

Strengthening Business Strategy For Ferry Business Amid Technological Advancement Through Scenario Planning Approach

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ABSTRACT : An examination of ASDP's internal, external, transactional, and contextual surroundings reveals crucial aspects that impact its operations as a ferry service in the midst of a technology megatrend. Qualitative exploratory research was employed to collect data through informal conversations, interviews, focus groups, and case studies, with a particular emphasis on flexibility. The identification of two critical uncertainties, including "Customer Behavior" and "Technology Trend & Adoption," serves as the foundation for the creation of four scenarios. *Pianissimo*: ASDP has the least favorable conditions due to low technology adoption and diminishing client preferences for ferry service. *Mezzo Piano* refers to a situation where technology adoption is slow but customer behavior is advanced. *Mezzo Forte*, on the other hand, describes a scenario where technology adoption is rapid but customer support is insufficient. Lastly, *Fortissimo* represents the ideal scenario where technology trends are aligned and customer behavior is supportive. ASDP will closely monitor early warning signs in order to adjust its methods with precision to assure readiness for forthcoming changes.

KEYWORDS - critical uncertainties, customer behaviour, ferry industry, scenario planning, technology trends.

I. INTRODUCTION

The transportation sector significantly contributes in fostering economic development in Indonesia. However, it also experiences substantial challenges due to the inherent traits of an archipelagic nation and uneven infrastructure development across the region. Thus, The Government of Indonesia (GoI) committed to continue building the infrastructures to enhance transportation systems in order to promote fairness and decrease the high logistics expenses. According to Government Program Plan 2022 there are several initiatives to support this strategy, including the establishment of 23 ports to enhance maritime connectivity, the construction of access roads for crucial transportation infrastructure such ports, airports, and terminals, and the development of 25 ports for crossings, lakes, and rivers.

The ferry industry is one of the important transportation modes in Indonesia's transportation ecosystem, given the country's unique geographical configuration as an archipelago consisting of over 17,000 islands with coastal regions. This sector is vital for connecting islands and crossing bodies of water where bridges are not feasible or economical. It usually uses a Roll-On/Roll-Off (RoRo) ship which is specially designed for transporting people, goods, and vehicles across short and long distances. The RORO ferry segment is anticipated to maintain a substantial market share, primarily due to its adaptability and effectiveness. It provides efficient loading and unloading of both passengers and vehicles, making them important for marine transportation to cater the demands of both commuters and cargo transportation.

In Indonesia, the ferry industry is managed by various owners, including state-owned, private operators, and local governments. ASDP is the stated-owned company that has been involved in providing ferry transportation services and managing ports for over five decades. ASDP currently operates 27 branch offices and oversees the management of 37 ports. There are 225 vessels in total that are utilized to operate around 300 routes.

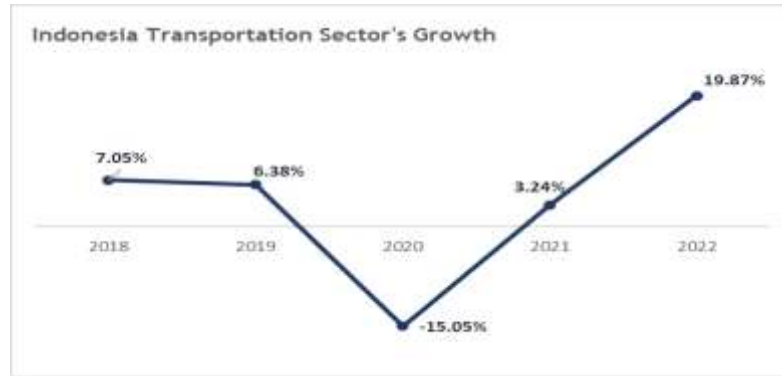


Figure 1 Transportation Sector's Growth
Sources: Indonesia Central Bureau of Statistics, 2022

