

PROPOSED BUSINESS STRATEGY ADAPTING TO ENVIRONMENTAL CHANGES DUE TO THE PANDEMIC: A CASE STUDY OF MRO COMPANY

¹Alfia Kumala Nur Azizah.²Alibasjah Inggriantara

^{1,2}Master of Business Administration, School of Business and Management, Bandung Institute of Technology
Corresponding Author Email: alfia_azizah@sbm-itb.ac.id

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ABSTRACT

A company called Indo Aircraft Maintenance (IAM) is occupied in Maintenance, Repair and Overhaul (MRO) which has majority of market share in the domestic area. Previously, in March 2020 large-scale social restrictions (LSSR) has been implemented globally that limits activities affecting the number of airline passengers. IAM had a fragile condition as in 2019 IAM experienced a loss and in 2020 a decrease in revenue happened due to the pandemic. In order to recover, a formulation of a new business strategy is required. Following analysis of environmental condition using Porter's 5 forces, PESTEL, and VRIO tools, strategy formulation was carried out using IFE, EFE, and Internal-External Matrix. The analysis represents, the company is suitable to carried out hold and maintain strategy where market penetration and product development are the alternative strategies. Through the deliberation, market penetration is the right choice to create optimum results. Company business unit should not only focus on aircraft maintenance but other market segment also. Product development is not the main option that needs to be prioritized since it requires new technology capabilities to tapped new customer.

1. INTRODUCTION

The aviation industry includes aspects, manufacturing, maintenance, airports, and other types of air transportation, not only aircraft. Because of its broad reach in helping people travel, industry helps boost the economies of countries around the world. Creating more than 50 million jobs, total aviation generated \$ 2.7 trillion. Assuming as a country, aviation would be in the 20th position in terms of the largest GDP worldwide (IATA, 2018). Despite playing an important role, global business does not always run smoothly. The industry has been hit by a couple cases, namely when the SARS outbreak hit and the 9/11 incident which forced aviation to stop and resulting decrease every year. Once again, aviation receives an obstacle in 2020 when the Covid-19 pandemic begins to spread from Wuhan, China. Many countries have begun to limit contacts with its neighboring countries to minimize the spread. In addition, governments have decided to restrict social activities or what are commonly called large-scale social restrictions (LSSR). With the enactment of the new regulations, public transportation passengers including air have dropped dramatically in 2020. It was noted that there was a decrease of 1,865,900 aircraft passengers at Indonesia Main Airports (Badan Pusat Statistik, 2020). The reduced flight path has resulted in many fleets being rested so that the demand for MRO services is linearly related to the demand for airplane passengers. It is estimated that MRO revenue can decrease by 30-50% because customers such as aircraft companies want to reduce their expenses to the minimum including in terms of MRO expenses (Moody's Investor Service, 2020). Indo Aircraft Maintenance (IAM) is one of the companies affected by the pandemic. The majority of companies experienced losses during the LSSR, and IAM recorded a 35% decline in revenue until the first semester of 2020. Therefore, to be able to solve existing problems the company needs to have the right business strategy and be able to get through the pandemic with satisfactory performance. To be able to produce the desired strategy, the objectives of the study were determined, namely: (1) Identifying the company's environmental factors, (2) Designing a new business strategy that could help the company.

2. RESEARCH METHODOLOGY

The research method is a quantitative study where scores are obtained from interviews with company representative. Representative are stakeholders who are tasked with formulating company strategy and hold middle management positions. Representative accommodates various suggestions from all departments and devises a strategy for corporate. The value given is the weight and rating for IFE and EFE Matrix. The object of research is a maintenance, repair and overhaul company in Indonesia called Indo Aircraft Maintenance. Prior to the assessment, an environmental analysis was carried out using several tools. In formulating the strategy, there are 4 stages, namely (1) environmental analysis, (2) SWOT analysis, (3) input stage, and (4) matching stage. Environmental analysis or scanning is a comprehensive term that includes monitoring, evaluation, and dissemination of information relevant to the development of organizational strategies (Wheelen and Hunger, 2017). Strengths, weaknesses, opportunities, and threats that could disrupt or support the company's performance will be entered into the SWOT table to be calculated using the Internal Factor Evaluation and External Factor Evaluation Matrix.

