

RE-ENGINEERING OPERATIONS STRATEGY FOR OPTIMIZING PRODUCTION INLAND MINING CASE STUDY OF PT TIMAH (Persero) TBK

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Abstract- *Production of tin from inland mining is still the mainstay source of tin ore production for PT Timah, the majority of tin ore mining on land in cooperation with partners, but the production of tin ore mining land PT Timah, steadily declining since the change operations strategy inland mining beginning February 2012. Implementation of the Law No. 4 of 2009 on mineral and coal mining, and energy and mineral resources minister enforcement number 28 on the implementation of mining services mineral and coal, causing PT Timah must change its strategy of partnering inland mining operations strategy compensation tin ore being mining equipment rental system. This study uses data analysis of tin ore production in 2012, , external and internal environmental analysis, PESTLE, Porter's Five Forces Model, SWOT analysis, and interviews with stakeholders to establish the root causes reduced tin ore production of inland mining, which is due to the weak of the PT Timah role in mining operations and because have not been competitive compensation mining equipment rental and purchase price ore mines by the collector in the local market. To optimize the production of tin ore from inland mines it is necessary to re-engineering operations strategies to improve the role of PT Timah by increasing turjawasli inland mining operations and make adjustments to compensate mining equipment rental, as well as re-engineering partnership focused on the improvement of mutualisme relations by enhancing partnerships mutual trust, interdependence, shared resources, and the improvement of supply chain inland mining operations partners. With the re-engineering operating strategy and mining equipment lease compensation adjustment, and improvement partnerships is expected tin ore production to inland partners mining can be controlled and can increase the production of tin ore from inland mines.*

I. Introduction

PT Timah is state-owned corporation has been operated in Bangka Belitung and Riau archipelagos, PT Timah as state-owned mining is having dual functions, that are as company prime objects is to create a revenue, but others PT Timah is having wider role to develop surrounding area. Tin ore is tin metal production raw material is only commodity product by PT Timah (Persero) Tbk. Competition for obtain a tin ore production from society mine within mining business permit possessed by PT Timah (Persero) Tbk, is a usual view side in Bangka-Belitung archipelago, by increasing tin ore receivers often called collector, because tin ore has been local trade commodity. But by presence law regulation and implementation of the law number 4 year 2009 about Coal and mineral mining, Mineral resources and energy minister regulation number 28 about coal and mineral mining service business performing, since on February 2012 the company has been re-engineering tin mining operating strategy specially mining processing system where it is mining contractor/partnership system previously to be partnership strategy with mining tools rest system that meant fully mining activity is conducted by Company as

mining business permit owner, mining operation activity with partnership program is fixed necessary because company has not have enough equipments and mine operator staff to do itself mining. Of course, it is very influence a tin mining activity climate in Bangka Belitung archipelago, with post reformation condition developing and local autonomy, PT Timah (Persero) Tbk must be to do strategy adaptation toward environment development for maximize tin ore result from its mining Business Permit area legally and obeyed to principle. But the tin industry competition level in local level higher, has made company inland mine tin ore product to be decrease, while tin ore supplying totally about 65 – 75% come from mining with partnership cooperation relation/pattern where it is up to now has applied (see figure 1).



Figure 1. Tin Ore Production 2010 – 2012

So it is needed Re-engineering Operation strategy for inland mining to increase an effective production, also to increase company advantages in local level.

Vision of PT Timah (Persero) Tbk is:

“Become tin mining company in the world that are environmentally friendly”

Mission of PT Timah (Persero) Tbk is:

1. Build a strong human resources, superior and dignified
2. Implement good governance and mining right
3. Optimize the value and contribution to the company’s shareholders as well as social responsibility

Values; Integrity, Commitment, Open, Rational, visionary

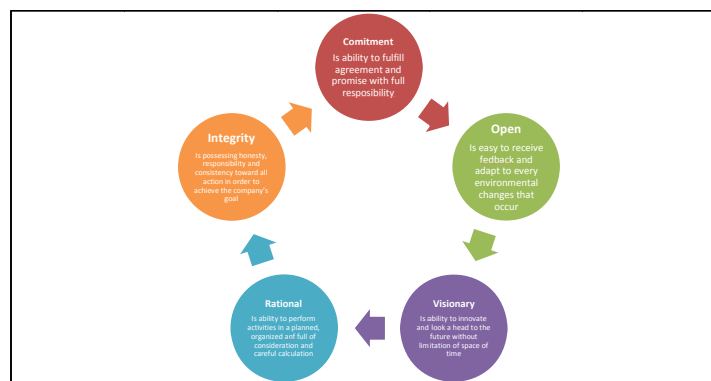


Figure 2. Values of PT Timah

1.1. Business unit

Tin mining is core business of PT Timah (Persero) Tbk, constituting bigger revenue contributor for company, mining operating some conducts autonomously using exploitation ship and production suck ship, Big Mine and some more using partnership by outsource. Tin ore mining activity is conducted inland and offshore using exploitation ship and production suck ship.

