

# Strategic Architecture to Develop Coal Business at PT XYZ

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**Abstract-** Strategic management is the accumulation of management effort and team to maximize all the resources to winning the competition in industry for long term purpose. Strategic management is an action to formulate strategy to achieve the company objectives. The purpose of this study are: (1) Analyze the current condition of PT XYZ. (2) Analyze internal factors and external factors that affect company performance. (3) Formulate strategies to survive and develop coal business at PT XYZ. The method of this research used descriptive and purposive sampling. The data analysis techniques were Internal Factor Evaluation (IFE), External Factor Evaluation (EFE), and SWOT matrix. The Strategic Architecture were formulated as blue print strategy based on the alternatives strategies and strategic challenge refers to company objectives. The result explain that, join with other miner in near location can optimize mining development that will give advantage for long term goals. Conveyor system chosen as substitute hauling truck transportation to efficient operational cost. Increase the people competencies to handle all of strategies activities is a mandatory.

**Index Terms-** External Factor Evaluation (EFE), Internal Factor Evaluation (IFE), Strategic Architecture, SWOT matrix

## I. INTRODUCTION

Coal as one of the non renewable energy sources is the third largest contributor of fossil energy sources after petroleum and gas as described in Table 1. The natural characteristics of ready-to-use coal products and does not require raw material processing systems to be finished or semi-finished materials such as oil refineries and gas is a distinct advantage for the energy industry when compared to petroleum and gas.

Table 1 *Fossil energy resources in Indonesia*

No.	Kind of Energy	Unit	Resources	Reserves
1.	Oil	Miliar Barel / Billion Barrel	7,4	3,6
2.	Gas	Trillions of Standard Cubic Feet of Gas ( TSCF )	149,3	100,3
3.	Coal	Miliar Ton / Billion Ton	124,8	32,27

Sources : *Report of Ministry of Energy and Mineral Resources (ESDM)*

The Indonesia government classifies the price of coal based on coal calorie (Kcal / Kg) with the issuance of Coal Price (HPB) marker : 7000, 6700, 6150, 5700, 5400, 5000, 4400 and 4200. In addition, the government through ministry of ESDM also issued Coal Reference Price (HBA) is a government price set for coal with calorific value of 6322 Kcal / kg. The amount of calorie value in HPB based on coal which has been dominating the coal market in Indonesia, for example coal with calorific value of 4200 kcal / kg is the coal which has been produced by PT Arutmin with ecocoal brand. PT. XYZ releases coal with calorific value of 4100 - 4200 kcal / kg so as to benchmark the selling price of PT XYZ marketing coal using HPB marker 4200 and other index such as Indonesia Coal Index (ICI) or index from Platts.

From Figure 1 the price of coal is at the lowest level in 2015 - mid 2016 then rebound to its peak in early 2017 then fall back. There is no guarantee that market conditions will not return to the worst conditions such as 2015 to 2016. Facing the condition of the price of coal that is going down, the company is required to survive and win business competition by making new breakthrough in the form of dynamic business strategy and long-term oriented.

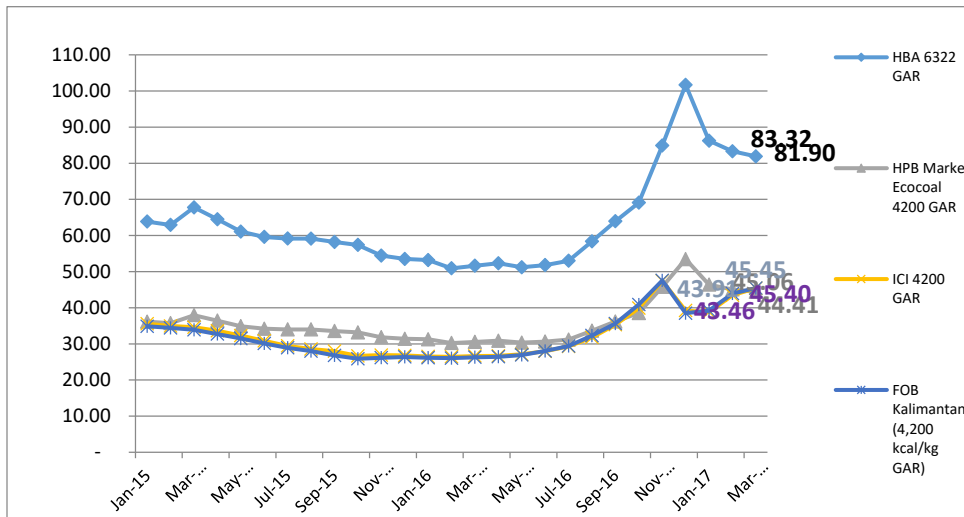


Figure 1. Coal Price Index  
 Sources : Report of Ministry of Energy and Mineral Resources (ESDM)

The shifting form of coal following the coal groove in the ground requires the company to have specific advantages such as core competence in coal mining which is different from mineral mines as well as supportive strategies to boost performance and create long-term sustainable growth. To be able to survive the company raises the volume of coal production drastically can be seen in Figure 2, so that profit can stay awake even though company margin is constantly depleted because coal price approaching production cost.

