

Strategic Planning for Drone Company in Indonesia (Case: PT Terra Drone Indonesia)

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ABSTRACT: Terra Drone Indonesia has the vision to be the No. 1 drone service company in Southeast Asia and contribute to the nation's sustainable growth. The drone business condition in Indonesia is getting tight with competition and regulation. A new strategic plan should be proposed to answer the vision of Terra Drone Indonesia. Understand drone business opportunities to explore more for Indonesia's drone industry business issues. The internal environment (SWOT Analysis) and the external environment (5 forces, PESTEL) will be a study for the proposed business strategy. The feasibility study and new business strategy comparison analysis turn into a strategy implementation for Terra Drone Indonesia. 2 new drone businesses might be applicable in Indonesia. Those are Drone spraying and Drone light show businesses. These 2 applications also the drone services that can comply with the waiver drone operation in Indonesia. Drone Spraying complies with a specific airspace operation and drone light show is more than one drone operation. New business strategic planning should be arranged by TDID as a more narrow Strategy. Based on the analysis, drone light show business fit more. Low competition and higher financial projections are the key points compared to the drone spraying business. The implementation plan should be monitored well to make sure the new strategy solves the problem.

KEYWORDS: Drone business, Drone spraying, Drone light show, Indonesia drone, Strategic planning.

INTRODUCTION

A drone, also Unmanned Aircraft System (UAS), Unmanned Aerial Vehicle (UAV), or Remote Piloted Aircraft System (RPAS), is an aircraft with no onboard pilot, controlled remotely from an operating station. Based on the oxford dictionary, a drone definition is an aircraft without a pilot, controlled from the ground, used for taking photographs, dropping bombs, delivering goods, etc. The drone definition from Permenhub no.37 2020, Drone is an airplane/spacecraft/engine that functions with remote control itself using the laws of aerodynamics. Global conditions to reduce carbon emissions and promote renewable energy take part in the development of drone commercial and civil applications After further development, the drone is getting more convenient and affordable. By this, drone applications are trying to be a more effective and efficient solution for every sector.

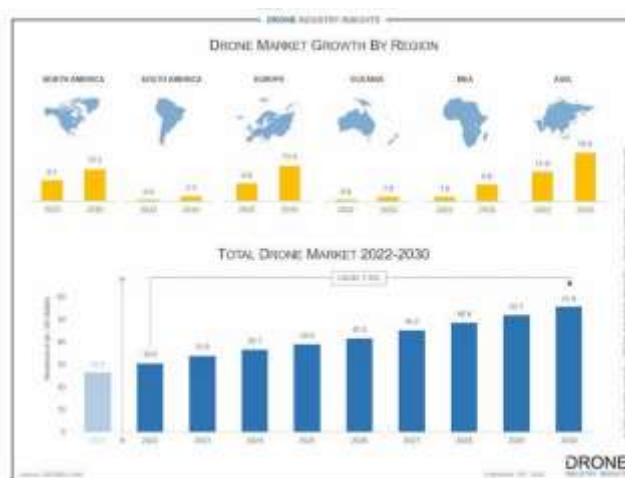


Figure 1. World Drone Market Size and Forecast 2022-2030



TDID, as one of the drone service providers in Indonesia, is facing many obstacles to achieving Terra Drone Vision, Being the Number 1 Drone Service Provider in Southeast Asia, and contributing to sustainable national growth. The first issue is the drone operation regulation in Indonesia is not clear. Even though the drone application operation is regulated, there are still some unclear procedures to get a flight permit, especially for drone survey and mapping activity. By this complication in drone flight permit issuance, drone operation in Indonesia is limited. This limitation might reduce the number of drone projects and reduce the drone market size in Indonesia. The last issue is the drone technology application in Indonesia is also limited. The limitation can come from the client's company regulations, unproven drone methodology, and resistance to the new proven methodology by drone. An aggressive penetration into every sector is needed to show the benefit of drone technology as a more effective and efficient solution.

