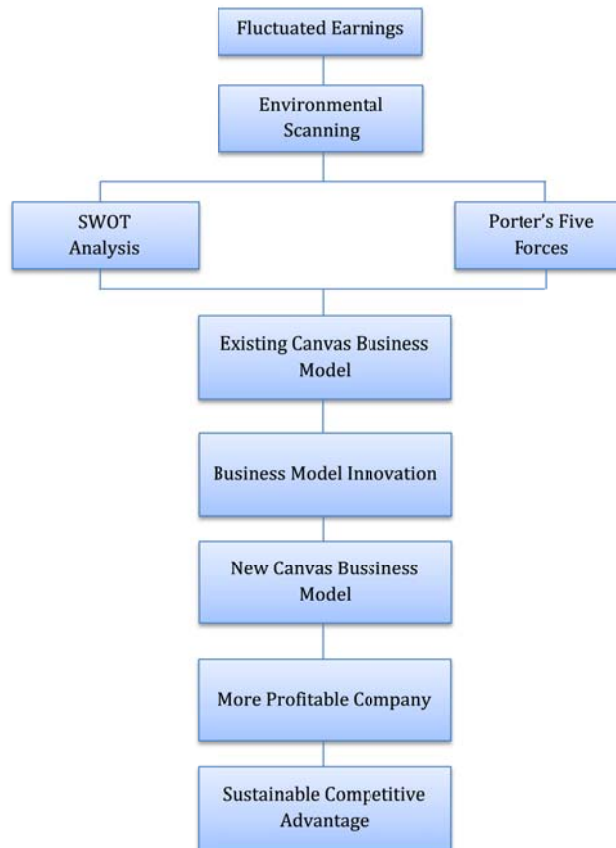
The stages of this research are;

1. Literature study and perform the conceptual formulations.
2. Doing Environmental scanning, internal analysis and SWOT analysis to look at the company's current business environment.
3. Formulate the result above in the current business model canvas to identify the factors that became the company weakness.

4. Identifying root causes analysis by using the BMC.
5. Evaluate and analyze the problems.
6. Creating a New Business Model Canvas as the proposed development.
7. Formulate the implementation Plan.

In this research process analysis, based on literature review, the map of conceptual thought is constructed as follow;

Figure 1: Map of Conceptual Thought of PT KHI Pipe Industries



From figure above, Business Model Innovation can create a more profitable company that will enhance a sustainable competitive advantage. Due to a fluctuated earning, we map the current business model in form of Business Model Canvas. After we are mapping an existing business model, we have to create a new and innovative business model. Today we found that most industries, including in pipe industries, have a dominant business model. They almost have a same business model. Today we found many choices designing new business model. We found many different business models in same industry and market. One challenge when we try to create a new business model is ignoring the status quo.

### Analysis of Business Situation

Based on the SWOT analysis, the condition PT KHI Pipe Industries is:

1. Strength
  - Strong Company Image
  - Support Raw PT KHI KS and convenient location, and close to the port.
  - Access includes domestic and regional markets.
  - Integrated Pipe Mill is capable of producing large diameter spiral pipe and a length of over 40 meters

2. Weakness
  - Demographics HR KHI with the majority of employees aged over 46 years.
  - Dependence raw materials from a supplier such as limitations Working Capital
  - On-time delivery for large-scale projects is still low
  - Cost of Goods Sold relatively high
3. Opportunity
  - Growing use of single length pipe pile for infrastructure projects (ports and jetties) in the region.
  - Increased potential for offshore Oil and Gas Projects that require ERW pipe / large-diameter longitudinal coating application and its requirements.
  - The replacement of distribution pipes Oil and Gas.
  - Opening up the use of steel pipes for the construction of high rise building.
4. Threat
  - The tendency in the procurement pipeline project through EPC Company
  - Increasing the capacity and facilities of major competitors
  - The reluctance of users using spiral pipe and DNV certificate of compliance requirements for offshore applications
  - Erosion of the use of steel pipes by product substitution (HDPE, PVC, Concrete Pipe)

From the Porter's five forces model we found that the market for oil & gas segment, Piling Pipe and coating still attractive, but for other segment Building Construction and Water Pipe less attractive. The problem in piling pipe is too many low cost competitors, especially from imported pipe.