1.2 Business Issue

By economic and political dynamic developments need to do natural resource utilization wisely, involving all shareholders with mutual advantages principle, PT Timah (Persero) Tbk. Also has effort to maximize tin ore production through location utilization system within its mining business permit with partnership operating strategy involving community, in order to tin ore result is optimal constant with minimize an environment damage. Since Laws Number 4 about coal and mineral mining issued, has continued with ESDM minister regulation number 28, about Coal and Mineral Mining Service Business issued, have made PT Timah to re-engineering its business strategy, specially partnership tin mining strategy with mining service provider with tin ore production compensation to be partnership pattern business strategy with equipments rent. By tin mining processing is crowded in Bangka Belitung archipelago province and because all parties have felt right to obtain advantages financially, and also law realization condition is lack where all of regulation can be modified with each argumentation for fulfill own self interest, so it is happen as multidimensional confusions and can continue to make worse led mining management. It is affected toward company tin ore production decrease with equipments rent partnership strategy just tries to implement early 2012 (see Figure 4). So it is needed Re-engineering Operation Strategy for inland mine to improve inland tin mining.

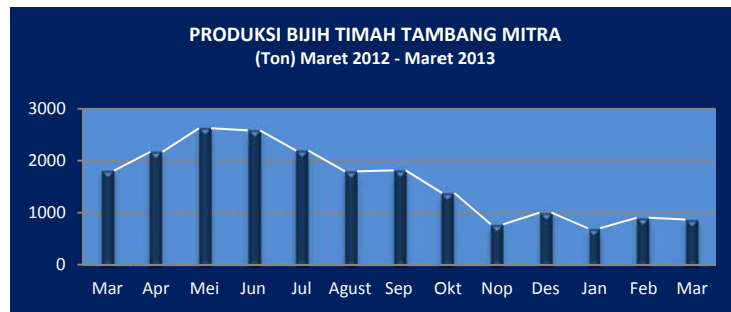


Figure 3. Decrease in ore production onshore

2. Business Issue Exploration

2.1 Conceptual Frame work

In this research has conducted to find basic problems and to give best solution for increasing tin ore productivity, following is conceptual frame work in this Thesis arrangements (Figure 5):

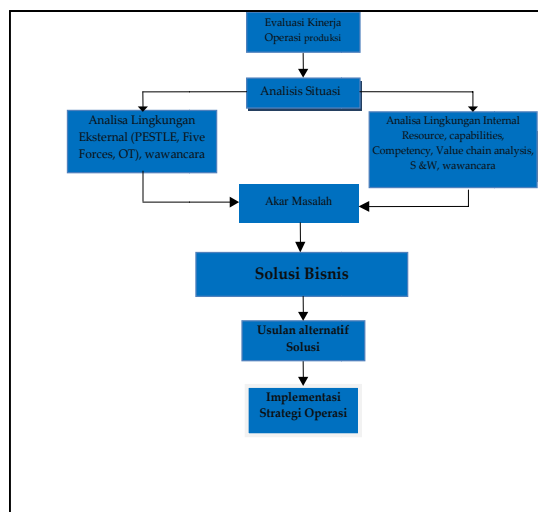


Figure 4. Conceptual Frame work

Natural resources wealth utilization mainly tin ore mineral is natural wealth has not renewed will be given strategies impact specially for stakeholders either who directly related or indirectly, and of course the tin ore wealth processing and utilization will be given both positive and negative impacts toward stakeholders, to minimize a negative impact from its processing and utilization and all at once to optimize its positive utilize will be directed to Indonesia community development, in according to Laws Number 4 year 2009 mandate; that mineral mining activity is processed based:

- a. Utilize, justice, and balance
- b. Sidedness to nation interest
- c. Participative, Transparency, and accountability
- d. Sustainable and have conception to environment

2.2 Analysis Business Situation

PT Timah as state-owned corporation is having authority to process a tin with very wide WIUP allocation (about 513.000 Ha) to face a challenge and business environment problems complex occurred because some parties are having interest conflicts. Competitor with all good and legal ways and also illegal are continuing to make effort to use tin resources both within Tin IUP and they are obtained IUP from outside Tin IUP potentially constitute does not potential.

2.3 External and internal analysis

In globalization condition present, an environment has not only reflect an environment limit in just ecology meant, but it is general concept to explain totally image from an element can be influenced company activity specially tin business in global market, therefore business environmental is having influence toward tin business present, both company external and internal. An analysis external and internal environment purposes are to know how much its influence toward company tin business future. To analysis how much company external environment condition influence, can use PESTEL analysis that is Politic, Economic, Social, Technology, Environment and Legal/Law conditions (Mason & General Sanders; 2009: 133). Those factors are environmental strength order which is influence of business. PASTEL analysis can be to help company top managements and managers to arrange as comprehensively and logically images about business environment condition out of company environmental from some aspects, an PESTLE aspect will be influence how strategy decision-making and company strategic operational (Wheelen, Thomas L and Hunger, 2012), (see Figure 6).