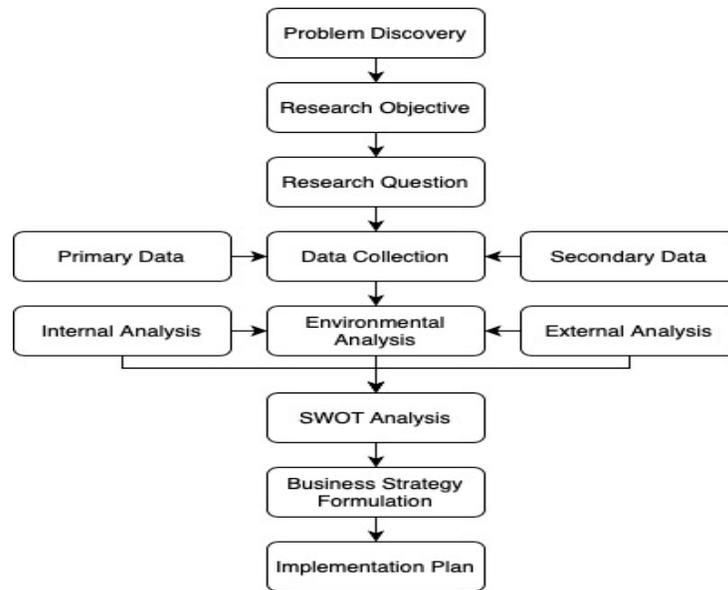


Fig. 1: Research Flow Diagram

3. ENVIRONMENTAL ANALYSIS

Environmental analysis is a comprehensive analysis that includes monitoring, evaluation and dissemination of information relevant to the development of corporate strategies to avoid potential threats and to ensure their long-term sustainability. Environmental analysis is divided into two, namely external and internal analysis.

3.1 External Analysis

The main goal of external analysis is to determine the opportunities and threats in an industry or any segment that will drive profitability, growth, and volatility.

3.1.1 Porter's 5 Forces

While observing the industry, companies need to assess the importance of the success of each of the five forces: threat of new entrants, competition among existing firms, threat of substitute products or services, bargaining power of buyers, and bargaining power of suppliers. The essence of strategy formulation is to overcome competition, even more so to fight for market share. In contrast, competition in an industry is rooted in what it is based on, and competitive forces that go beyond the foundation of an industry. Customers, suppliers, potential entrants and substitute products are all competitors who may be more or less prominent or active depending on the industry (Porter, 1979).

3.1.1.1 Threat of new entrants

The arrival of airline fleets and new entrants disrupted the industry and forced businesses to come up with new business models. The airline business has gradually evolved from a focus on in-house fleets to a third-party service offering centered on maintenance services (Frost and Sullivan, 2018). There is also a fleet dynamic that changes from being used for a full-service carrier (FSC) to a low-cost airline (LCC). Many customers also switch



to service that offer performance-based service, with the help of OEMs (Airbus and Boeing) that provide pay-per-use and subscription-based-service. In addition, manufacturers are offering customers long-term service contracts to broaden their presence in the MRO market. About 65% of manufacturing executives believe in their capabilities. However, global disruption from Covid-19 and economic downturn is predicted to soften market demand indefinitely (Deloitte, 2020). Therefore, it can be said that the threat of newcomers has a medium force.

3.1.1.2 Bargaining power of suppliers

Due to the downturn in economic conditions. Airbus, Boeing, and other suppliers or OEM are holding high force as the conditions that are being experienced are also decreasing, making suppliers are forced to manage their cash flow in order to survive. The core of the maintenance industry operations is materials while suppliers nowadays prioritize customers who can provide cash in advanced or clear payment plans. When the customer cannot provide certainty of payment, IAM cannot receive the requested item which hampers operational activities. The conclusion is that currently suppliers and vendors are holding high power because their force is important to support MRO operations.