Current Indonesian drone regulations, consisting of the drone flight permit complication, drone registration, and pilot certification, can reduce the number of drones project in Indonesia. The reduction of drones project in Indonesia won't be good for the drone industry since it will be difficult for the drone service provider to show the effectiveness and efficiency of the technology. The complication of the flight permit and other regulations also affect the factor for new drone implementation. The new drone application that might don't need a flight permit complication might increase the drone project that will increase revenue. Good strategic planning should be offered to address TDID's business issue and for the growth of the drone business industry in Indonesia

LITERATURE REVIEW

A. Drone Business in Indonesia

Based on the Drone Industry Insight Drone Market Report 2022-2030 (Zanelli, 2022), the drone market share in Asia will have a CAGR of more than 19.4% from 2022-2030. Asia, including Indonesia, have a major role in adapting drone technology and developing new drone technology in the global market. Based on Asosiasi Sistem & Teknologi Tanpa Awak (ASTTA), the industrial drone population in Indonesia is around 5,000-10.000 units and around 2,500 certified pilots in Indonesia and it's still growing. ASTTA create a market survey year 2016-2020 in 2021, based on the participant, drone activity estimated that the market share in Indonesia from 2016 to 2020 is 160 billion rupiahs and 80 billion rupiahs only in 2020. In the next year, ASTTA do another market survey for 2021-2023, based on the participant, the drone activity estimated market share for 2021 and 2022 are 200 billion rupiahs and 250 billion rupiahs. Based on that information, the optimism of the drone market future in Indonesia can be considered as high.

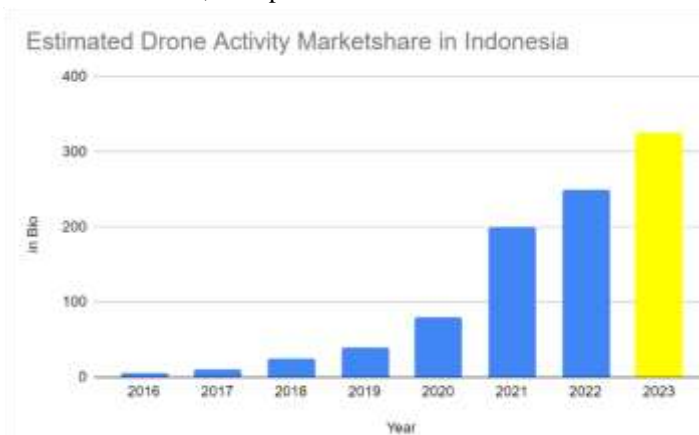


Figure 2. Indonesia Drone Activity Market Share 2016-2023

B. Indonesia Drone Ecosystem

The industry ecosystem should be defined so it will be easier to analyze the condition. The drone Ecosystem is already defined in Indonesia. Based on Asosiasi Sistem dan Teknologi Tanpa Awak (ASTTA), drone ecosystems in Indonesia have 5 big components consisting of technology developers, Standardization regulators, the Manufacturers Industry, Drone application users, and the Public. The technology developers consist of universities and research agencies. The developers focused on proofing the technology and the application. Standardization regulators consist of airspace, operation, and implementation regulator. These regulators are important to the drone business in Indonesia, especially for this research. Indonesia also has some drone manufacturers. Drone

application users can be a drone service provider company or a company that applied drone technology for their operation. Some of the companies can also have an association for drone applications. The last is public participation in the drone ecosystem. Most of the drone applications in Indonesia are for photography and videography and the public is the most use of these applications. All of the users should be a pilot and there are some communities and associations created by the public. The drone ecosystem in Indonesia is getting more crowded from time to time. With the development of the ecosystem, the drone market business in Indonesia should be increasing.



Figure 3. Indonesia Drone Ecosystem Map

C. Indonesia Drone Regulation

Indonesia Drone Regulation is important for the drone business in Indonesia. The drone operation regulation in Indonesia can be explained based on Figure 6. Regulating drone operations in Indonesia is crucial to ensure safety, manage airspace effectively, privacy and security concerns, environmental impact, and promote public acceptance. By implementing appropriate regulations, authorities can strike a balance between facilitating the growth of the drone industry and safeguarding the interests of society. Even though most drone activity is regulated, some procedure is not an issue yet. This unclear drone operation regulation is impacting the drone industry business in Indonesia.