1.1 Business Issues

During the time when the Company is working to recover from the pandemic and is working toward overcoming global issues, it is also confronted with the obstacles that come with the industrial era 5.0. The fifth industrial revolution strives to combine cognitive computing skills with human intelligence, in contrast to the fourth industrial revolution, which is centered on the automation of activities and the elimination of human involvement in the production process. One of the components of this stage is the adoption of a human-centric approach to digital technology, which includes the implementation of artificial intelligence [1]. Earlier, The World Economic Forum predicts the existence of 6 megatrends in the future that will also impact society such as People and internet, Computing, Communications and storage everywhere, The Internet of Things, Artificial intelligence (AI) and big data, The sharing economy and distributed trust, and The digitization of matter [2]. The transformation created by digital technology in the transportation sector has the potential to contribute to the automation of business operations, the improvement of accuracy and cost-effectiveness, the reduction of vehicle downtime, and the reduction of the risk of human errors.

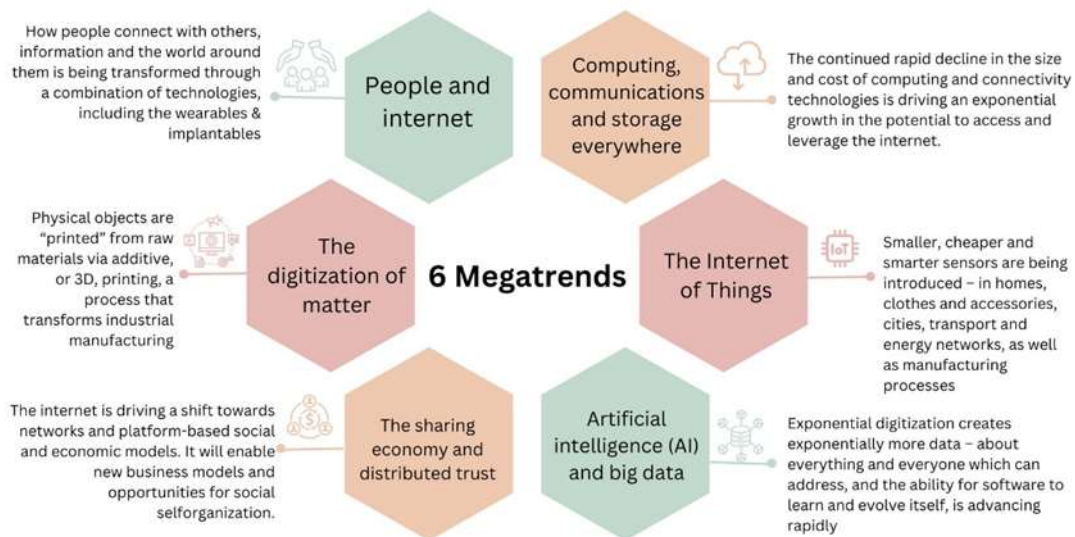


Figure 2 The 6 Megatrend in Technology That Shape Society
(Sources: World Economic Forum)

As part of its digital transformation, ASDP launched Ferizy in the year 2020. Ferizy is the only reservation app currently available. In spite of the fact that there is an improvement being made to the assurance of revenue, the financial performance in the following year has not yet attained the aim. However, there have been certain digital transformation attempts that have not yet resulted in the achievement of the IT maturity target. Therefore, the ASDP needs to come up with innovative strategies in order to address the problems that were described earlier, while also addressing the challenges that would be given by future technology breakthroughs.

1.2 Objectives of The Study

This study aims to explore potential solutions that can serve as a bridge between the existing strategy and the likely circumstances in the ferry sector over the next 5 years, as it adapts to the technology megatrend era. Additionally, it aims to examine the diverse factors from both the internal and external environments that have substantial impacts on shaping the future of the firm. The primary goals of this research are:

- 1) to identify the key factors and the critical uncertainties that will influence the ferry sector in Indonesia in the next 5 years, considering the prevailing technological megatrends.
- 2) To investigate and evaluate the possible outcomes for the company in the upcoming 5 years.
- 3) To ascertain the optimal business methods that can enhance the company's preparedness for the future.