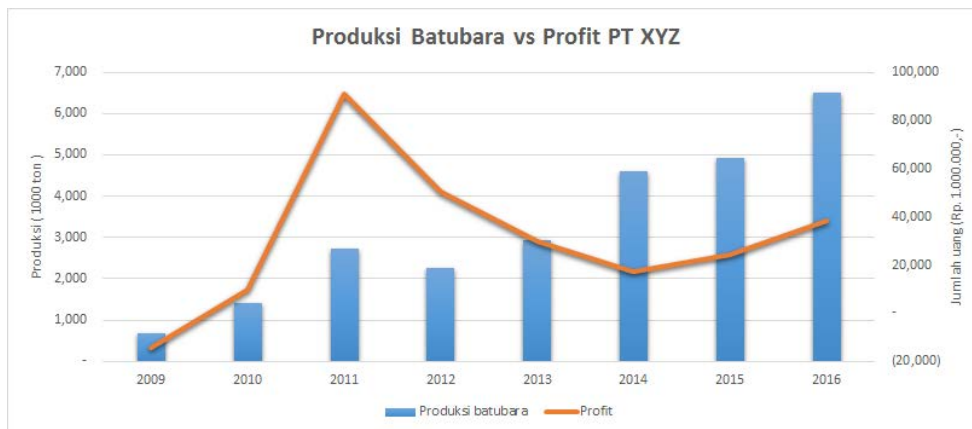


Figure 2. Coal Production vs Profit PT. XYZ until 2016

Coal as a commodity product whose price is highly dependent on market conditions is influenced by external conditions such as changes in government policy or policy changes in coal importing countries. The issue of environmental issues raised by coal importing countries from Europe and Japan is the concern of coal mining companies to ensure sustainable growth.

## II. IDENTIFY, RESEARCH AND COLLECT IDEA

The research was conducted in offices were located in Jakarta in each company office. The research will be conducted in the period of August to September 2017. Data to be used in this research are (1) primary data and (2) secondary data. Primary data obtained from result of focus group discussion (FGD) and in-depth interview with purposive sampling method.

Figure 3 shows the framework of research thinking to get appropriate company strategies. These strategies to support company for longterm life cycle.

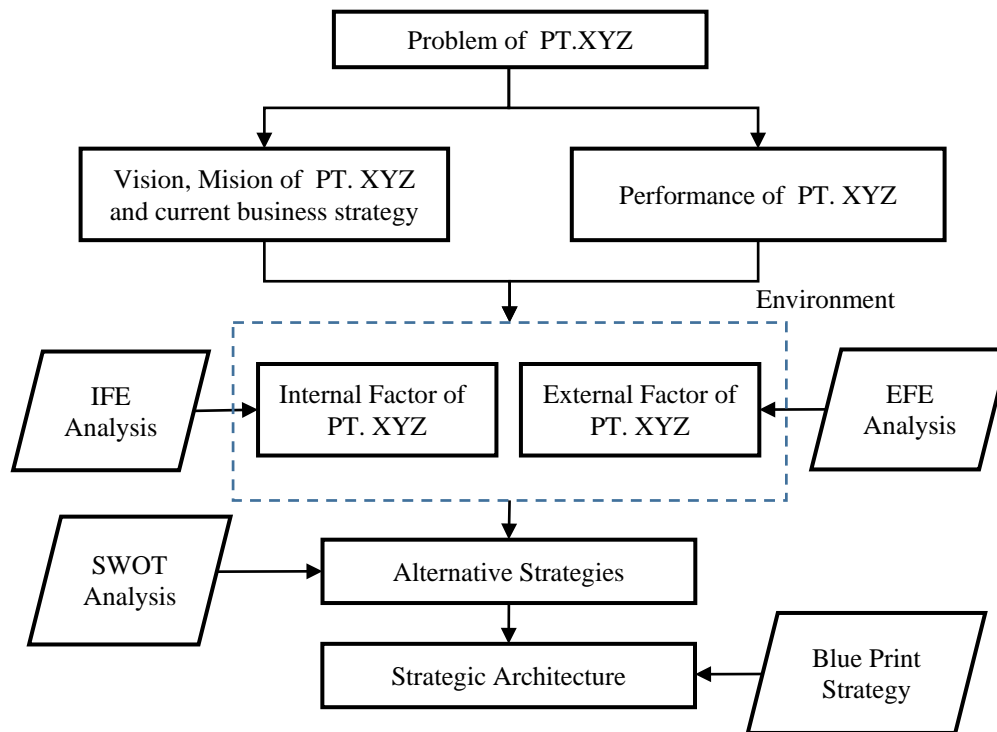


Figure 3. Framework for Research Thinking

Bruce et al.(1983) several alternative coal marketing strategies to support sales are building long term agreements with second customers building long-term agreements with traders and third building long-term commitments with short market concentration of time. Then the weight assessment of each indicator using the paired comparison method of Kinnear and Taylor (1991).