Based on Ministry of Transportation Regulation 63 tahun 2021 sub-chapter E, some drone operations can be waived. The drone that can be waived is operation from a moving vehicle, night flight operation, VLOS operation, visual observer requirement, more than one drone operation, airspace priority between drones and other aircraft operation, specific airspace operation, and drone operation limitations (speed, altitude, etc.). This drone waiver regulation will serve as the basis for regulating the operations of drones that have never been conducted before.

D. Strategic Planning Process

Scenario planning is a way to explore possible futures of a company for long-term targets (Schoemaker, 1995: Lindgren & Bandhold, 2003) This process is the tool that will help the organization to prepare the strategic business plan. A good strategic plan will keep the company going forward even if there are coming to changes in the market environment (Mullins 2010, 34). The component of this process contains Situational Analysis, Strategy, and Implementation (Witcher, 2020). The process needs the purpose and the vision of TDID will be the purpose for this process. A situational analysis is needed to learn more about how to set a strategy. Based on the strategy, an implementation plan can be set to achieve the purpose.

Situational Analysis is an analysis that consists the information on the external and internal conditions of the company. The external environment is the industry in which the company operates and the competitive forces that affect the company's performance from the outside, from a more macro and micro perspective of how the external environment influences a company's search for

competitive advantage (Rothaermel,2021). The component of the external analysis are including PESTEL, Porter’s Five Forces, and Competitor Analysis (Hong Tu, 2013). PESTEL is used to identify affecting factors inside Indonesia while Porter’s Five Forces is used to identify the attractiveness of the industry. Competitor analysis is needed for the complete overall picture of the external market environment where the company operates. Internal analysis is needed for resources and the capabilities of the company. This analysis will generate awareness of an internal condition of the firm’s strengths and weaknesses with those from an analysis of external opportunities and threats (Rothaermel,2021). SWOT analysis is used to assist the company to determine its pros and cons to face the environment’s changes and to understand its position to differentiate itself in the market competition

A competitive strategy for the company is needed to distinguish one strategy from another business player in the market. One of the tools that could be used to create the strategy is Porter’s Four Generic Competitive Advantage (Porter, 1985). The cost leadership strategy is a strategy to put cost-saving products and put low pricing as a competitive advantage. This strategy works best because of a lot competitors provide the same products and the competition between the players is high. The differentiation strategy is to propose some products that can reach a broader target. This strategy works best when there are many ways to differentiate the products and the rapid change in the technology and features to follow. The proposed strategy discussed in the research will be on a more narrow focus since TDID already did the strategy that approaches a more broad target.

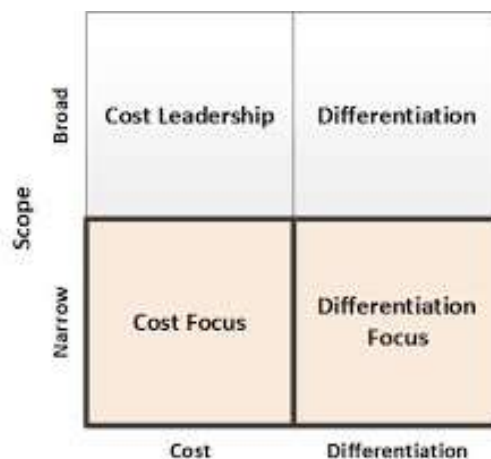


Figure 4. Porter’s Four Generic Competitive Advantages (Porter, 1985)

After the strategy is defined, an implementation plan for the strategy should be created. The first important part of the implementation is to design a fit organizational structure for the proposed strategy (Daft, 2012). After that, the implementation schedule should be made to make sure the implementation is applicable. The schedule should explain the steps and the milestone for every step so the management can monitor the process of implementation. Understanding the best practice by doing benchmarking is important to create a more compatible plan for the company (Thompson, 2018)



Figure 4. The process of identifying best practices (Thompson, 2018)



E. Latest Drone Application as A New Business Strategy

Based on the research by TDID, 2 new drone businesses might be applicable in Indonesia that will be future business lines. Those are Drone spraying business and the Drone light show business. These 2 applications also the drone services that can comply with the waiver drone operation in Indonesia. Drone Spraying complies with a specific airspace operation and drone light show is more than one drone operation.