II. LITERATURE REVIEW

2.1 Scenario Planning

Scenarios and forecasts differ in their approach. Scenarios involve examining a variety of potential outcomes that arise from uncertainty, whereas forecasts aim to determine the most probable course of action and estimate uncertainties. Forecasting tends to conceal the risks and results in single-point projections. The approach of forecasting is usually more quantitative. Whereas, in scenario planning clarifying risks is the focus that results in adaptive understanding. The approaches are more qualitative than quantitative [3].

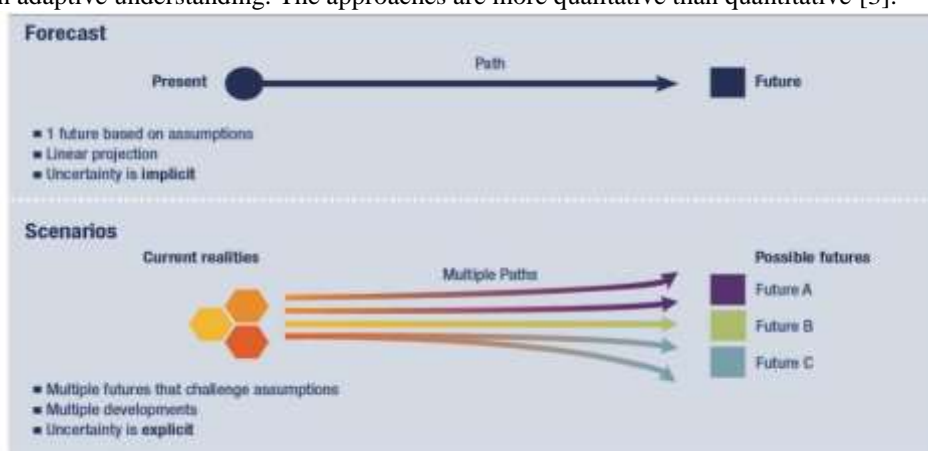


Figure 3 Forecasting Versus Scenario Planning
(Sources: World Economic Forum)

Scenario planning is well-known for its early use by Shell oil company to predict the different oil crises of the early 1970s and to emerge in better shape than competitors [4]. Because of their effectiveness in times of uncertainty and complexity, scenario planning approaches are becoming increasingly popular in today's era of unpredictability, innovation, and change which encourages strategic thinking by generating different possibilities in the future [5].

There is no one-size-fits-all strategy to scenario planning, and the literature review indicates that there are various approaches for creating scenarios that share many characteristics which are mostly practitioner-driven approaches. In general, there are three types of scenario planning as follows.

- Adaptive: This approach aims to learn and articulate future scenarios to enable organizations to adapt and thrive in a variety of possible futures [6].
- Transformative: This strategy is not only used in visualizing the future but also actively influencing the current circumstance to have an impact on what may occur in the future [6].
- Strategic reframing: learn about and make futures explicit for the organization by reframing and rethinking the current situation, with views regarding futures, to allow intervention in its strategic choices [7].

This study will employ adaptive scenario planning which involves the development of strategies and plans that enable an organization to effectively adapt, survive, and succeed in various potential future situations. According to Garvin and Levesque [8] scenario-planning formulation is outlined according to the following steps:

1. Orientation: This step entails obtaining background data, conducting preliminary interviews to identify the stakeholders, identifying the main issues to be addressed, and specifying the time frame and field of focus
2. Exploration: This stage involves thorough study and workshop sessions to identify and enhance comprehension of the key factors and significant uncertainties related to the key focal issues
3. Scenario and Narrative Creation : After conducting a thorough analysis and synthesis process, the scenario is structured at this step by utilizing the selected core driving forces. This is then followed by the creation of

- narratives. A scenario framework is constructed using four well-defined quadrants that represent varying levels of uncertainty in the future. Each significant uncertainty is expressed within a 2x2 matrix.
4. Options & Considerations: This stage comprises the development of implications and the evaluation of options. This analysis will examine the impact of the scenario on the industry, business, and option selections to facilitate the decision-making process. It is essential to evaluate the strength and reliability of each scenario.
 5. Integration: A well-executed scenario plan is a repeated occurrence that is integrated into the decision-making process in multiple ways with the support of leading indicators or early warning signals. Early warning signals are used to modify options and strategies by indicating the likelihood that particular scenarios will occur and unfold in a particular way.

