Planning Strategy of Operation Business and Maintenance by Analytical Hierarchy Process and Strength, Weakness, Opportunity, and Threat Integration for Energy Sustainability

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ABSTRACT

This study integrates analytical hierarchy process (AHP) and strength, weakness, opportunity, and threat (SWOT) in strategic planning or strategy formulation to demonstrate the qualitative and quantitative integration of techniques between SWOT and AHP in developing business strategies in operation and maintenance (O&M) of power plants. Apart from that, it is to evaluate essential factors in strategic planning and to utilize them in developing effective strategies for the O&M of power plants in the CEPA. Ltd. There are two stages of testing in this study, namely the first stage is data collection and SWOT and TOWS strength analysis. The second stage is the integration of SWOT and AHP. The study was conducted at CEPA. Ltd. as a private company operating in the power generation sector with a research period in the mid to end of 2019. Results of this study show some elements of the strategy that can be done (1). The contract of cooperation with the industry parts supplier, (2). Cooperation contracts can be pursued, one of which is by re-construction of a structured and timely payment process (3). Optimizing company value can be achieved by optimizing CSR (4). Website optimization is a digital-based promotion tool (5). Support in terms of resource development can be completed through training, for example, Basic Welder Scaffold and Basic Mechanical (6). Any transactions process in foreign currencies to avoid fluctuating exchange rates at the time of purchase or payment.

Keywords: Strength, Weakness, Opportunity, and Threat, Analytical Hierarchy Process, Business Operation Management

JEL Classifications: C44, D02, L00, L60

1. INTRODUCTION

Sustainability of energy supply, especially electricity, is fundamental in supporting various production needs and all community needs. To support the continuity of electricity supply, Operation and maintenance (O&M) of a power plant is one crucial factor in the implementation of electricity supply to the community because electricity is a form of energy that is very important in human life. Electricity plays a vital role in life. It can be a resume that power has become the primary energy source in every activity both in the household and industry (Marcelina, 2016). Some national energy problems in Indonesia that must be resolved include; utilization of domestic energy that has not been optimal and limited energy infrastructure whose value-added has not been maximized, decreased production, and exploration, which is not yet optimal and complicated bureaucratic licensing. Various challenges in energy management in Indonesia, including government regulations and changes in the micro and macroeconomic cycle which can undoubtedly have a systemic impact on the planning and business strategy of electricity...
of the AHP method provides conclusions for top management in projecting and evaluating the utilization of renewable energy in various sectors (Karakaş and Yildiran, 2019). Previous study by (Gottfried et al., 2018) who analyzed the investment behavior in the energy sector by combining the AHP-strength, weakness, opportunity, and threat (SWOT) method found the fact that business strategies and investment behavior in the energy sector also showed maximum results to provide an overview of the operations management section on investment policies and even professional work objectives. other studies also reveal that the use of the AHP model combined with SWOT can also be used as a useful decision-making tool for business planning (Barusman and Redaputri, 2018)

Objectively this research integrates AHP and SWOT in strategic planning or strategy formulation to demonstrate the qualitative and quantitative integration of techniques between SWOT and AHP in developing business strategies in O&M of power plants. The purpose of this study is to evaluate essential factors in strategic planning and to utilize them in developing effective strategies for O&M power generation businesses. It will be imperative for policymakers to understand the importance of corporate environmental factors and to support the decision-making process. In this study, a SWOT analysis is used in conjunction with the AHP. The formulation of strategies that can be done by the company to develop and be sustainable is to formulate its business strategy. The wording of this strategy will be carried out through an industrial strategy management approach using strategic management tools. The weighting of internal and external vital factors in this study will be processed by the AHP method, and these strategic factors are then used in the input stage (IFE and EFE Matrix) then the matching stage will be used (Matrix SWOT/TOWS).

2. LITERATURE REVIEW

2.1. Operation Sustainable as a Comprehensive Strategic Business Planning

Business continuity illustrates the sustainability of the economy and society that can coexist continuously for a long time on a global scale (Felix, 2018). Business continuity is closely related to TQM (Total Quality Management), which includes process quality, human resources, strategic quality planning, and information/analysis (Ramlawati and Putra, 2018), (Jenkins, 2009). Teori Keberlangsungan mencakup empat capital model seperti: social sustainability yang meliputi human capital (labour and skills, intelligence, social networks, political systems, trust and reputation and influence/power (Ślaus and Jacobs, 2011). In addition, the sustainability of a venture can be said to be sustainable if it exists on financial sustainability (cash, debt, investment, monetary instruments) (Van Bardeleben, 2011), (Francois, 2018), and environmental sustainability element (resources, living systems dan ecosystems services) (Geerlings and Vellinga, 2017), (Lal, 2016), (Goodland, 2003). Business continuity must also include elements of manufactured capital (infrastructure, machine and tools factories) (Costanza and Daly, 1992).