3.1.1.3 Bargaining power of buyers

Buyers at IAM are divided into two, namely affiliated groups and non-affiliated groups. Affiliated groups hold the majority of revenue in the domestic market. Meanwhile in the international market, the majority is held by foreign airlines which is non-group. Before the pandemic occurred, the position of the buyer was already high. For the domestic market, the position of the affiliated group is the parent company. Meanwhile, in the global market, IAM is classified as a small player, so it must meet buyers' demands to gain higher credit. Even though at the moment, customers are demanding a lot of requests so that there is no other choice for IAM to fulfill those. The changes in the business model caused by industry dynamics, it can be concluded that currently buyers hold high forces.

3.1.1.4 Threat of substitute products or services

In MRO business there is a possibility of substitute, since it does not rule out that there will be alternative products or services to replace products and services offered by MRO such as IAM. Perhaps not in the near future, since many companies are currently holding back their capabilities and capacities. While the market demand is unstable until now, the threat to the emergence of substitute products is predicted not to be as much as the usual conditions because industry players are holding back their expenses as efficiently as possible and even cutting some of the facilities and resources.

3.1.1.5 Rivalry among existing competitors

IAM faces market competition both in Indonesia and abroad. In Indonesia, enterprise is included in four companies that are consistent in their MRO business. Considering other competitors also experienced difficulties, instead of competing, firm tried to enhance consolidation with small businesses and combine forces. There are approximately 74 MRO players in Indonesia. This large number has a market share which is divided into small shares where the largest position is occupied by IAM, with 49% in the domestic market. IAM has a strong position in Indonesia but overseas the position is reversed. Abroad, it is quite difficult to compete with other competitors which have bigger capabilities. Therefore, the rivalry to competitors is medium.

3.1.2 PESTEL Analysis

PESTEL framework allows company to scan, monitor, and evaluate several changes and trends in firm's macroenvironment. It provides a broad framework in which different macro environmental factors and their impact on performance can be thoroughly examined.

3.1.2.1 Political factors

The Ministry of Industry projects that the potential for the MRO industry in Indonesia will reach USD 2.2 billion in 2025. It is estimated that Indonesia will also be included in the top 10 world aviation markets in 2020, and will continue to rise to the top five in 2034. The aviation industry absorbs 87.7 million workers worldwide, either directly in the industry or, supporting industries. It is predicted that Indonesia will absorb as many as 12 to 15 thousand MRO experts in the next 15 years. Through adequate facilities and accompanied by infrastructure development in the air transportation sector, it is hoped that it can expand the MRO customer portfolio in Indonesia, improve its reputation in the global market, and most importantly assist the Government in increasing gross domestic product.

3.1.2.2 Economic factors

The buyers or customers faced by the company is mostly the airlines industry. In mid of 2020, Indonesia has received a lockdown status from 59 countries as the case of covid-19 patient is getting worse. The travel



restrictions will limit potential customers' opportunities to carry out maintenance in Indonesia. Approaching the end of 2020, many airlines declared bankruptcy making the market size is getting smaller. It is predicted that sustainability airlines will continue to decline until the end of 2020. Firms often have to deal with changes in the price level, which are a direct element of the quantity of money in any economy. The increasing resource costs faced by IAM in 2019 are caused by various issues. There was an increase in the cost of obtaining materials as well as an increase in the volume of subcontract work that had to be done due to the IAM cash flow condition, which was due to the condition of customer liquidity (poor liquidity of the domestic airline industry).

3.1.2.3 Sociocultural factors

Sociocultural factors are not only constantly changing but also different for each group, it is necessary to closely monitor these trends and consider their implications for company strategy. There are predictions that the MRO market for aerospace industry will increase by 5.5% in Indonesia and 4% globally. In the short term, orders for new aircraft are likely to decline or experience delays due to the impact of Covid-19, so maintenance of the existing fleet will be even more important. However, for the long term it is predicted that some airlines that are customers will invest in setting up captive or in-house MRO operations. Since it is predicted that the MRO market will continue to thrive and be sustainable in the future, firm needs to pay attention to the trends carried out by other MRO competitors. The Boeing 777X assembly process is still ongoing and Airbus plans to develop new plane development with zero-emissions, both OEMs need a large amount of resources to help complete development quickly. The need for resources with cheaper wage is greatly needed by manufacturers as the company needs to suppress expenditure as possible on the ongoing project.