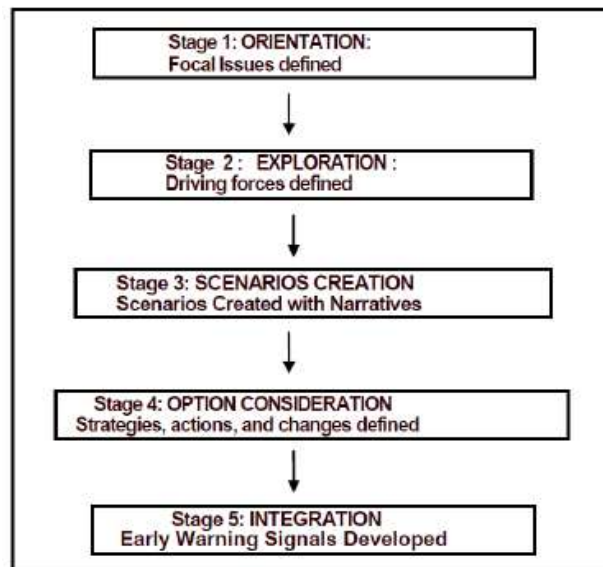


Figure 4 Steps of Scenario Planning Stages

2.2 Environment Analysis

The environment analysis conducted using PESTLE analysis is to identify and analyze external factors that are beyond the control of an organization and may potentially affect that entity [9]. The industry in which a firm operates is situated within a broader environmental framework known as the macro-environment. The six main elements of the macro environment can have their strategic relevance evaluated using PESTEL [10]. These elements according to de Klerk et.al include:

- a) Political factors refer to the processes and acts undertaken by government entities that might have an impact on an organization's decisions and behaviors, political will, government stability, stakeholder engagement, geo-political relationships, and others.
- b) Economic factors primarily consist of macroeconomic influences that impact the whole economy. Macroeconomics examines the forces and trends that impact the whole economy, such as inflation, unemployment, economic growth, gross domestic product (GDP), fiscal and monetary policy, and international trade and financial ties.
- c) Sociocultural factors refer to the cultural, normative, and value-based aspects of society. Since these variables vary throughout groups, the organization must keep paying attention on them and assess how they may affect their strategy. Another sociocultural component is demographic, which includes population characteristics related to age, gender, family size, ethnicity, sexual orientation, religion, and socioeconomic status. Similarly to other sociocultural elements, it also brings along both opportunities and risks.
- d) Technological factors incorporate the utilization of knowledge to develop novel processes and products. The impact of globalization, characterized by rapid and constant change, serves as a reminder to all modern organizations to adapt and embrace technological advancements.
- e) Ecological/environmental factors are influenced by overarching environmental concerns such as the natural environment, global warming, and sustainable economic growth. Organizations are mutually reliant, cohabit, and are intricately connected with the natural environment. It is important to handle these interactions in a responsible and sustainable manner.

- f) Legal factors entail the authoritative results that are evident in laws, mandates, rules, and court rulings. Regulatory changes typically have a simultaneous impact on the entire industry.