### III. RESULT AND DISCUSSION

Internal Factor Evaluation (IFE) matrix from the results of research that has been done in PT XYZ in the period August - September 2017 obtained results in Table 2. Total weighted score on the IFE matrix shows the number 3.130 greater than the average response of 2.50 it illustrates that the response of PT XYZ to strenghts and weaknesses above average. David SY (2013) namely the threat of entry of new entrants in the same industry with high profit levels will invite new players in the industry. Competition will become tighter and result in lower profits. Internal Factor Evaluation (IFE) matrix from the results of research that has been done in PT XYZ in the period August - September 2017 obtained results in Table 2.

Table 2 IFE Matrix

Indicator Internal Factor		Weighted Score
<b>Strengths</b>		
1.	Capability of Production Continuity	0.276
2.	Mining Readiness	0.239
3.	Huge Resourcess	0.220
4.	People Competency	0.214
5.	Human Resources in Organization Structure	0.208
6.	Company Reputation	0.199
7.	Sulfur Content in Coal	0.172
8.	Mining Infrastructure	0.163
9.	Lean Production	0.155
10.	Relationship with contractor	0.144
11.	Location Area	0.115
12.	Hauling Road Ownership by Third Party	0.105
13.	Owned Laboratorium	0.098

<b>Weaknesses</b>		
1.	Compliance with Standard	0.180
2.	Lack of Disposal Area	0.143
3.	Production Equipment	0.129
4.	Business Development	0.105
5.	Operation depend weather	0.102
6.	Characteristic of Low Rank Coal (Dusty, High TM, Self Combustion)	0.090
7.	Research and Development	0.073
<b>Total</b>		<b>3.130</b>

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External Factor Evaluation (EFE) matrix the result of external factor research from both PT XYZ internal respondent and verification from external respondent of PT XYZ for total weighted score on EFE matrix in Table 3. shows the figure of 2,696 which means the ability of PT XYZ to respond to opportunities and threats above average. On the highest weighted score opportunity factor on the construction of a 35,000 MW power plant in Indonesia and the lowest weighted score on overburden and interburden utilization. In the threats factor the highest weighted score on mine land compensation is constrained and the lowest weighted score of coal derivative products.

Table 3 *EFE Matrix*

<b>Indicator External Factor</b>		<b>Weighted Score</b>
<b>Opportunities</b>		
1.	35.000 MW Power plant infrastructure in Indonesia	0.240
2.	Government Regulation	0.240
3.	Mine Boundary with Other Miner	0.233
4.	Market outside China	0.215
5.	Utilization of Land after Mine closure	0.170
6.	Other Port in near Mine Location	0.154
7.	Utilization content of Over Burden and Inter Burden	0.141
<b>Threats</b>		
1.	Land Compensation	0.221
2.	Social at Surround Mining Area	0.206
3.	Mining License (IUP)	0.204
4.	Rainy Weather in Surface Mining	0.170
5.	China's Government Regulation	0.169
6.	Additional Cost by Regulation Change (LHV,LS)	0.140
7.	Greener Energy / Renewable Energy	0.118
8.	Derivative of Coal (Liquid Gas, etc)	0.075
<b>Total</b>		<b>2.696</b>

#### SWOT Matrix

It is important to gain competitive advantage and to have a product that suits the consumer's wishes with optimal support from the existing resources, said Rangkuti (2001). Boleslaw (2010) states that the resume of the SWOT analysis is to ensure compatibility between resources and conditions in the environment and the ability to take advantage of strengths and weaknesses, opportunities and threats

The SWOT matrix generates alternative outcome strategies from IFE matrix matching and EFE matrix. According Murthy (2014) the need for maintenance management is a crucial business activity and vital to maintain business and succeed the business so it must be managed with strategic. Here are each strategy according to David (2009), SWOT consists of:

##### 1. SO Strategy

Strategies are structured using the power to take advantage of opportunities. SO strategy in PT XYZ is to improve the company's image as a world-class company, foster good relations with the government, expand marketing network both overseas and domestic, make contract with PLN for coal supply, conduct research cooperation with agriculture and forestry for land use post mining. Resources consist of assets, including hardware, software, data and people, and capabilities, including daily competencies and practices according to David (2005)