We can see the market attractiveness and business strength every segment of pipes. In this chart below describes how attractive is oil and gas segment which is also give a higher profit margin compare to other segment.

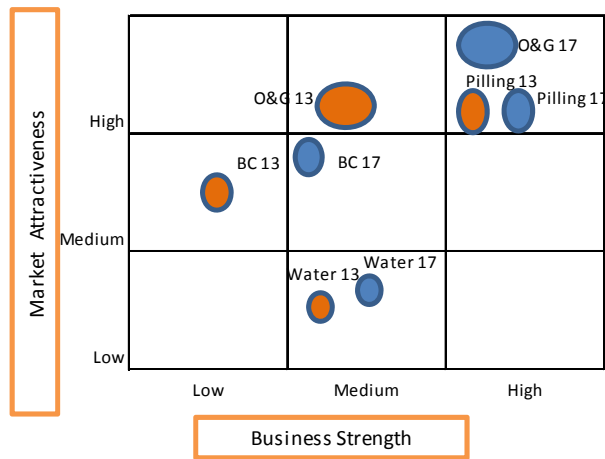


Figure 2. Matrix for GE Oil & Gas Pipe, Piling Pipe, Water Pipes (2013 and 2017)

After we know attractiveness of market and also know the strength & weakness and opportunity and threat of company, we map the business model in form of Business Model Canvas. The result as follow;

<p><b><u>Key Partners</u></b></p> <ul style="list-style-type: none"> <li>• Krakatau Steel as a parent company</li> <li>• Coopetition with Other Pipe Manufacturer</li> </ul>	<p><b><u>Key Activities</u></b></p> <ul style="list-style-type: none"> <li>• Procurement</li> <li>• Production</li> <li>• Delivery</li> </ul>	<p><b><u>Value Propositions</u></b></p> <ul style="list-style-type: none"> <li>• Good quality Bare Pipe &amp; Coated Pipe</li> <li>• One stop Pipe Solution (complete pipe solution in one place)</li> <li>• A good Delivery Time</li> <li>• Good Brand Image (PT Krakatau Steel Group)</li> </ul>	<p><b><u>Customer Relationships</u></b></p> <ul style="list-style-type: none"> <li>• Technical Assistant</li> <li>• After Sales Services</li> </ul>	<p><b><u>Customer Segments</u></b></p> <ul style="list-style-type: none"> <li>• Oil &amp; Gas Pipe</li> <li>• Building &amp; Construction Pipe</li> <li>• Pilling Pipe</li> <li>• Water Pipe</li> </ul>
	<p><b><u>Key Resources</u></b></p> <ul style="list-style-type: none"> <li>• Integrated Pipe Mill</li> <li>• Raw Material</li> <li>• Brand Image</li> <li>• Manufacture Experience</li> <li>• Human Resource Experience</li> </ul>		<p><b><u>Channels</u></b></p> <ul style="list-style-type: none"> <li>• Direct/End User Sales</li> <li>• Others Manufacturer / Consortiums</li> <li>• Constructors</li> <li>• Distributors</li> </ul>	
<p><b><u>Cost Structure</u></b></p> <ul style="list-style-type: none"> <li>• Production Cost</li> <li>• Sales Expenses</li> <li>• Delivery Expenses</li> <li>• General Expenses</li> <li>• Others Expenses</li> </ul>			<p><b><u>Revenue Streams</u></b></p> <ul style="list-style-type: none"> <li>• Steel Pipe Sales</li> <li>• Coating &amp; Painting Service Sales</li> <li>• Joint Operation revenues</li> </ul>	

Figure 3. Existing Business Model Canvas

From the current Business Model Canvas, actually PT KHI still has a fluctuated P/L. By the SWOT analysis above, also we find out that current PT KHI's Business Model have a weakness. One of the most inflated is one resource of raw material (HRC) from parent company. Even have a good quality; the product from parent company has a higher price from its competitors, especially from imported product. In this case, PT KHI should begin to analyze whether remain using generic strategy of differentiation or come to low cost strategy.