3.1.2.4 Technological factors

The introduction of a new generation of wide-body aircraft indicates an increase in operating costs and efficiency. The increased efficiency has appropriate economic benefits in terms of fuel combustion, and other weights such as significantly lower maintenance costs. In addition, the more aircraft models that are modified by the aerospace manufacturer, the more complex the operation that will be done by MRO organization will be. The changes of technology drive the changes of business model in airline sector to be more cost-effective to win in the market and keep up with global business dynamics. IAM's capabilities are sufficiently developed to follow the market. However, there are some great capabilities for core operations that are still lacking. This is due to the low demand plus inadequate experience, also there are limited worker skills. For non-core operations there is a work is carried out by subcontracts such as airframe cleaning, component pooling, and other ancillary works. Some ancillary jobs are given to others to reduce the burden of labor costs that must be incurred, but unfortunately in 2019 subcontracting expenses have become a challenge as income that does not match expectations increases operating expenses.

3.1.2.5 Ecological factors

Ecological factors involve broad environmental issues including sustainable economic growth. The latest issue that IAM has encountered at this time is environmental changes or force majeure caused by the spread of the Covid-19 virus resulting in the company's operational termination as there is no activity from customers and the falling of customer causing management to fail in producing profit.

3.1.2.6 Legal factors

The issue of a new aircraft type could create a new type of regulation. Certification for new capabilities which is always developing is a challenge for the MRO industry as existing knowledge must be updated and training costs money. The industry may hesitate to expand or give up new service opportunities. Without a doubt, to be able to grow, if players has not add new certification, strategy to strengthen their position by increasing their reputation through existing capabilities is another option.

3.2 Internal Analysis

Internal analysis is an exploration of organizational competence, position, and the continuity of competition in the market. The data generated by internal analysis is important because it can be used to develop strategic planning objectives to sustain and grow the business.

3.2.1 Resource-Based Approach to VRIO Analysis

Internal analysis is carried out through the VRIO framework to assess the competitive implications of those resources. VRIO is a framework that describes and predicts a firm's competitive advantage. For resources to be competitive advantage, it has to be valuable, rare, costly to imitate, and organized or non-substitutable.



Table 1: VRIO Analysis for Indo Aircraft Maintenance

Resources	Valuable	Rare	Costly to Imitate	Organized	Competitive Consequences
Human Resources	✓	✓			Temporary competitive advantage
Facilities and Equipment	✓				Competitive parity
Served Market	✓	✓	✓		Temporary competitive advantage
Collaborations and Partnerships	✓	✓	✓	✓	Sustainable competitive advantage
Capability and Capacity	✓	✓	✓		Temporary competitive advantage
Market Share	✓	✓	✓		Temporary competitive advantage
Reputation	✓				Competitive parity
Utility	✓	✓	✓		Temporary competitive advantage
Status	✓	✓	✓		Temporary competitive advantage

Source: Authors Analysis, 2020

4. RESEARCH FINDINGS

From the environmental analysis, the important points are summarized in the SWOT table which is then scored by company representatives. The strength and weakness are from internal analysis and opportunity also threat are from external analysis of the company.

Table 2: SWOT Analysis of Indo Aircraft Maintenance

Strength	Symbol	Weakness	Symbol
Affordable wages	S1	Brand's reputation is not strong overseas	W1
Market power from affiliated group	S2	Limited capability has high market value	W2
State-owned company status	S3	Quality that have not been consistent	W3
Huge capacity of maintenance	S4	Too dependent on one market	W4
Cooperation with MRO	S5	The high utilization limits development	W5
Huge portfolio of aircraft maintenance	S6	Several KPI have not been reached	W6
Domestic market shares almost 50%	S7	Debt-to-Asset (DAR) increased	W7
The largest narrow-body hangar	S8	Loss of \$ 2,9 million in 2019	W8
		Average collection period value is high	W9
		Limited power by Government and Parent Company	W10
Opportunity	Symbol	Threat	Symbol
MRO is projected to grow after the global economic slowdown	O1	Airlines started set up their own MRO business	T1
There is potential in the ancillary business	O2	The emergence of global players in Indonesia	T2
Ample room to increase service coverage	O3	Regional markets affected by Covid-19 outbreak	T3
MRO employment increases with OEMs	O4	Market growth suppressed for lower costs	T4
MRO facilities in Indonesia is still low	O5	OEM capabilities increased to hinder MRO growth	T5
MRO in Indonesia is projected to grow	O6	Requirements/regulations for MRO companies	T6
New generation aircraft will cost more to service and replace	O7	Continuous increase in labor costs	T7
MRO gets full support from the government	O8	Reduction flight intensity	T8
		Countries have closed routes with Indonesia	T9
		Many airlines have declared bankruptcy	T10
MRO is projected to grow after the global economic slowdown	O1	Airlines started set up their own MRO business	T1