2. WO Strategy

An organized strategy minimizes the weaknesses to take advantage of opportunities. The WO strategy of PT XYZ is to conduct international standardization certification, to cooperate with other miners, to improve contracts with contractors, to utilize post mining land, to make All road mine roads, improve quality control system from pit to port,

3. Strategy ST

Strategies are structured to harness the power to deal with threats. ST's Strategy at PT XYZ is Securing the land to be mined in the next 5 years, Empowering communities around the mine to support coal mining activities,

4. WT Strategy

Strategies are structured to minimize weaknesses to avoid threats. WT's strategy at PT XYZ is the Compliance of all environmental regulations around the mine and in touch with the surrounding community, Creating an efficient conveyor system from the mouth of the mine to the port, Establishing a power plant for supply to PLN South Kalimantan, Adding new coal mixing business from trading coal around IUP.

Strategic Architecture

This strategic architecture was popularized by Hamel and Prahalad (1995). The benefits of strategic architecture is to formulate a strategy into the canvas of the plan to achieve the vision and mission of the company by paying attention to the challenges that exist in the future. Hermawati et al. (2016) explained that government trough KEN (National Energy Committee) that arrange the energy olicy to use in a green environment and useful energy. There is no standard consideration in designing the strategic architecture, however the preparation of strategies is based on certain considerations such as time, achieved and the challenges to be faced as showed at Table 4.

Table 4 *Designing The Strategic Arsitekture*

<b>Goals to achieve</b>	
1.	Domestic and European market domination
2.	Diversified products
3.	Increased production to 12 million / year
4.	Sustainable growth
<b>Challenges that arise</b>	
1.	The more expensive mine land.
2.	The distance hauling the farther away.
3.	Limited disposal area.
4.	Conflict with the community around the job
5.	Alternative energy is getting cheaper.
6.	Government regulations are changing frequently.
7.	Domestic Market Obligation (DMO) is getting stronger.

We also clearly see the strategic arrangement at Table 5. It's divided into two strategies. There are gradual strategies and strategies that run regularly. These strategies will keep company on the right track to achieve goals at above. These strategies are blue print of company for long term to develop business into increasing income and to grow profit.

Tabel 5 *Divisions of strategic arrangement*

<b>Gradual strategies</b>	
1.	Improving corporate image in the coal business world as a world-class company.
2.	Expanding network marketing both abroad and in the country.
3.	Make a sales contract with PLN for supply to power plant.
4.	Hold mining cooperation with other miners in IUP boundary.
5.	Improving cooperation contracts with contractor related performance contracts Heavy equipment.
6.	Make a mining road that All weather in accordance with the budget.
7.	Secure the land to be mined for the next 5 years.
8.	Make rain water flow to the void area in the IUP area that has been completed.
9.	Establish new business unit selling coal mixing with coal trading around IUP area.
10.	Creating an efficient conveyor system to replace hauling transport by truck.
11.	Establish a power plant for supply to PLN in South Kalimantan area.

*Tabel 5 Divisions of strategic arrangement ( continued )*

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**Strategies that run regularly**

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1.	Fostering good relations with the government as a mining regulator.
2.	Conducting cooperation with agricultural and forestry institutions related to post-mining
3.	Implement international standard certification such as ISO 9000 and ISO 14000
4.	Follow and comply with all government regulations regarding licensing.
5.	Compliance to all environmental regulations for both humans and plants
6.	Increase the core competencies of the company's organization.
7.	Empower communities around the mine to support mining operations.

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In accordance with the research Pan and Scarbrough (1999) effective knowledge management known as the knowledge architecture needed to design and classify according to the level of level and framework of existing knowledge concepts.

#### Managerial Implications

From the results of the preparation of strategic architecture there are consequences to implement those strategies. Prepare budget for all activity that need investments such as mine land for 5 years, land for conveyor construction and land for power plant. Prepare skill up competencies to support new business and new process. Prepare networking system to support new business and new process. Prepare to propose license to government for new business and investments. Professionals acquisition to support new process and new business. Strategies that run regularly must stick in Key Performance Indicator ( KPI ) for make the priority.

#### IV. CONCLUSION

The condition of a healthy company backed by adequate resources makes the company has a high enough profit but it is unfortunate that the lack of business development that benefits the company's profit as future investment.

The external condition of the company can be responded well by the company this can be seen from the total weighted score of EFE 2,696 matrix. However, these external conditions can be a serious threat if not handled immediately such as mine land issues that have not been released and social issues related to environmental issues surrounding coal mines. The internal condition of the company is also responded very well by the company this is seen from the total weighed score of IFE matrix 3.130. However, the problem of disposal land shortages and heavy equipment performance is a weakness that must be addressed to proceed further.

Strategic formulation of strategic architecture provides an overview of the strategic arrangement gradually to achieve the goals set forth on the canvas in the form of blue print strategy.

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