2.3 Five Forces Model

One of the most powerful and widely used tool for diagnosing the principal competitive pressures in the market is the five forces framework[11]. This framework holds that competitive pressures on companies within an industry come from 5 sources [12] including:

- a) Competition from rival. Rival is described as companies working at the same level in the value chain and within the same segment. Intense competition typically results in competing to retain clients and leads to severe price competition, which reduces the profitability of industry players.
- b) Buyers. Buyers are intermediaries or end-customers who procure the products or services of the industry. Strong purchasers can negotiate lower prices, which could result in reduced earnings for industry players if there isn't a corresponding drop in cost.
- c) Suppliers. Suppliers are individuals or companies who provide inputs, such as raw materials and services. Major suppliers can diminish the industry's profitability by imposing excessive costs for the inputs they provide.
- d) The threat of new entrants. It is determined by the level of ease with which they can enter the sector. Price reductions and a decline in profitability may result from a significant threat of new entrants.
- e) Substitutes. A substitute is a product or service that offers similar functional benefit to purchasers. Substitute items that work well have the potential to lower prices and/or attract customers away from competitors, therefore decreasing the profitability of the sector.



Figure 5 Five Forces Framework (Porter)

The key objective using PESTEL dan Porter's Forces framework is to obtain comprehensive and holistic insights into the driving forces, based on both primary and secondary data, as depicted in the figures below.



Figure 6 The Outside-in perspective of Scenario Planning[13]

2.4 Conceptual Framework

Conceptual frameworks are comprehensive frameworks that integrate the thought process of the entire research process. Diagrams are primarily used to precisely outline the components or variables of the study

issue, with their interactions depicted through the use of arrows. The entire process must align with the variables, their relationships, and the context. Researchers have the freedom to utilize established frameworks, but they must adapt them to align with the specific context and research goals of their study [14].

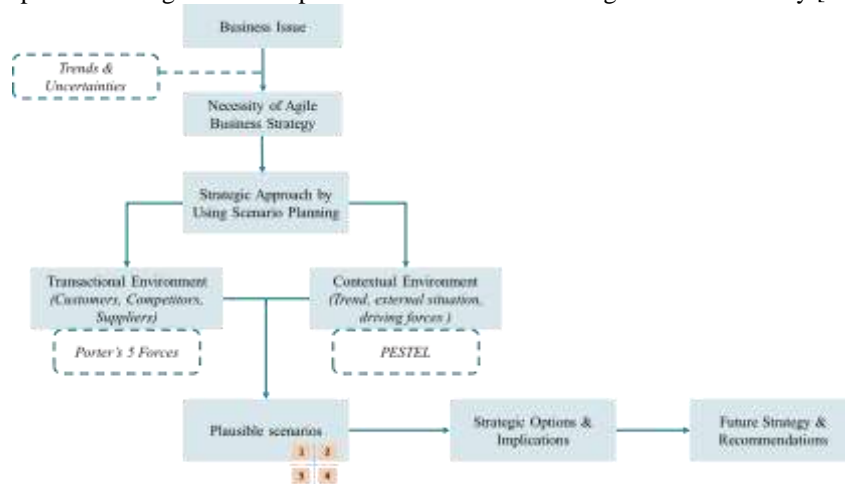


Figure 7 Conceptual Framework (author's elaboration)

III. RESEARCH METHODOLOGY

This research using frameworks of Scenario Planning by Garvin and Levesque [8]. The concept started by identifying the business issues that can be the key focal in this framework and then to explore what can be the driving forces by analysing contextual environment and transactional environment. The company's contextual environment consists of a larger "macro-environment" as well as the nearby industry and competitive environments [10]. The author is employing PESTEL analysis to analyse the external environment. The transactional environment analysis will be carried out to identify competition power round the business. Porter's 5 Forces approach will be employed to identify the transactional environment ranging from the power from customer's side, competitors, and suppliers.

In this research study, the author selects exploratory research using qualitative method. Exploratory research frequently utilizes qualitative methodologies for data collection, including casual talks with consumers, employees, and managers, as well as interviews, focus groups, and case studies. The main characteristic of this type of research lays in its inherent flexibility [15]. The primary data were obtained from interview with the relevant sources representing the experts from global ferry association, transportation & economy expert, regulations/government, and information technology experts. The author also conduct Focus Group Discussion to ensure that the iterative process is anticipated during the explorations of creating the scenario framework. As for the secondary data, it will be obtained through literature review.