With the identic business model with its competitor but PT KHI must use only the parent company raw material, PT KHI will less competitive. At the end of the day, company's profit will remain fluctuated according to the market price of raw material. When the world market higher than local, PT KHI will generate profit. In contrary, when market price is lower, PT KHI will generate loss since PT KHI cannot import raw material. The fluctuated profit earned, mostly defined by inflexibility acquisition of raw material which is the major cost of product. By this identification above, we conclude the issues that most affect the company's income is primarily:

- PT KHI should reformulate its strategy since current strategies do not produce the maximum sustainable profits and make PT KHI has a Sustainable Competitive Advantage.
- Even the market share were increased, the profit remain unstable due to increase in competition with similar products.

- Sales orders are fluctuating due to the Oil and Gas segment is a mainstay to earn huge profits that are not always earned.
  - Value proposition that exist today are very similar to the competitors of PT KHI.
- This made it difficult to maintain PT KHI consumers, given the limitations of PT KHI as one of the outlets of PT Krakatau Steel which should always bought raw materials from the parent company. At the price of steel imports down, the competitor PT KHI has the advantage of getting cheaper raw materials.

### **3. Business Solution**

According to the results of scanning the SWOT analysis and Porter's Five Forces Model which is also set forth in the Current Business Model Canvas, the company is currently running a business strategy for multiple customer segments at once. The policy was taken because the company's risk of fluctuating revenues and profit if focus on specific segments. In every segment above, PT KHI relies heavily on the construction company. The project owner usually relies on EPC (Engineering, Procurement & Construction) company. In this case the higher margin goes to EPC Company, since they have a tendency to bargain the prize to maintain their desired margin level.

By the explanation above, PT KHI should offer new value proposition to costumer industry in order to obtain a higher margin in its sales. In addition to current value proposition by PT KHI, the new value proposition is the service as an EPC Company. In this case, PT KHI offers to its customer a new service that company can do as a one stop solution for EPC specialized in pipeline. By this arrangement customer will get a lower cost since PT KHI as EPC Company produce the pipe itself. Compare to other EPC company, PT KHI can compete since have own pipe production facilities and more over PT KHI more flexible by using buffer stock that could be have a lower production cost. As describe above, by this scheme, PT KHI will earn more profit. No more squeezing the profit from EPC Company.

The differentiations of this new service from customer point of view are as follow;

- The customer convinced that they will have a good quality of pipe, no room for mix the pipe with other quality. In EPC Company they could mix the pipe with imported pipe which is cheaper.
- Guaranteed that the project will due on time schedule since KHI produce the pipe itself. Other EPC Company much depend on pipe manufacturer. If the pipes come late, then the entire project will delay.
- Easy to complain and direct to PT KHI as pipe manufacturer when have a defect in the project. When use other EPC Company that doesn't have pipe manufacture they have to wait until the EPC Company contact to pipe manufacturer.
- One contact person in terms of after sales service. The pipe manufacturer and EPC Company in one place. The responsibility only one company.

The differentiations of this new service in the point of view competitors are as follow;

- The other pipe manufacturer have only revenue from selling pipes and all accessories, such as coating, painting etc. PT KHI adds an EPC service that no single pipe manufacturer has this service.
- The other EPC Company doesn't have pipe manufacture like PT KHI. So only KHI will have both services, EPC and pipe manufacture.

For the early stage, PT KHI can collaborate with PT Krakatau Engineering as a partner in consortium in order to learn the business. After have enough experience, and PT KHI has a capability to run an EPC Company, PT KHI can do it by itself. The EPC service become a main business and PT KHI can earned more profit.

In addition to current value proposition by PT KHI, the new value proposition is the service as an EPC Company. In this case, PT KHI offers to its customer a new service that company can do as a one stop solution for EPC specialized in pipeline. By this arrangement customer will get a lower cost since PT KHI as EPC Company produce the pipe itself. Compare to other EPC company, PT KHI can compete since have own pipe production facilities and more over PT KHI more flexible by using buffer stock that could be have a lower production cost. As describe above, by this scheme, PT KHI will earn more profit. No more squeezing the profit from EPC Company.