Source: Authors Analysis, 2020

4.1 Input Stage

In the first stage in strategy formulation, there are two calculations, namely the calculation of rating and scoring on the Internal Matrix and External Factor Evaluation or commonly known as IFE and EFE Matrix. At the input stage, there needs to be a strategist who assesses the rating and weight given, therefore the assessment is given by the General Manager of PT IAM.



4.1.1 Internal Factor Evaluation Matrix

Summary of internal-strategic audits through the Internal Factor Evaluation (IFE) Matrix. IFE matrix will summarize and evaluate the major strengths and weaknesses in the business area. No matter how many internal factors, the resulting total weighted score will lie between 1 to 4.

Table 3: Internal Factor Evaluation Matrix of Indo Aircraft Maintenance

Key Internal Factors	Symbol	Weight	Rating	Weighted Scores (Weight x Rating)
Strength (S)				
Affordable wages	S1	0,0385	4	0,1538
Market power from affiliated group	S2	0,0577	4	0,2308
State-owned company status	S3	0,0385	3	0,1154
Huge capacity of maintenance	S4	0,0769	4	0,3077
Cooperation with MRO	S5	0,0577	4	0,2308
Huge portfolio of aircraft maintenance	S6	0,0385	3	0,1154
Domestic market shares almost 50%	S7	0,0385	4	0,1538
The largest narrow-body hangar	S8	0,0577	4	0,2308
Total Weighted Strength				1,5385
Weakness (W)				
Brand's reputation is not strong overseas	W1	0,0577	1	0,05769
Limited capability has high market value	W2	0,0769	2	0,15385
Quality that have not been consistent	W3	0,0962	1	0,09615
Too dependent on one market	W4	0,0577	2	0,11538
The high utilization limits development	W5	0,0769	2	0,15385
Several KPI have not been reached	W6	0,0577	2	0,11538
Debt-to-Asset (DAR) increased	W7	0,0192	1	0,01923
Loss of \$ 2,9 million in 2019	W8	0,0385	2	0,07692
Average collection period value is high	W9	0,0577	1	0,05769
Limited power by Government and Parent Company	W10	0,0577	1	0,05769
Total Weighted Weakness				0,90385
IFE Matrix (S+W)				2,4423

Source: Representative of Indo Aircraft Maintenance, 2020

The final result of the calculated weighted score is 2.44 which is less than 2.5. It could mean that internally IAM is in a bad position because it is below average. The total weighted score of the strength and weakness factors contributed 1.54 and 0.9, respectively, although weighted strength was greater than weakness, apparently it was not strong enough to produce the desired output.

4.1.2 EFE Matrix

Same as IFE Matrix, the External Factor Evaluation (EFE) Matrix allows strategists to conclude and evaluate external conditions related to economic, market, environmental and other conditions. The weight and rating are carried out by GM of PT IAM. The rating can vary from 1 to 4.

Table 4: External Factor Evaluation Matrix of Indo Aircraft Maintenance

Key Internal Factors	Symbol	Weight	Rating	Weighted Scores (Weight x Rating)
Strength (S)				
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Total Weighted Weakness				0,90385
IFE Matrix (S+W)				2,4423

Source: Representative of Indo Aircraft Maintenance, 2020

For the EFE Matrix, the calculated weighted score is 2.64, which is more than 2.5. In contrast to the IFE Matrix, the calculation of the EFE Matrix implies that the organization responds to opportunities and threats from external environments. The company's strategy will be more effective if it is focused on existing opportunities and minimizing possible threats.

4.2 Matching Stage

The process of aligning external and internal factors is an important step in generating a feasible alternative strategy (David, 2019). In the matching stage, the tools used will rely on the information that has been provided from the input stage to align external and internal factors.