Qualitative data is obtained from spoken words (verbal data), written, typed, or printed words (textual data), and still or visual data [16]. After gathering the primary and secondary data, the author will employ the content/thematic analysis. Thematic Analysis is a method employed for analyzing qualitative data by identifying recurring themes or patterns within a dataset (such as a series of interviews, observations, documents, diaries or websites being analyzed). Data that share similarities in context and definition will be classified into various categories of driving forces.

Certain forces hold more significance than others among these uncertainties. Those uncertain driving forces that are most likely to define or significantly alter the way the future unfolds around the key focal issues are ranked in terms of uncertainty and importance to the organization. The two most impactful and informative factors are referred to as key uncertainties. In order to determine the crucial uncertainties, the author will utilize the influence diagram to demonstrate the interplay between various elements and their impact on distinct outcomes [17].

IV. RESULTAND DISCUSSION

4.1 Scenario Development.

A. Stage 1 - Orientation

Following the analysis of secondary data and the pre-discussion and interview stages of primary data collection, the author is convinced that ASDP will benefit substantially from the use of advanced digital technology in shaping and enhancing future performance. Therefore the Key Focal Issue in this research is : What will be the future of ASDP in the next 5 years amid technology megatrends?

B, Stage 2 – Exploration

In this phase, the author converted the audio from the interview data into text and classified it into several non-unique trends. The comprehensive representation of internal, transactional, and contextual factors, based on interview and additional data mentioned in PESTEL, is depicted in the figures 8.

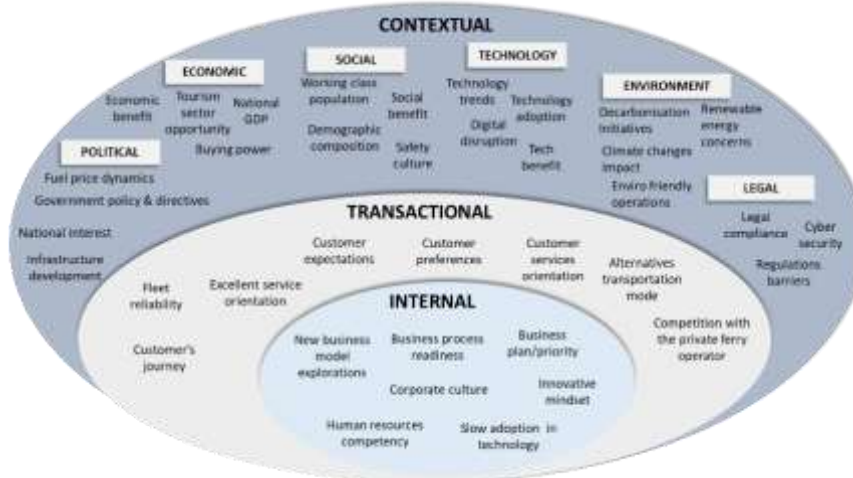


Figure 8 Identified Trends and Driving Forces
(Sources: author’s elaboration)

In order to better understand the connections and interconnections that exist between the various driving forces, the author developed an influence diagram. The first thing that the author does is segregate the components that fall into the trend category. These factors are categorized as being either inevitably or extremely unlikely to undergo a significant shift within the framework of the timeframe. Changes in demographics are the first trend, and they have the potential to influence the business plan and strategy aspect. Second, there is a trend known as fuel price volatility, which has the potential to impact political policy as a matter of national interest as well as decisions on business plans and strategies. Once the trend or preset factor has been identified, the remaining factors are categorized as uncertainty [8].

Another uncertain factor is Legal & Regulation which can affect the way an organization conduct the Business Plan & Strategy and also influenced by the National Interest, Cyber security risk, and the development of Tech Trend & Adoption. The Environment Concerns aspect can have an influence on strategic business decisions not only at the corporate level and also at the national level. The next factor, Service quality expectation, has a reciprocal relationship with the business plan made by the Company but also simultaneously affects the critical customer behavior factor and Tech trends & adoption. Another factor in the form of internal readiness also influences the formation of strategic business focus, service quality deliverables and also the degree of technology adoption within the organization. In the end, all these factors boil down to 2 critical uncertainties, namely Customer behavior and Technology trends & adoption.