Drone spraying services might be a solution for new drone technology applications that can be provided by TDID. Spraying using drones is a service that has recently been provided by several Drone Service Providers (DSP) in Indonesia and has been used by several large corporations in the plantation & forestry industry such as Sinarmas, Asian Agri, April Group, etc. TDID has conducted observations, market analysis, and feasibility studies regarding this service line and concluded that this service line can give TDID a competitive advantage and advantage over other competitors. In addition, currently, the market price of spraying services using drones is still quite well maintained, the demand in the market is still growing, while the supply side cannot catch up due to limited capital owned by existing players, so it is very interesting to be worked on seriously by TDID.

Drone light show services refer to the use of drones that the equipped with lights to create synchronized aerial displays. These displays can be programmed to create intricate patterns and formations in the night sky, such as images, logos, and other custom designs. In Indonesia, drone light shows are becoming increasingly popular and are being used in a variety of events such as weddings, music festivals, and corporate events. These shows are typically organized by event management companies that specialize in creating visually stunning displays. Overall, the growing popularity of drone light shows in Indonesia highlights the increasing use of technology to create engaging and memorable experiences for audiences, whether it's for entertainment, marketing, or tourism purposes.

METHODOLOGY

The research design is needed for this research. This framework will help the author to formulate the business strategy for TDID in current conditions. Understanding drone business opportunity to explore more for the drone industry business issue in Indonesia. The internal environment (SWOT Analysis) and the external environment (5 forces, PESTEL) will be a study for the proposed business strategy. The feasibility study and new business strategy comparison analysis turn into a strategy implementation for TDID. The data analysis method in this research is qualitative research. Qualitative research is a research method that focuses on understanding and exploring people's experiences, perceptions, behaviors, and attitudes in-depth. It aims to provide insights into the meanings, motivations, and social contexts that shape human behavior. Some of the data will contain numbers but all the numbers will be converted into a statement based on an analysis of the people's perceptions.

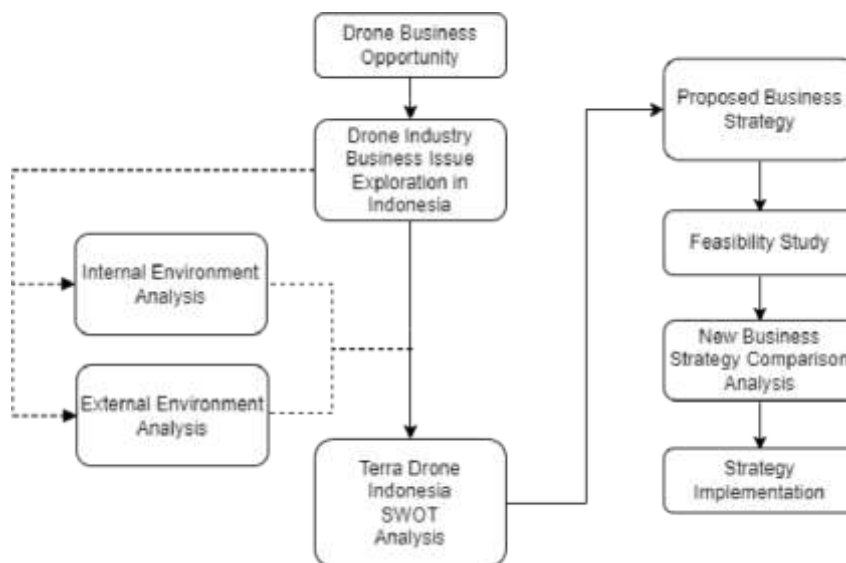


Figure 5. Research Design



RESULT AND DISCUSSIONS SWOT

Analysis

Table 1. TDID SWOT Analysis

Strength and Weakness

Strength	Weakness
<ol style="list-style-type: none"> 1. Popularity and connection to regulators in the drone industry 2. Many resources with versatile capabilities can be applied in several sectors 3. Part of Terra Drone Corporation 	<ol style="list-style-type: none"> 1. Lack of specialization in several sectors 2. Related to “expensive” image 3. Poor business strategy for the future drone business