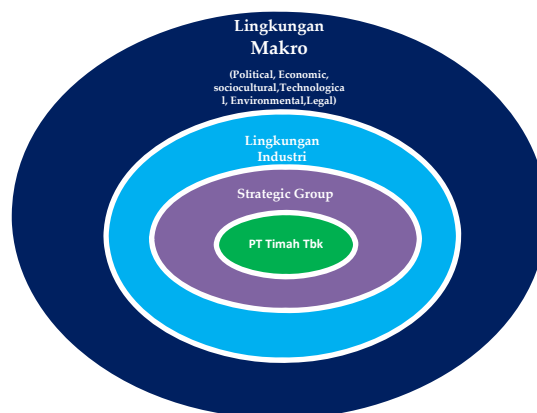


Figure 5. External Environmental

2.3.1.1 Political

Important development in present political globalization era is presence tendency to increase as nationalism spirit, included natural resources nationalism where state has effort to save as control toward natural resource processing, using as great as possible for national importance in the word meant for society prosperity, by using Laws Number 4 year 2009 early October 2012, but in other side

the mineral mining development specially tin still experience to much restrictions. Since local autonomy is effect, it is very influence company operation strategic policy.

2.3.1.2 Economic

Decreasing world economy condition is very influence industry growing in generally, specially electronic industries, because capacity purchase is lack toward products based technology, it is marked by electronic products marketing decreasing, therefore a purchase capacity for land transportation tools as a four and two wheel vehicles most using tin solder raw material, and by lack of it the electronic and transportation industries will also influence world tin market, because world tin consumption and production on 2012 has experience decreasing than previously years, but because demand is low and world economic worse have caused price average of tin mineral in tin commodity market in London (LME) has decrease about 18.9% or from average 26.021 USD/ton become 21.094 USD/Ton (2012). Sources from Tin annual report 2012.

2.3.1.3 Socio-Cultural

Presence as community perception is that legal to do tin mining activity from IUP area owned PT Timah which important is ore supplying enough to PT Timah and presence a cultural changing toward community livelihood, previously most as farmer, fisherman and plantation labor, with presence a tin ore purchasing by collector who is helper private smelter companies, caused some community have changed profession to be miner or prospector, mining activity by community firstly did in mine former areas or often called tailing, or mine former has been reclamation, using very simple technology and small water pump motor equipment and use small sluice box, easily a mining activity doing to seek for deposit residues on mine former areas, mining activity by this community has moves. Beside that this community mining activity is enough to give income than others in Bangka Belitung, because this mining activity did from morning to evening, they will be enjoyed its income on that day, also because purchasers or called collector has been wait to buy that mine result. This instant income is to be very strong magnet so that invite some peoples to come to Bangka Belitung to do mining activity. This new comer presence more much its number because Bangka Belitung community attitude and culture are much opened to accept a new comer to their island.

2.3.1.4 Technology and information

Tin mining technology development for tailing reserve using production suck pontoon (in local community is known TI sulk) and mini syringe mine (in community is known TI) to be supplier most tin ore raw material supply from inland mine has been dominated by community, it is follow to trigger to make ease mining activity by community who utilize fine grain mineral which is previous not tapped by conventionally mine treatment tools. Technology development mainly information technology is also follow to trigger mining increasing by community, by software global positioning system development can to help to detect more easily tin mine former sites previous has been become re-forest (has been reclamation), but prior is mine are where its mining not completed, or it is left because natural condition or indeed left because condition of tin mineral price decreasing close to 2500 USD/ton in 1982s, or at that time difficult technically to do so need high cost.

2.3.1.5 Legal

Laws amendment about General Mining Number 11 Year 1967 and by issued a Laws number 4 year 2009 about coal and mineral mining, follow to colored re-engineering operation strategy of PT Timah (Persero) Tbk. By change of Mining Master has issued by Mining Minister which is Laws Number 4 year 2009 become Mining Business Permit is issued by local government appropriate to their authority, continue to issued a ESDM minister Regulation number 28 year 2009 about mining service business performing, has been made PT Timah re-engineering operation strategy with to do readjustment in mining performing with partnership pattern with tin ore return to be equipment rent pattern.

2.3.1.6 Ecology

By mining activity more glow illegally, defacement toward reclamation area and tiling/mine former land illegal occupancy and overlapping some interests of each tin stakeholders are having share in ecology defacement, there is no explicit and clear law realizations following cause environment damage in

Bangka Belitung (Figure 8) more and more days increasing, and in other side increasingly concerns, awareness and careness toward environment by international world community toward present environment, world tin consumers are also to do some audit toward tin ore raw material origin, as a terms in order replacement as a “base clean resources”, so company in doing mining activity need to apply good mining practices (GMP).



Figure 6. Ecology damage on Bangka Belitung

2.3.2. PORTER Analysis (FIVE FORCES)

In its analysis about competitive strategy or also called Porter’s Five Forces) a company (Figure 8), follow Porter, competition factors among competitors in same industry will be competition strength central, competition higher among some company identified that industry profitability higher, but in other side company profitability might be decrease.