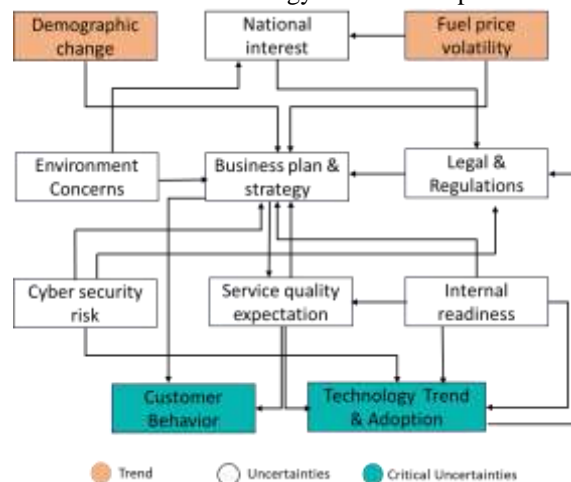


Figure 9 Identified Trends and Driving Forces
(Sources: author’s elaboration)

The author then assessed the level of impact and uncertainty of the previously identified driving forces with the corporate planning and innovation team. This stage was conducted to determine which driving forces were categorized as critical uncertainties. According to Garvin & Levesque, critical uncertainties are driving forces that most likely determine or change the situation around the focal issue significantly. Based on the identified map, the author selected Technology Trend & adoption and Customer Behavior as critical uncertainties



Figure 10 Identified Trends and Driving Forces (Sources: author’s elaboration)

C.Stage 3 – Scenario & Narratives Creation

The scenarios are developed through an iterative discussion among members of the scenario planning team, who explore how the driving forces, including both predetermined factors and critical uncertainties, would interact and influence outcomes in many plausible ways. As a consequence, four situations were drawn. Every scenario is assigned a title, narrative, and illustration that accurately depict the situation within it. The narrative provides an in-depth overview of the specific circumstances in each scenario and highlighting the key distinguishing features between them. Importantly, it also offers insights into the future of the ferry sector over the next five years.



Figure 11 Identified Trends and Driving Forces (Sources: author’s elaboration)

Scenario 1 : Pianissimo

Pianissimo depicts a firm that runs with minimal exposure and lacks recognition for its exceptional qualities. The new Presidency administration began its term amid substantial controversy, especially in domestic affairs, leading to a level of uncertainty in both the political and economic sphere. Regarding the economy, there has been a lack of substantial growth in the Gross Domestic Product (GDP), and other crucial economic initiatives, such as downstream, are still encountering obstacles. In terms of transportation, the government has

made a significant policy choice to build a bridge across the Sunda Strait, connecting Java and Sumatra, in order to accelerate development and improve connectivity. The implementation of new infrastructure leads to a shift in customer preferences, specifically towards road travel as opposed to using ferry crossings. The current technological megatrend is advancing, however, ferry firms are encountering challenges in implementing the latest technology due to its incompatibility with their outdated vessel systems and the necessity to emphasize cost effectiveness. Furthermore, the government's inability to ensure the security of digital enterprises is worsening the cyber security dangers faced by the country.

Scenario 2 : Mezzo Piano

The consumers in this scenario are supportive, but the acceptance and trends of technology are quite low, giving the impression that the industry is struggling. The new president's administration has successfully increased the national GDP. Consequently, the consumer's ability to buy goods and services improved. During this phase, clients exhibit an advanced level of technological knowledge and rapidly embrace new technologies available in the market. As a result, users generally choose services that offer a user-friendly and seamless experience. The continuing high cost of technology investment is attributed to insufficient infrastructure and a shortage of prepared resources. There is still a deficiency in the ferry industry when it comes to acquiring and implementing advanced technology. Certain organizations face the challenge of dealing with a lack of internal competence. The existing regulations do not currently offer assistance for the most recent technology or the recruitment of external specialists, which presents difficulties in investing in and establishing new digital enterprises in the Indonesian market.