The development of a sustainable operations strategy is a subset of business strategy planning related to supply chain management
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2.2. AHP and SWOT

Thomas Saaty developed AHP in the 1970s (Saaty, 2011), (Khazaii, 2016). AHP is a decision making factor by using a mathematical model. AHP helps in determining the priority of several criteria by conducting a pairwise comparison analysis of each measure. AHP is a measurement theory through pairwise comparisons and relies on expert judgment to get a priority scale. AHP is based on a systematic pattern of human thought to deal with the complexity it captures so that it is realized in a method that formulates the problem in the form of a hierarchy and consideration is included to produce a relative priority scale. Hierarchy is defined as a representation of a complicated issue in a multi-structure the level where the first level is the goal followed by the level of factors, criteria, sub-criteria, and so on until the last level of alternatives. With hierarchy, a complex problem can be broken down into groups, which are then arranged into a form of the hierarchy so that the problem will appear more structured and systematic.

SWOT analysis is a technique to identify various factors systematically to formulate the Company’s strategy (Leigh, 2010). (Piercy and Giles, 1989) SWOT analysis has an essential role in business progress, which has been increasingly competitive in achieving its objectives. The meaning of SWOT is strengths, weaknesses, opportunities, and threats. Which means strengths, weaknesses, opportunities, and threats. There are eight stages in building a SWOT matrix namely: Make a list of critical external opportunities of the company, Make a list of significant external threats of the company, Make a list of essential internal strengths of the company, Make a list of significant internal weaknesses of the company, Match inner forces with external opportunities and record the results of SO (Strength and Opportunity) strategy in the specified cell, Match internal weaknesses with external opportunities and record the results of WO (Weakness and Opportunity) strategies in the specified cell, Match internal strengths with external threats and record the results of ST (Strength and Threat) strategies, Match internal weaknesses with external threats and record the results of the WT (Weakness and Threat) strategy in the sections specified (Piercy and Giles, 1989). In the SWOT analysis, Factor weights are not calculated to determine the effect of each factor on proposed alternative strategies. The SWOT analysis does not provide a way to systematically determine the relative importance of criteria or to assess alternative decisions according to standards. To overcome this, the SWOT framework was changed to a hierarchical structure, and the model was integrated and analyzed using the AHP method. The purpose of the AHP method in the SWOT analysis is to be able to determine the strategic factors that affect the company systematically (Kurttila et al., 2002) and (Göröner et al., 2012).
Stages in the integration of AHP and SWOT: (1). Determine Internal (Strengths, Weaknesses) and External (Opportunities, Threats) factors for strategic planning in the SWOT analysis. (2). Make a pairwise comparison of each Internal and External subfactor. (3). Using the AHP method to determine the priority factor levels of each internal and external subfactor. The integration of SWOT and AHP analysis in strategic planning is carried out where the priority of internal and external factors is obtained by the AHP method, and then those priorities are used in the SWOT/TOWS analysis to provide alternative strategies (Oreski, 2012), (Karakaş and Yildiran, 2019) and (Gottfried et al., 2018). AHP helps as an effective means of handling complex decision making for strategies to be prioritized and optimized. AHP will help to reduce bias in decision making during the SWOT analysis process (Mu and Pereyra-Rojas, 2017).

3. RESEARCH METHOD AND MATERIALS

3.1. Sample and Method
The method approach in this study is an explorative qualitative analysis using the AHP, and SWOT approaches as a measure of its investigation. Where the purpose of using AHP and SWOT is directed to test managerial, strategic decisions. The object of research is Consolidated Electric Power Asia, Ltd. (CEPA), which is one of the companies engaged in O&M electricity generation services operating in South Sulawesi Province, Indonesia. This research took place from March through November 2019.