2.3.2.1 Competitive rivalry within an industry

Private smelter and tin industry actors majority have obtained their raw material through ore collector from company IUP area with ‘backing” aid of local apparatus person and in written way is having IUP wide about 5% if compared to company owned IUP wide, but their metal export and production are reached 70% from total of Indonesia tin metal export, indicated has obtained ore sources most from illegal community mine operated in Mining Business Permit owned by PT Timah, while proportion Local tin actors metal production (private) compared PT Timah production about 60% compared 40%, indeed more extreme with presence for not receive a tin ore production from community, and presence a company policy has not make cooperation effort legally in effort to make order toward mining activity by community who stay in Tin IUP area.

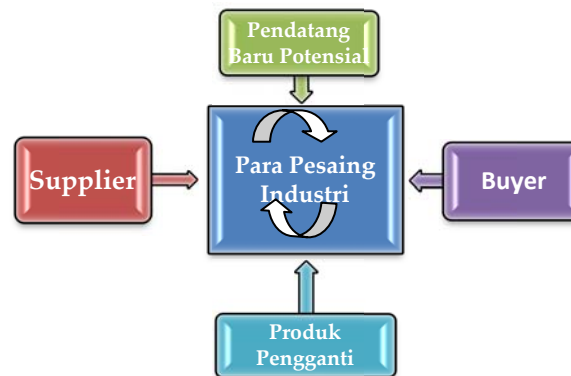


Figure 7. Five’s Porter

2.3.2.2 Threat of New Entrants

Private Smelter, Tin collector; and new private mining company with supports from foreign capital owners and wide networks will easily enter into tin business although they have no permission for a mining business operation requiring a fairly long process from exploration to production (Illegal Mining).

2.3.2.3 Bargaining Power of Supplier

- Mine of Timah’s Partners
Tin mining with the partnership is mutually beneficial collaboration, on which has been determined by PT Timah, but the partners easily distort the results tin ore production from the mine that they manage because of poor supervision and the reason for the price disparity.
- Mine of PT Timah

Changes in strategies inland mining operations managed by partner of mine production of reward systems with the price fluctuates according to the average price of tin metal in the current month, to a rental system at the appliance, resulting in production revenues from inland decrease.

- **Illegal Mining**

Illegal mining activities in the community are still happening, this is low law enforcement or because of the cooperation between the mining community with law enforcement, even the majority of operations in the concession area of PT Timah.

2.3.2.4 Bargaining Power of Customer

- **End User Buyer**

Domestic main buyer for ore raw material is PT Timah and Private Smelter Collector, the more easy access to sell and buy tin ore commodity as a result of tin mining, the more valuable the tin ore where it has been validated a reference for buying price of tin ore with world tin metal price in the tin trade in London Metal Exchange & Kuala Lumpur Tin Market fluctuating every day. While main buyer for metal product is industry of tin metal user (called as end user) like Solder Industry (Figure 7)

- **Broker**

Largest tin metal consumers are tin metal commodity traders, exploiting the difference in fluctuation of tin metal price, with nonphysical buying system, participating in influencing the demand and market, so that the metal commodity price they control as big capital owners. Because of the tin metal price in domestic marketplace refers to the tin metal price at marketplace of LME and KLTM such that the tin ore price is also indirectly determined by Brokers.

2.3.2.5 Threat of Substitutes

So far the tin metal can't yet be substituted by other metals, in its usage as tin solder, and the tin metal is largely used as tin solder in electronics industry, but as can layer it has been substituted by aluminum metal & tetrapak to layer the packages of foods and drinks. It can be seen in the following figure:

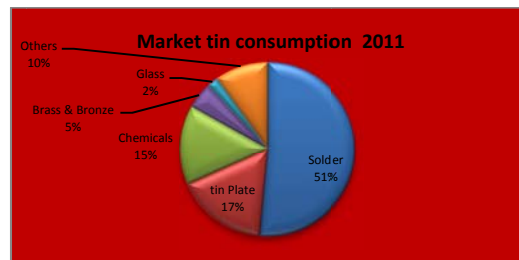


Figure 8 world Industry for tin consumption

2.3.3. Internal Analysis of Resources and Capability

2.3.3.1 Resources

Resources include the whole assets of finance, physis, human being, and company's resources used by the company to develop, to create, and to sell the products to customers. Although every company has resources, but they can't be entirely said to be unique and able to give a continuous competitive advantage. (Mudrajat K, 39, 2011).

2.3.3.1.1 Tangible Assets

The financial condition of the company in good shape, Completion Technology in the Bucket Wheel Dredger (BWD) is expected to be more efficient so that operating costs can be reduced, thereby further increasing the company's competitiveness.

2.3.3.1.2 Intangible Asset

This is asset that can be seen by naked eyes or touched, including brand, reputation, organizational moral, technical knowledge, patent, trademark, and experience accumulation in the area of tin mining. Although it can't be seen but this asset contributes importantly to competitive advantage.

The company continuously conducts several improvements for operation management system integrated with the use of SAP system, having information openness and can be calculated rapidly, the company has also product brand that has been widely known and registered at LME, but on the other hand, it has occurred a gap of employee generation because of lateness in regeneration, having impacts on many the retired experts, but the new employees need immediately to increase capabilities as well to master the expertise in the tin mining business.