Opportunities and threats

Opportunities	Threats
<ol style="list-style-type: none"> 1. Many new drone applications can be offered 2. Some players couldn’t survive the competition 3. Have partnership agreements with several drone business players. 	<ol style="list-style-type: none"> 1. The surveying and inspection market starting to be saturated 2. Drone players always come 3. The highest revenue stream already turned into a red ocean

Based on SWOT Analysis, a proposed strategy that can fit the analysis is penetrating a new drone service business line. TDID proposes a lot of drone services and products but there are still several options that can be offered in the Indonesia drone market. Based on the strength, some new drone applications can be done since TDID can discuss directly with the regulator to start the business. By versatile capabilities of TDID, as long it is drone-related will be easier for TDID can set up the team. The connection to Terra Drone Corporation as an international company that is connected to other drone technology all around the world will help to get more information and also capital access. Even though TDID has several weaknesses, the lack of specialization can be differentiated from other competitors. TDID can also focus on new applications that also related to higher prices compared to other services. This new drone service should be a new strategy that is more sustainable in the drone industry. From the opportunities, new drone services are most likely easier to find since there are still a lot of applications that hadn’t been brought to Indonesia and TDID can choose a partner to work with for new drone applications. The new application that has a high complexity might be good so new competitors won’t come earlier. The new drone service should answer the threat of the current that is already saturated and the highest revenue already turned into a red ocean

PESTEL Analysis

Political

- Most drone export-import is easy in Indonesia.
- Some drone applications are regulated by the government. Economy
- The drone solution is considered a lower-price solution even though provides better value.
- Investment in a drone can’t be considered a fixed asset. Social
- Clients always hope that drone technology should always be a better solution - There are several drone associations and communities in Indonesia. Technology
- Drone manufacturer technology in Indonesia is still in the home factory stage and limited drone applications - Most of the drone technologies should be imported.

Environmental

- The electrical drone is more popular for many applications compared to gasoline-based drones. - The drone can provide more efficient solutions, especially carbon print.



Legal

- Many drone operation regulation is unregulated yet
- The current drone flight permit procedure is complicated and takes a long time.

PESTEL analysis will be a reference to decide which strategy proposed will fit more to the external condition of TDID. Based on the strategy proposed, penetrating a new drone business line can be supported in several aspects. From the Political and legal aspects, the connection of TDID to regulators should help TDID to start a new business line and still comply with the regulations. As a part of Terra Drone Corporations, access to world drone technology that is not available in Indonesia should be easier. The new business line should also provide more value on environmental, social, and economic aspects.

Competitor Analysis

Table 2. TDID Competitor Analysis

	<i>TDID</i>	<i>Company A</i>	<i>Company B</i>	<i>Company C</i>	<i>Company D</i>
Founded Years	Founded in 2016	Founded in 2016	Founded in 2014	Founded in 2021	Founded in 1968
Employees	30-50 employees	201-500 employees	30-50 employees	51-200 employees	1000-5000 employees
Services	Survey, Inspection, Geophysical, training, and consultancy	The survey, Spraying, IOT	Survey, Inspections	The survey, spraying, IoT	Survey, certification
Products	DJI, Quantum System, Swellpro, Sensys, Applanix	DIY drone	DJI, Autel	Quantum System, EAvision	DJI, Quantum System, Delair
Sectors	Agriculture, Mining, Construction, O&G, and others	Agriculture	Agriculture, Mining, Construction, O&G, and others	Agriculture	Mining
Instagram followers	3.606 followers	1.572 followers	5.179 followers	1.447 followers	912 followers
Notes	Most vary sectors, services, and products.	Focus on the applications agriculture sector	Distributor of DJI in Indonesia	Focus on agriculture and mining training	The most experienced company in the mining sector

Based on the competitor analysis, survey services are the most popular services in the drone industry. The drone survey market is already turned into the red ocean market because all of the players can provide these services. By the analysis, the strategy for the new drone business line is aligned with the competitive advantage of TDID. The experience in various sectors, services, and products should be an advantage if TDID will provide a new business line.