3.2. Measurement
Data collection includes primary data through the results of observations and interviews with the company’s internal parties, namely the operational and financial management. The stages in data analysis in this study are the first stage; (1) make a list of CEPA. Ltd. external opportunities. (2). List the company’s external threats (3). Compile a list of important internal strengths of the company, (4). Compile a list of company internal weaknesses, (5). Matching internal strengths to external opportunities and compiling the results of the company’s Strategy - Opportunity (SO) analysis, (6). Matching internal weaknesses to external opportunities and compiling company Weakness-Opportunity (WO) results, (7). Matching internal forces with external threats and compiling company Strategy - Threat (ST) results, (8). Matching internal weaknesses with external threats and compiling company Weakness-Threat (WT) results. The weighting of measurement instruments starts from 0.0 (not important) - 1.0 (very important).

The second stage is to integrate SWOT and AHP, where the scenes in this integration are: (1). Determine internal factors (Strengths - Weaknesses) and External (Opportunities and Threats) for strategic planning in the SWOT analysis, where the measurement weight of the instrument is multiplied by the rating level of the tool. To get a weighted score, the value of the instrument weight is multiplied by the rating level (2). Make a pairwise comparison of each internal and external subfactor, (3). Using the AHP method in determining the level of priority factors of each internal and external subfactor (TOWS).

4. RESULT AND DISCUSSION

4.1. SWOT Analysis
Table 1 shows the clustering of SWOT analysis on the object of study, which concluded that in terms of strength of PT. CEPA several strength factors include resource strength, organizational capacity, and supporting administrative capabilities. PT CEPA’s weakness map includes weaknesses in financial organization, operational weaknesses in the machine’s timeframe. Opportunity map of PT. CEPA consists of opportunities for cooperation contracts and organizational commitment as well as market potential. At the same time, the threat factor is in the form of regulatory threats and economic, strategic policy threats.

In the SWOT assessment analysis, as shown in Table 2, which explains the relationship between the strength-opportunity (SO) factor, weakness-opportunity (WO), strength-threat (ST), weakness-threat (WT).

Furthermore, based on the Internal Factor Evaluation (IFE) matrix in Table 3, it explains that the total weighted score obtained by Consolidated Electric Power Asia (CEPA. Ltd.) for internal factors is 2,833 which means that the Consolidated Electric Power Asia (CEPA) company has a position muscular internal strength. The strength factors that have the most significant role are quality human resources with a score of 0.558, followed by the company’s ability in the field of O&M. Strength factors that have a decisive role must be utilized as well as possible by the company. From the IFE matrix, it can also be seen that the most significant weakness factor for the company is the potential for machine reliability to be reduced due to a considerable outage delay with a score of 0.393 and some payments to suppliers were delayed due to the approved payment system with a score of 0.203. Negative factors for the company must be avoided and enhanced by the strengths and opportunities the company has to continue to carry out this O&M business. Following Table 4 explains the comparison matrix scale of SWOT and TOWS analysis.

While in the EFE matrix results in Table 3 it can be seen that the total weighted score obtained by CEPA for external factors is 2,566 which means that the company Consolidated Electric Power Asia has a position of external opportunities that is quite supportive. Opportunity factors that have the biggest role are making contracts with Nobel Part suppliers through the LTSA method: Long term Service Agreement or OPSA: Operating Plant Service Agreement with a score of 0.599 and followed by Planning purchases and making agreement agreements with spare part suppliers for the year to come at the current price of 0.345. Opportunity factors that have a positive role must be utilized as well as possible by the company. From the EFE matrix above, it can also be seen that the biggest threat factor for the company is the exchange rate of the rupiah against the dollar for the purchase of Nobel Part with a score of 0.203 and followed by the factor of delays in the completion of the Mini LNG Plant project which affects the cost of preparing a CEPA O&M LNG plant with a score of 0.200. Threat factors that have a negative role for the company must be faced with the strengths.
Table 1: SWOT analysis internal

| Strength                                                                 | Weakness                                                                    |
|--------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| • Have quality human resources                                           | • The potential for engine reliability is reduced due to significant outage delays |
| • The company’s ability in the field of operation                        | • Some payments to suppliers are often delayed                               |
| • The ability of the company in the field of maintenance                 | • Enormous potential for Corporate Income Tax (CIT) payments due to delays in purchasing spare parts |
| • Ability to make identification of routine maintenance schedules        | • Dependence on Original Equipment Manufacturer (OEM)                         |
| • Ability in occupational safety and health and environmental protection | • Knowledge and experience for the initial CEPA O&M LNG team is still limited |
| • Ability to create a company’s budget and cash flow                      | • Limitations of the ability of the tool to assess used parts that will be reconditioned |
| • Company reputation                                                     | • Limitations of the strength of the tools to analyze the condition of supporting equipment (Wire rope test, Boiler certification) |
| • Have contractual certainty until 2022                                   | • The company does not have an official website yet                         |
| • Capabilities in Management Information Systems (XP-CMMS)               |                                                                             |
| • IMS based on ISO 9001, ISO 14001 & OHSAS 18001 standards               |                                                                             |