.2.3.3.2 Core competency

Competency in land mining operation has been diminished because so far the land mining activities have been largely undertaken by mining partners, while the mining competency at sea by dredging-boat as well as sucking-boat have been still continuously kept, but it is necessarily done a regeneration immediately because many employees who have undergone pension, in order to the issue it has been conducted continuously a technical training program to fill-in a gap of competency worried to occur.

The mineral processing and purifying at the metallurgic center still become a reliable competency for the company, because the metallurgic center in the present time still produces the high quality and relative low-cost.

2.3.3.3 Competitive Capability

The offshore mining using a dredging-boat has been still hold, with characteristic of tin reserve at the area in-situ, requiring a bucket mining having a superiority in doing hard and tough material breaking-off, while there was exist a simpler technology in the mining at land and at sea by using a highly mobile sucking-boat for production, because it is small designed to possess self-driver, so that it is more unimpeded digging at narrow accumulation area, meanwhile the equipment of processing and purification are continuously improved such that be able to process fine and complex minerals, and it can be done a metallization of mining ore rapidly and the level of purity is over the standard, the company has specific market network by continuously developing a partnership relation to end user of tin metal where it has been continuously conducted a breakthrough by meeting special products according to the orders of consumers, and supported by reliable and integrated management information system becoming a competitive capital, so that the management of supply chain can be quickly carried out according to the market demand.

2.3.3.4 Sustainable Competitive Advantage and Capabilities

Capability indicates the company's ability to integrate the owned resources to achieve the objective desired, capability will continuously develop when happening a mutually advantageous interaction as well as there is a relationship of inter-tangible and intangible resources based on the development, exchange, sharing for information and knowledge in the company.

Capability will be increasingly important as combined uniquely to create a value to be a core competency in the company, PT Timah as pioneer for tin mining in Bangka Belitung has resources and unique competency as follows:

1. Offshore mining expert ;
2. Smelting expert ;
3. Marketing Channel ;
4. High Quality & Good Reputation;
5. Management Information System

.2.3.4. Value Chain Analysis

Value-chain analysis shows the company as an ongoing process in the value creation activities. Value is the amount that consumers are willing to pay for something that was created by the company, the value of all the company's revenue is measured (Mudrajat K, 46, 2011).

2.3.4.1. Operation Supply Chain Tin mining (Existing)

Procurement is the most important component of the supply of raw materials in the form of "Low Grade Ore" (20-30% Sn content) depending on land Mine miners partners (partner assisted small-scale mining) that are very difficult to control (uncontrollable) to the calculation of rental equipment systems, while tin ore prices in the local market is very high difference.

2.3.4.2. Operation Supply Chain Tin Mining (propose)

To support the production operations are a priority for the company, after the policy change on inland mining partnership, obtained with the smaller production supply chain so that others will follow and the decline will be even worse when it is up to the consumer/customer that has been loyal the company will be unsuccessful delivery, will certainly have an impact on the credibility of the company's future.

2.4. Root causes

From the situational and description above it can be concluded the causes of decreased tin ore production in the activity of land mining can be classified into four roots of main problems (see Figure 8):

a. Man

This caused by there is lateness of regeneration for twenty years so that after several times there was no recruitment it occurred a generation gap resulting in the competencies of operating employees are not yet sufficient because they are largely new employees. With the presence of operating strategy change in the production of land tin ore there are still many operating employees who not yet understood as wholly, so that many obstacles and problems encountered at the field not supporting the operating strategy and resulting in the loss of chance to produce as well.

b. Material

A part of large tin reverse has been diminished, currently the activity of land mining is a mining activity at the area of former previous mining that has been not yet finished and a part of the mining has been conducted in the "spotted" residual reverse. Several reverse blocks underwent a overlapping with HGU palm plantation, and several blocks being in the areas of production forest and protected forest, so that it is not yet conducted a mining if the permission letter for using the area is not yet issued from ministry of forest affairs, and currently it is being in the process of area renting.

c. Environment

On one hand the tin mining activity has become employment and it has become a main support to the economy of communities in Bangka Belitung, but on the other hand the environmental condition is very concerned because many illegal mining activities, and even at several land locations that has been reclaimed by the company has been also destructed, with the are of company's IUP at land is 327,000 Ha, certainly the environmental problem is very complex, because limitation of land at several locations taking up the land of IUP by the communities for the farming land, happening overlapped with use-right of palm plantation, and a part of our reserve is in the area of production forest.

d. Method

After doing reinventing to the operating strategy of land mining production since February 2012 it has been carried out an experimental test for validation of cooperative system in tools renting in arranging the regulations according to The Law no 4 of 2009 concerning the mining of minerals and coals and the regulations from the ministry of energy and mineral resources number 28 of 2009 concerning the performance of Mining Service Business, which in the article 10 paragraph 1 stating that "The holders of IUP or IUPK of Production Operation are obliged to conduct themselves the activities of mining, processing and purification", thereby the company changed the form of partnership relation in the implementation of mining activities is compensated based on the number of production yielded (with the payment of buying price of tin ore) and then changed to a cooperation in the form of renting for the

mining equipment. There are three basic changes in the mining operation strategies among other things:

- The cooperation change of partnership mining in return for the rent service tin ore production become the pattern of rental service of mining equipment.
- The receiving of high-content tin ore (>70 % Sn) into the receiving of low-content tin ore (20% - 30 % Sn)
- The arrangement of mining rental service is through logistic work unit

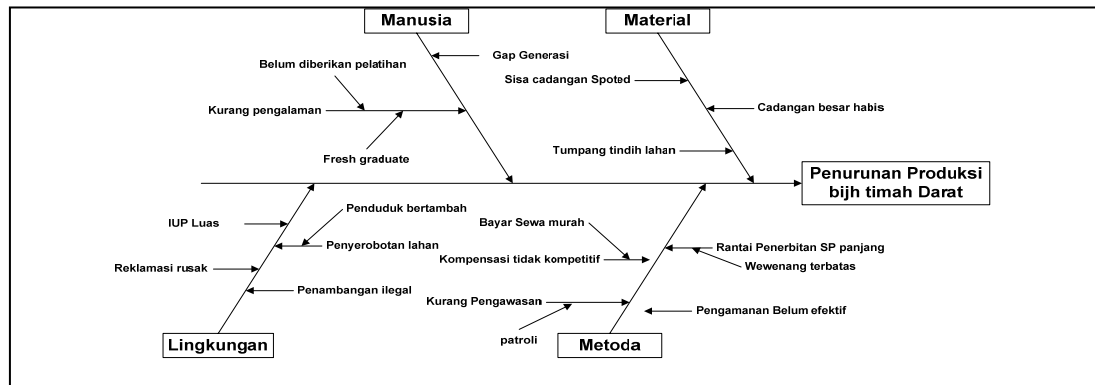


Figure 9 Diagram of fish bone

3. Business Solution

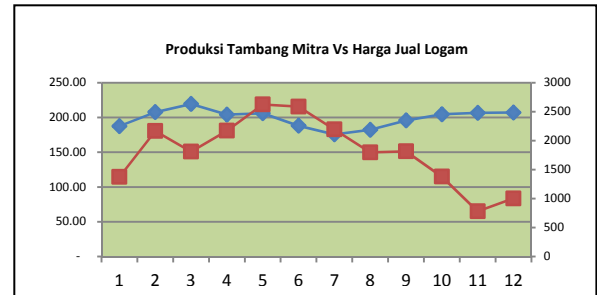
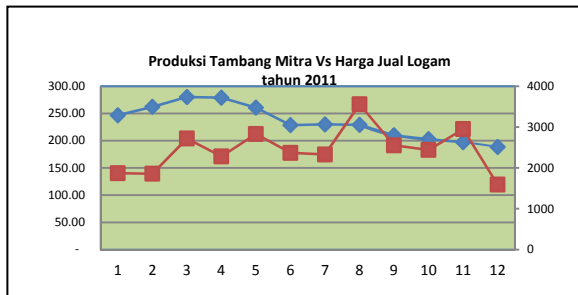
3.1 Business Solution Alternative

To optimize the production of inland Mining, it is necessary to Re-engineering Strategy Operations Company, in an effort to improve the production of tin ore from inland mines partnership it is necessary to evaluate the changes in strategy that done before, and then improve the other strategies in order to support the re-engineering strategy the new. Studying the phenomena that existed before the change in operating strategy and compare the phenomena that existed after the change strategy, and find the root cause of the decline in the production of inland mines during the period 2011 and 2012.

3.2 Operating Model of Existing change

the data analysis in 2011 when it has been still validated for partnership operation strategy with service return on tin ore when happening the change of world metal price, then the production of tin ore from the partner mining will fluctuate following the change of market price, because the buying price rise of tin ore at local market will be adjusted with compensation of tin ore as a result of partner land mining, so that when the company's need for tin ore is increased or in the time of tin ore at the tin melting has been decreased it will be conducted an adjustment to the service return price, so that the tin ore of land mining production will be increased, but likewise vice versa when the world metal market price tends to be decreased it is possibly caused by the stock excess and service-return on tin ore will be decreased "adjusted" until the calculation of basic price of tin ore is maximally 65 % of world metal price, because the treatment of buying price standard of tin ore is based on the world metal price tin metal at average on previous month (tin metal price $M - 1$). With the presence of the tendency of tin ore production from the land mining fluctuated because there is still effect of tin ore price at local market (Figure 10 & 11) conducted by Private Smelter collector, certainly it will make the stability of tin ore production obtained by the company from partner mining will be disturbed and there is a tendency that is highly influential on the company's operation performance at its downstream (at melting), perhaps because it is still weak in the operation control, although the activity of tin ore production security for the partner land mining has been conducted tightly by keeping posts of security in the Mining Business Permission, but the attempts conducted are not yet be able to control as well the tin ore production from land mining by using partnership system because there is still big difference between rental compensation received by

partners in the mining with buying price of tin ore conducted by the tin ore collectors at local market. So in order to increase the land mining tin ore production, the first alternative is to do the adaptation of rental price for the mining equipment at approximately 65 % of the average rata-rata world metal price at the current month.