PROPOSED BUSINESS SOLUTIONS

To decide between those 2 new drone business lines, the author will use the decision matrix. The parameter will be based on internal analysis, external analysis, and opportunity analysis. The weight for situational analysis and opportunity analysis is divided into 2, 50% per parameter. Every sub-parameter weight was decided based on an interview with the CEO. The scoring per parameter is in the range of 1-3 based on the suitability of the parameters with the new business lines. The maximum score is 300. The matrix decision analysis is as follows:



Table 3. TDID New Strategy Analysis

Parameters	Analysis	Weight	Drone Spr	aying	Drone Light Show
Internal Analysis					
<u>Strength</u>					
Popularity and connection to regulators in the drone industry	Should and can follow regulations for new drone application	0.02	3.00	6.25	3.00 6.25
Many resources with versatile capabilities can be applied in several sectors	Have capabilities on any new drone application	0.02	3.00	6.25	3.00 6.25
Part of Terra Drone Corporation	Easier to business capital for the new business line	0.02	3.00	6.25	3.00 6.25
<u>Weakness</u>					
Lack of specialization in several sectors	Can be more focused as a differentiation strategy	0.02	1.00	2.08	3.00 6.25
Related to “expensive” image	Targetting higher numbers in other business sectors	0.02	1.00	2.08	3.00 6.25
Poor business strategy for the future drone business	Should start a new business line that will be more sustainable in the future	0.02	2.00	4.17	2.00 4.17
<u>Opportunities</u>					
Many new drone applications can be offered	Can choose new applications that fit in TDID conditions	0.02	3.00	6.25	3.00 6.25
Some players couldn’t survive the competition	Can choose high complexity new drone business line that would be difficult for competitors to enter the market	0.02	2.00	4.17	3.00 6.25
Have partnership agreements with several drone business players.	Can start a new drone business with a partnership with more experience new drone business players	0.02	2.00	4.17	1.00 2.08
<u>Threats</u>					
The market starting to be saturated	The new drone business line wouldn’t be saturated yet	0.02	2.00	4.17	3.00 6.25
New competitors always come	Can start a business that has high complexity or a pioneer in the new business	0.02	2.00	4.17	2.00 4.17
The highest revenue stream already turned into a red ocean	The new drone business line should be a blue ocean market business	0.02	3.00	6.25	3.00 6.25



External Analysis								
PESTEL	From the Political and legal aspects, TDID's connection to regulators should comply with the regulations. Part of Terra Drone Corporation, connected to drone technology all over the world and capital access.	0.05	3.00	15.00			3.00	15.00
Porter's 5 Forces	The new drone business line has higher attractiveness in the industry	0.10	1.00	10.00			3.00	30.00
Competitor Analysis	The new drone business line has lower competition between the big players.	0.10	2.00	20.00			3.00	30.00
Opportunity Analysis								
Workflow	The complication of the workflow and the readiness of TDID to the workflow.	0.10	3.00	30.00			2.00	20.00
Required Investment	The number of investment initial costs.	0.20	3.00	60.00			1.00	20.00
Financial projection	Higher ROA and ROI	0.20	2.00	40.00			3.00	60.00
Result		1.00		231.25	77.08%			241.67 80.56%

Based on the matrix analysis, the score of the drone spraying business is 231.25 out of 300 (77.08%) and the drone light show business is 241.67 out of 300 (80.56%). The drone light show business got a higher score compared to the drone spraying business. Drone light show business can be a more differentiation strategy since there is no player so far in Indonesia. The drone light show business also offers higher financial projections compared to the drone spraying business. One of the most challenging parts of the star drone light show business is the initial cost is high. To start a drone show business, an investor is needed.

An implementation schedule should be planned to monitor the implementation plan of a strategy. The milestone can be measured by the objective of the activities achieved during the scheduled plan. Every activity should have a PIC who will be in charge of every activity.



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