Opportunities

• Making contracts with noble part suppliers through the LTSA method: Long term service agreement or OPSA: Operating plant service agreement
• Plan purchases and make agreements with spare part suppliers for the coming year at current prices
• Pre-mobilization of CEPA O&M LNG follows the progress of the Keera LNG project
• Licensing and competency certification for CEPA O&M employees for the mini LNG Plant must be prepared
• The company’s commitment to environmental management efforts must be stated in the protection policy
• Hire local workers per needs and meet the requirements as a form of company whitening to the surrounding community
• Potential O&M Contract extension occurs if the PSC contract extension between EEES and SKK Migas and PPA between ES and PLN is also approved
• O&M market for energy in Indonesia is still wide

Threats

• Rupiah exchange rate against the dollar for Nobel Part purchases
• Delay in completion of the Mini LNG Plant project affects the cost of preparing the CEPA O&M LNG plant
• The operational activities of the power plant and mini LNG Plant can have several impacts on the environment, such as air, water, soil pollution, noise, and produce hazardous and toxic waste.
• Every year the government announces the results of the PROPER (Company • Performance Rating Program) in the environmental field and is always published annually and ranks companies for the category, Black, Red, Blue, Green, and Gold in ecological management
• PSC agreement between EEES, Ltd. and SKK Migas ends October 2022, Power • Plant Purchase Agreement (PPA) between ES, Ltd. and PLN ends October 2022, and this will have an impact on the O&M Contract breaking up between CEPA, Ltd. and ES, Ltd.
• If the contract extension is successful, then the new government policy in Minister of Energy and Mineral Resources Regulation No. 10 of 2017 requires IPP to follow the “Delivery or Pay” mechanism in addition to the “Take or Pay” mechanism that will affect the O&M Contract
• Government policy in the Minister of Energy and Mineral Resources Regulation No. 8 of 2017 for new contracts and extensions that change the PSC Cost recovery method with the Gross Split way, this condition will positively also affect the renewal of the gas sales agreement between EEES, Ltd. and ES, Ltd. and the O&M Contract between ES and CEPA, Ltd.
• Threats to private O&M companies in South Sulawesi (D&C Engineering, Poso Energi, Bakara Bumi Energi, Cogindo Daya Bersama, Bima Golden Powerindo, Sumber Daya Sewatama)

and opportunities the company has in order to continue to carry out this O&M business.

In the IFE and EFE analysis tables (Table 3), we obtained a total weight score of Strength 1,928 Weakness 0.905 Opportunity 1,864 and Threat 0.702. Next calculate internal and external analysis coordinates, coordinate of internal analysis (Total strength weight score−Total weakness weight score) = 1,928−0.905 = 1,023. Coordinate of External Analysis (Total score of probability weight−Total score of threat weight) = 1,864−0.702 = 1,162.

Whereas in Figure 1 shows the results of the analysis of the Cartesian diagram above, PT Consolidated Electric Power Asia is included in Quadrant 1, which is a very favorable situation for the company because it has the strength and opportunities that can be exploited. Based on Table 3 in the TOWS matrix of PT Consolidated Electric Power Asia, there are several strategies that are appropriate for the company, including:

1. Backward Integration Strategy, From the TOWS matrix included in this strategy, are SO-1, WO-1, and WO-7.
2. Market development, From the TOWS matrix included in this strategy, are SO-2, ST-4, and WO-5.
3. Development of O&M service products, From the TOWS matrix included in this strategy, are ST-2, ST-5, ST-6, SO-3, SO-4, WO-4, WO-5, and WO-6.