Figures 10 and 11 related between tin Price and tin ore production 2011 and 2012

3.3 Re-Engineering Operating Strategy

It is interesting to listen again what has been ever said by Charles Darwin “Not the strongest being able to long age, but the most adaptive”, that is those who always adapt to the various different changes. Likewise similarly with the company, it will be persistent when it always adapt to its operation strategy in the attempts of the change of external environmental condition continuously develop its business, by regarding the change of world competition in the business of tin affairs nationally in Bangka Belitung as a business chance, with the presence of industrial competitive level that is increasingly high, and the company would also conducted the adaptive changes for winning every competition. So that PT Timah must conduct Re-Engineering of land mining strategy including (Table 2):

1. Improvement of mining location preparation
2. Improvement of mining implementation
3. Improvement of mine closure
4. Revision of licensing administration
5. Revision of cooperation system
6. Resources of Empowerment Program
7. Land Empowerment Program and Equipment
8. Operational Empowerment Program

3.4 Re-Engineering partnership Model

Definition of partnership according to (Muhammad Jafar Hafsa, 1999): it is a business strategy conducted by the two or more parties in a certain term to reach the common profit with principles of mutually need and develop.

3.4.1 Re-engineering of partnership Model (proposed)

Because it is a business strategy, so the success of partnership is highly determined by the presence of obey in the partnership in undertaking the business ethics. Conceptually the partnership is defined as a long-term commitment between two or more organizations intended to achieve a certain business objective by maximizing the effectiveness of resources from each participant. For that in the Table 2 it has been presented some proposals for Re-engineering of partnership pattern such that it can become a mutual advantageous relationship, the improvement of partnership relation for supporting the operation strategy in the land mining partnership aiming to build a long-term partnership relationship, thereby in building the partnership relation it is necessarily grown the following points (see Table 3):

1. To improve a mutual trust
2. Interdependence
3. development awareness Resources together
4. support of Supply Chain Management

Table 2. Re-engineering of partnership model

Partnership	Existing	Proposal
1. Trust	There is not yet strong mutual trust	Openness for information, business sustainability
2. Interdependence	Interdependence is not yet realized as whole	In order to improve Interdependence, by doing the technology guidance and technical guidance with knowledge and skill transfers
3. Joint resources a. Financial b. Technology	There is not yet created a collective aim	Conducting workshop about the importance of the same mission in the partnership relation
4. Supply Chain Management	There is not yet mutual supporting the supply chain	Centralized supply of fuel oil, centralized production transport

Table 3 Re-Engineering of Operation Strategy Formula

The matters of re-engineering	Current operation strategy	Proposed operation strategy
Operation		(TURJAWASLI)
1. Preparation of mining location	Prepared by partner	Prepared by company
2. Implementation of mining	Implemented by partner	It is owned by company
3. Mine closure	Reclamation separated from the mining activities and sub-contracted to the third-party (other partner)	It is responsibility of company, cooperating with communities environs, it is one packet to the mining operation activities
4. Licensing administration	Long and bureaucratic, all proposals go to the director of production operation	To shorten, the proposal is sufficiently to Division Head
5. Cooperation system		
• Empowerment of resources	Reserve is proposed by partner	Prepared by company with high trust level
• Empowerment of land-use and infrastructure	It is responsibility of partner	Facilitated by company, calculated by standard compensation
• Empowerment of operation	Fully prepared by partner	The company coordinates the procurement of fuel oil and other operation requirements
Partnership Model		Participative
1. To develop the trust	There is no strong mutual trust	Openness to information, business sustainability
2. To increase interdependence	The partner doesn't depend on the company	Share of technology and technical guidance GMP with transfer of knowledge and skill
3. To make the partnership for	There is no collective awareness	Conducting workshop about the importance of the same mission in the

collective resources		partnership relation
4. To enforce SCM	It is not yet efficient and separated in boxes	Supply of fuel oil, centralized production transport

4. Conclusion and Implementation

4.1 Conclusion

In order to increase the land mining production it needs to conduct Re-Engineering of operation strategy in the attempts of improving the roles of arrangement, keeping, supervising as well as controlling (TURJAWASLI) from each work unit related directly to the land mining production, but there is no effective strategy, because in doing the process of production the operation strategy would be always adapted to observe any development and change of business environment both external situation and internal condition, and continuously observing and evaluating where the site that can be still revised, for simplifying the service system and increasing the productivity, as well as to find out the shortages and to improve them continuously. In the implementation of new strategy by doing the increase of the pattern of mining arrangement (from the preparation of mining, operation and mine closure), the pattern of keeping the region of mining operation license (including empowerment of resources, empowerment of facilities and equipment), supervising the pattern of mining and controlling of production or abbreviated *Turjawasli*. The revision of the pattern of partnership relation is absolutely required because the success of this operation strategy re-engineering also involves the partner, mutual trust, interdependence, awareness of mutual recruitment, and to make efficient the supply chain management, for optimizing the land mining production more efficiently. In the implementation of operation strategy it needs supports of all parties, and continuously conducted the increase of care to every company's program, and taking an active role to increase the productivity, such that it becomes a part of the function and role of each company's element individually in order that it can compete in the midst of high competition in national tin affairs industry.