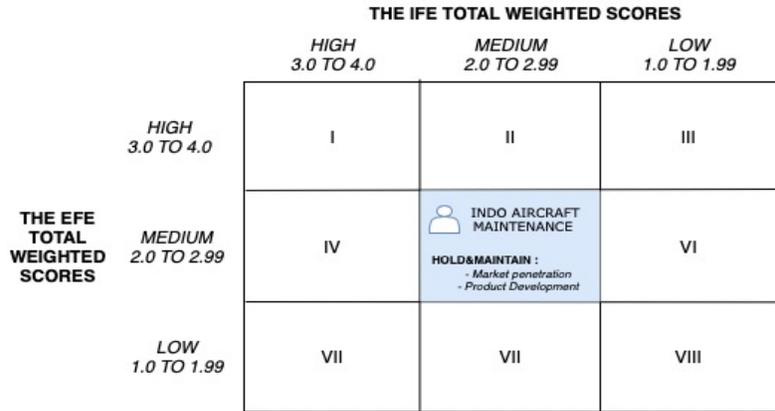


Fig. 2: Internal-External Matrix of Indo Aircraft Maintenance

IFE and EFE Matrix values will be mapped into the IE Matrix and the company position will be obtained in cell no. V. The hold and maintain strategy are an attempt to expand, but not aggressively. Companies can penetrate the market further or develop new products and modify existing products. According to Wheelen and Hunger, on the hold and maintain strategy, the company focuses on market development, a strategy in which a company or business unit captures a larger share of an existing market for current products through market penetration or develops new markets for current products. By looking at the existing financial conditions, IAM should strive to reduce expenses and maximize income. Market penetration can be beneficial as recovery efforts can take place more quickly for Domestic flight services because it is supported by geographical conditions. There are two flight services, namely passenger flights and cargo. Slowly, the affiliated group began to experience an increase in passengers. With the ease of mobility and renewed prevention efforts, the trend of increasing passenger numbers has occurred. For the cargo traffic, the increase occurred due to high public consumption data during the pandemic, which led to an increase in cargo usage. There are several business segments owned by IAM, the commercial aircraft maintenance, specialized aircraft, and the Industrial Gas Turbine Engine Maintenance. As to maximize market penetration, IAM should focus on the untapped market, namely IGTE and specialized aircraft maintenance. Other additions such as private jet and helicopter markets can also be worked on, because the two modes of transportation have the same maintenance concept as the technology capabilities already owned and enthusiasts of both modes are predicted to increase. Product development is not the main goal that needs to be prioritized since it requires new technology capabilities to tap new customer behavior. The formulation of new services aims to optimize revenue by spending additional expenses (research trial and error, new capabilities, new marketing effort, etc.), the fact is that the company seeks to minimize capital expenses so that this strategy is not appropriate to implement in the short term.



5. CONCLUSION

Indo Aircraft Maintenance has a strong position in the domestic area but to compete in foreign markets, there are still capabilities that are not yet acquired. Before the pandemic in 2019, the company experienced problems therefore it tried to strengthen its position by building cooperation with the aviation industry including MRO, OEM, and airlines. The arrival of the pandemic has made the activities of customers, namely the airlines industry decreased dramatically where they have a direct relationship which can affect the performance of the MRO industry. During LSSR, many fleets were rested, yet if aircrafts are not on a run, it is necessary to carry out regular maintenance. However, airlines were unable to make profit resulting unable to pay maintenance costs to MRO industry players such as Indo Aircraft Maintenance. Responding to a dynamic environment, a suitable strategy is needed. The company is faced with two alternative strategies, namely market penetration and product development. Product development requires additional requirements and the opportunity for product enthusiasts does not necessarily exist considering the decrease in flight intensity. There is a possibility that new product development can be done in the medium term but not in the near future because the company wants to reduce expenses. Therefore, the strategy that must be implemented as quickly as possible is market penetration. There are still many market segments that have not been maximized by IAM as evidenced by the largest revenue contributor being dominated by aircraft maintenance, while IAM still has another market segment with the same capability, namely heavy equipment maintenance such as turbines maintenance.

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