5. DISCUSSION

Some elements of the strategy that can be carried out by CEPA Ltd. in the future, as a supporting factor for the success of business operations and supporting the continuity of electricity supply, is a contract of cooperation with the industry of spare parts suppliers, considering the engine factor as a driving force and the element of production. With a cooperation contract with a major parts supplier, the opportunity to get positive feedback and the opportunity to increase production will be even more
Table 2: TOWS analysis strategy external

| SO - Strategy                                                                 | WO - Strategy                                                                 |
|-------------------------------------------------------------------------------|-------------------------------------------------------------------------------|
| 1. Immediately enter into a cooperation contract with a major parts supplier (S6, S7, S10+O1, O2) | 1. Maximize opportunities for cooperation with suppliers through LTSA or OPSA to guarantee parts approval so that machine availability and reliability is guaranteed (W1, W4, W6+O1, O2) |
| 2. Actively participating in tenders for O&M services for new and old power plants that were upgraded as a form of O&M market penetration in Indonesia (S1, S2, S3, S4, S5, S6, S7, S9, S10+O7, O8) | 2. Implement improvements to the payment process internally and communicate with the head office in HK (W2+O2) |
| 3. Maximizing internal human resources and combining them with a new workforce for the LNG Plant O&M team (S1+O3) | 3. A contract with the leading parts supplier will reduce CIT (W3+O1, O2) |
| 4. Provide optimal internal training as preparation for obtaining LNG Plant competency certification (S1, S2, S3+O4) | 4. With a contract with a major parts supplier, the opportunity to get training becomes excellent for the work of specialists (W7+O1, O2) |
| 5. Create a system procedure and implement it professionally (S10+O5) | 5. Website creation must be made to be able to take on other O&M markets (W9+O8) |
| 6. Provide training to local workers around the company such as basic Welder, Scaffolder and basic mechanics (S1, S7+O6) | 6. Send employees for training and certification to be able to have competence in conducting assessments (W6, W8+O7, O8) |
| 7. Improve performance and ensure consistent work optimally so that it can be used as bargaining power when contract extension (S1, S2, S3, S4, S5, S6, S7, S9, S10+O7, O8) | 7. Look for and maximize alternatives from several reconditioning companies to reduce dependence on OEMs (W4+O1, O2) |

| ST - Strategy                                                                 | WT - Strategy                                                                 |
|-------------------------------------------------------------------------------|-------------------------------------------------------------------------------|
| 1. If the transaction is in foreign currency, then the exchange rate as the basis for payment in rupiah value, the determination of the exchange rate is adjusted to the BI exchange rate and takes the highest value, to avoid exchange rate spikes at the time of payment. (S6+T1) | 1. Perform regular internal assessments to ensure that major outage delays are acceptable and not endanger the condition of the machine (W1, W2, W4, W6+T3) |
| 2. Maximize internal human resources to help new workers in the preparation of the O&M LNG Plant team (S1, S2, S3+T2) | 2. Make Training Need Analysis for CEPA LNG O&M and provide training internally (W5+T2) |
| 3. Implement standard environmental management and monitoring procedures based on international standards ISO 14001: 2015 (S10+T3, T4) | 3. Looking for new contract O&M opportunities in other fields in preparation if in 2022 the deal is not renewed (S1, S2, S3, S4, S5, S6, S7, S9, S10+T5) |
| 4. Improve performance and ensure consistent work optimally so that it can be used as a positive record in contract renewal (S1, S2, S3, S4, S5, S6, S7, S9, S10+T6, T7, T8) | 4. Maximizing contracts that are still 5 years away to demonstrate consistently efficient O&M capabilities (S1, S2, S3, S4, S5, S6, S7, S8, S9, S10+T8) |

O&M: Operation and maintenance

Figure 1: Diagram analysis of strength, weakness, opportunity, and threat

excellent. One of these (cooperation contracts) can be pursued, one of which is the re-construction of payment processes to structured and timely suppliers to increase the value of trust between the internal company and the supplier as an external party. Forms of
The O&M market for energy in Indonesia is still broad. Government policy in the Minister of Energy and Mineral Resources Regulation No. 8 of 2017 licensing and competency certification for CEPA O&M employees for mini LNG Plant must be prepared. Licensing and certification for CEPA O&M employees competencies for mini LNG Plant must be prepared.

The delay in completing the Mini LNG Plant project affects the cost of preparing the CEPA O&M.

A PSC agreement between PT EEES and SKK Migas ends October 2022, Power Plant Purchase Agreement (PPA) between PT ES and PLN ends October 2022, and this will have an impact on the O&M Contract breaking up between CEPA and ES.

If the contract extension is successful, then the new government policy in Minister of Energy and Mineral Resources Regulation No. 10 of 2017 requires IPP to follow the “Delivery or Pay” mechanism in addition to the “Take or Pay” mechanism that will affect the O&M Contract and Mineral Resources Regulation No. 8 of 2017 for new contracts and extensions that change the PSC Cost recovery method with the Gross Split method, and this condition will positively also affect the renewal of the gas sales agreement between EES and PT ES and the O&M Contract between ES and CEPA.