4.2 Implementation Strategy

The strategy is necessarily operated in the form of collective targets and used as indicator for the success of achieving cumulative performance, and then indicator for the success is necessarily operated in the form of targets for every work unit, so that the target is continuously socialized to the level of working group, for giving indicator of each individual that has been measured and planned such that in the stage of the implementation of working program kerja will appear the same direction: the improvement of collective performance, the company has applied the management system according to the objective (management by objective/MBO), where between subordinates and superior work together and the aim to achieve that is specific, measurable, and it can be attained effectively, relevantly, and with measurable time.

The forces of MBO system among other things are:

- a. doing the integration of the functions of planning and supervising in one rational system
- b. encouraging the company to determine the objectives of upper management level to lower management level
- c. focusing on final outcome
- d. encouraging self management and in commitment to all parties through participation

in Table 4.1 goals and objectives of the program implementation of the new strategy;

Table 4 Goal and Objective Implementation MBO

Objectives	Work & Resources	Targets
Re-engineering of operation strategy	1. Revision of Decision Letter for The Orderliness and Performance of land mining and Revision of Decision Letter for The low-grade tin ore processing, including	Improving the compensation of rental service return, management service and production service to grow the competitive advantage, receiving tin ore minimally 20% and maximally 65%
	a. Preparation of mining location	
	b. Implementation of mining	
	c. Mine closure	
	2. Summarizing the path of licensing	To accelerate the service to land mining partner
	3. Revising the land mining cooperation system, including	Empowerment of resources, land-use and facilities, operation
	a. Empowerment of resources	Enlarging the role and responsibility of company for the mining activities
	b. Empowerment of land-use and facilities	
	c. Empowerment of operation	
	4. Addition of drilling teams	Service for evaluation of mining quickly
Re-engineering of partnership model	1. To grow mutual trust	Openness to information, business sustainability
	2. Improving interdependence	Share of technology and technical guidance GMP with transfer of knowledge and skill
	3. Making collective resources partnership	The sameness in mission and vision in the company's business
	4. To enforce SCM	More efficient

in Table 4.2 to clarify the respective roles and responsibilities unit by mapping each undertaking approval (Accountable), responsible / executor (Responsible), who was consulted (consult) and who is informed by the work program is expected all units work involved to support the efforts of Re-Engineering Operations Strategy.

Table 5 . Implementation of Program

Process/Project	Target	Plan of action/ stages of implementation	Time span	Responsibility of ARCI
To revise the management of land mining and revision of management of low-grade tin ore processing	Adapting the strategy to external business environment condition & it can accommodate the ore receiving	<ol style="list-style-type: none"> To revise Decision Letter of orderliness and management of land mining revision of management of low-grade tin ore processing To socialize to the field employees & partner 	March-May 2013	A: Dir Ops R:Ka Unit TD. Ka AEOP C: Ka POP,GM I:Ka.SIM,Ka Keu

To summarize the licensing path	To accelerate the process of service to tool rental mining partner	<ol style="list-style-type: none"> 1. To revise the organizational structure 2. To revise the problems of lateness 3. To delegate the authority: 	May 2013	A: Dir Ops R:Ka Unit TD. C: Ka POP,GM I:Ka.Logistik
To revise the mining cooperation system	To make sample mining	<ol style="list-style-type: none"> 1. Limited Workshop of UTD and Div Kam 2. To formulate SOP 3. To socialize to field employees 	May-June 2013	A: Dir Ops R:Ka Unit TD. Ka AEOP C: Ka POP,GM I:Logistik
To grow mutual trust	To create a good partnership climate	<ol style="list-style-type: none"> 4. To hold the meeting of common evaluation monthly 	Beginning from May 2013	A: Ka POP R:Waspod, GT C: Ka Eksplorasi I:Ka.Div Kam
To increase interdependence	To create the interdependence of partner on the company	Providing a technical training to partner's operators (certification)	Beginning from June 2013	A: Ka POP R:Ka Unit TD. Ka AEOP C: Ka Rekayasa I:Ka.UTD, Ka Logistik
To make the partnership of collective resources	Giving the understanding of process and objective of work unit cooperatively about land mining	<ol style="list-style-type: none"> 1. Training and Socialization SOP 2. Training of partnership 	Beginning from June 2013	A: Dir Ops R:Ka Unit TD. Ka AEOP C: Ka POP,GM I:Ka.SIM,Ka Keu
To enforce the SCM of inland mining	To reduce the load of partner's operation cost	To supply the industrial fuel oil for requirements of mining operation, cooperating with Pertamina	Beginning from June 2013	A: Dir Ops R:Ka Unit TD. Ka AEOP C: Ka POP,GM I:Ka.SIM,Ka Keu

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