PT KHI use offer-driven business model as an epicenter business model innovation. This innovation create new value proposition that affect other business model building blocks.

The proposed Business Model Canvas will be as follow;

<p><b><u>Key Partners</u></b></p> <ul style="list-style-type: none"> <li>• Krakatau Steel as a parent company</li> <li>• Coopetition with Other Pipe Manufacturer</li> <li>• <b>Krakatau Engineering (EPC company)</b></li> </ul>	<p><b><u>Key Activities</u></b></p> <ul style="list-style-type: none"> <li>• <b>Engineering &amp; Construction</b></li> <li>• Procurement</li> <li>• Production</li> <li>• Delivery</li> </ul>	<p><b><u>Value Propositions</u></b></p> <ul style="list-style-type: none"> <li>• Good quality Bare Pipe &amp; Coated Pipe</li> <li>• One stop Pipe Solution (complete pipe solution in one place)</li> <li>• A good Delivery Time</li> <li>• Good Brand Image (PT Krakatau Steel Group)</li> <li>• <b>EPC (Engineering, Procurement, and Construction) Service</b></li> </ul>	<p><b><u>Customer Relationships</u></b></p> <ul style="list-style-type: none"> <li>• Technical Assistant</li> <li>• <b>Supervising /Engineering</b></li> <li>• After Sales Services</li> </ul>	<p><b><u>Customer Segments</u></b></p> <ul style="list-style-type: none"> <li>• Oil &amp; Gas Pipe</li> <li>• Building &amp; Construction Pipe</li> <li>• Pilling Pipe</li> <li>• <b>EPC Service</b></li> </ul>
<p><b><u>Cost Structure</u></b></p> <ul style="list-style-type: none"> <li>• Production (included service and construction) cost</li> <li>• Sales Expenses</li> <li>• Delivery Expenses</li> <li>• General Expenses</li> <li>• Others Expenses</li> </ul>		<p><b><u>Revenue Streams</u></b></p> <ul style="list-style-type: none"> <li>• Steel Pipe Sales</li> <li>• Coating &amp; Painting Service Sales</li> <li>• <b>Engineering &amp; Construction Service</b></li> <li>• Joint Operation revenues</li> </ul>		

Figure 4. Proposed Business Model Canvas

#### 4. Implementation Plan

The new proposed Business Model Canvas stressed more on improvement of Value Proposition given by PT KHI in order to enhance more profit. From explanation in previous chapter, the new activity run by the company is new EPC activity. To come up with new BMC, PT KHI should prepare activities, that is;

1. Developing and improving Long Term Planning of the company.  
PT KHI should revise all long term planning due to any improvement in its business model. This activity will describe in new long term planning including new generic strategy to be obtained by PT KHI.
2. Improving Annual Planning (Including permit from shareholder)  
Annual planning also to be revised since there are many new activities to be performed by company in current year. Such new activities to be prepared and have an agreement from shareholder are;
  - New market segment
  - New production and service activities
  - New Organization
  - New financing scheme
  - Etc.
3. Create business collaboration with sister company (PT Krakatau Engineering).  
As an early stage, PT KHI should collaborate with sister company since have a lack of experience in EPC business. After have many experience, PT KHI could perform this service by itself.
4. Improve organization.  
PT KHI should improve its organization, as this new activity to be performed. The most important sectors are in marketing and production area. In marketing team they should learn how to manage the EPC business. In production are they having a new activities to be performed, that is engineering and construction.
5. Prepare a financing scheme with Banks.  
As a new activity, company should prepare a new financing scheme. In the current business model, company just needs a short working capital. In EPC Business Company needs more long term working capital. We have to finance from procurement of raw material, production, until construction. This working capital should be obtained from the Bank.

#### Implementation Strategy

To implement this new EPC activity, PT KHI will perform in two stages. The first stage PT KHI must collaborate with its sister company for two year. At the third year PT KHI perform the service by itself. Hopefully, after two years the employees of PT KHI have enough experience to run the business. With this strategy, PT KHI could immediately start as an EPC Company. It is saving time rather than PT KHI doing by itself. PT KE can help PT KHI how to run the business since they are already in the business for a long time. They have an experience to handle the EPC business.

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