Threat against private O&M companies in South Sulawesi (D&C Engineering, Poso Energi, Bakara Bumi Energi, Cogindo Daya Bersama, Bima Golden Powerindo, Sumber Daya Sewatama)

Table 3: Internal factor evaluation and external factor evaluation

| No. | Rating of external factor priorities | Weight | Rating | Weight score |
|-----|-------------------------------------|--------|--------|--------------|
| 1.  | Enter into a contract with a noble part supplier through the LTSA method: Long term service agreement or OPSA: Operating plant service agreement | 0.150  | 4      | 0.599        |
| 2.  | Plan purchases and make agreements with spare part suppliers for the coming year at current prices | 0.086  | 4      | 0.345        |
| 3.  | Pre mobilization of the CEPA O&M LNG follows the progress of the Keera LNG project | 0.068  | 4      | 0.272        |
| 4.  | Licensing and competency certification for CEPA O&M employees for mini LNG Plant must be prepared. Licensing and certification for CEPA O&M employees competencies for mini LNG Plant must be prepared | 0.061  | 4      | 0.243        |
| 5.  | The company’s commitment to environmental management efforts must be stated in a protection policy | 0.045  | 3      | 0.136        |
| 6.  | Hire local workers according to the needs and meet the requirements as a form of company whitening to the surrounding community | 0.044  | 3      | 0.131        |
| 7.  | Potential O&M Contract extension occurs if the PSC contract extension between PT EEES and SKK Migas & PPA between PT ES & PLN is also approved | 0.023  | 3      | 0.070        |
| 8.  | The O&M market for energy in Indonesia is still broad | 0.023  | 3      | 0.068        |

Sub total | 1.00 | 2.566 |

Table 4: Pairwise comparison matrix scale

| Intensity of interest | Definition | Explanation |
|----------------------|------------|-------------|
| 1                    | Equally important element compared to other elements (Equal importance) | Both elements contribute equally to these properties. |
| 3                    | One element is slightly more important than the other elements (Moderate more importance) | Experience states a little in favor of one element |
| 5                    | One element is clearly more important than other elements (Essential, Strong more importance) | Experience shows strongly in favor of one element |
| 7                    | One element is clearly more important than another element (Demonstrated importance) | Experience shows strongly liked and dominant seen in practice |
| 9                    | One element is absolutely more important than another (Absolutely more importance) | Experience shows that one element is clearly more important |
| 2,4,6,8              | When in doubt between the two adjacent space values (gray area) | This value is given when compromise is needed |

O&M: Operation and maintenance

Table 3: Internal factor evaluation and external factor evaluation

cooperation can be done both involving the private sector and the government, including in terms of CSR optimizers. To maintain the continuity of the electricity supply business, as an effort to penetrate the market, keeping in mind the increasing consumer demand is to participate in several project auctions based on O&M Tender and the creation of a website as a digital-based promotion tool.

The drivers of production, which include aspects of human resources as intangible assets, play an essential role; therefore, the optimization of internal human resources is also a key element as a strategic policy unit of the company. Of course, it must also be supported by the application of fair and professional reward and punishment rules. Supports in terms of resource development can be achieved through training, for example, Basic Welder Scaffolder and Basic Mechanical.
Apart from what has been previously stated, given the uncertain economic conditions, the company’s strategy to deliver business management to be more optimal with minimal risk is transactions in the form of foreign currencies to avoid fluctuations in the exchange rate at the time of purchase or payment.

6. CONCLUSION

Based on the results of the strategy formulation that has been carried out with strategic management tools namely the SWOT/TOWS matrix, there are three alternative strategies per Consolidated Electric Power Asia; there are three, namely: (a) Backward Integration, this strategy tries to increase control over suppliers company by making a particular contract on the supplier of main parts or original equipment manufacturer (OEM). (b) Market development. This strategy introduces existing O&M services to new geographical areas. (c) Product or service development. This strategy is a strategy where companies increase sales by improving existing O&M products or services or developing O&M services for sectors other than the power generation sector.

Based on the results of this study, the suggestions that can be given to CEPA. Ltd. O&M so that the findings in this study can be input for management in the O&M service development strategy and strategy formulation needs to be done regularly to get a picture of a dynamic business environment, for example, once a year and discussed at the management review meeting.

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