Scenario 3 : Mezzo Forte

In this situation, the company has incorporated cutting-edge technology in multiple domains, although the level of productivity remains mostly unchanged due to the conservative nature of the customers. Multiple news reports exist detailing the company's performance; however, the company's brand has not been prominent in the minds of customers. In general, governments tend to be supportive of the transportation industry due to its role in facilitating connectivity among the many islands in an archipelago. The present political atmosphere is favorable for investment in the advancement of domestic technologies. However, the speed of technological progress does not match the rate at which the public at large adopts the technology. At the moment, numerous consumers encounter a feeling of discomfort when utilizing technology, impeding their ability to fully exploit its benefits. The acceptability level is low as a result of technological limitations, such as infrastructure limits or limited competence. The aim of regulation is to conform to the prevailing technological trend in order facilitate investment and the acquisition of technology.

Scenario 4 : Fortissimo

Fortissimo is a term used to describe a corporation that is widely recognized for its outstanding performance and is the preferred choice for transportation. The current administration of the Presidency is persistently working towards the advancement and promotion of the marine industry, specifically in its support of the ferry company across the entire archipelago. Indonesia's GDP growth has been enhanced by the demographic bonus, as the nation benefits on its substantial working-age population, leading to a rise in purchasing power. Ferry operators are currently witnessing a shift in their business strategy, aiming to differentiate themselves by providing excellent and premium service to their customers. Furthermore, the ferry has emerged as the preferred mode of transportation, functioning not only as a means of crossing bodies of water but also for travel options. The extent of internet usage is increasing, and a substantial number of persons have become accustomed to making online reservations and executing payment transactions. The network is highly advanced and provides comprehensive coverage, even in remote regions. The market is becoming accustomed to observing the utilization and collaboration of many megatrend technologies. The government has effectively safeguarded the security of cyber business transactions. The measure to mitigate cyber threats has been enforced.

D. Stage 4 – Options and Consideration

In this section the scenario planning process will continue with the exploration of the implication of each scenario to identify potential strategy to overcome the future.

Tabel 1 Implications & Options List

Scenario	Implications	Options
1. Pianissimo <i>Slow Tech Trend & Adoption</i> <i>Conservative Cust. Behavior</i>	1. Massive bridge construction in the main route of ASDP 2. ASDP mostly operates the non-commercial routes 3. The business facing challenges of technology infrastructure readiness	1. Focus on incremental innovations 2. Pilot programs and phased rollouts in introducing new technology 3. Exploring fit-for-purpose technology to enhance customer's experiences 4. Extensive exploitation in the

	<ol style="list-style-type: none"> Low customer's acquisition Business stagnancy Low technology adoption rate by pioneer (non-commercial) route's customers. Rare internal technology expert 	<ol style="list-style-type: none"> current business area Maximizing long-term contracts to obtain competitive unit price Focus on the increase and monetizing customer's experiences Maximizing intercompany transaction
<p>2. Mezzo Piano <i>Slow Tech Trend & Adoption</i></p> <p><i>Supportive Customer Behavior</i></p>	<ol style="list-style-type: none"> ASDP faces barriers in attaining the large operational efficiencies that newer technologies might offer Market dominated by customers who expect high-quality and personalized service over cutting-edge technology. Many complaints about the failure of the reservation systems Customer shift to other transportation modes Inadequate system to prevent fraudulence practices 	<ol style="list-style-type: none"> Exploring fit-for-purpose technology to enhance customer's experiences Focus on implementing newer technology for optimizing operation and maintenance system Upgrade the current business while exploring the new product to offer Strengthening the customer-orientation program/product Increase customer engagement Opt for external experts to fulfil competency gap
<p>3. Mezzo Forte <i>Rapid Tech Trend & Adoption</i></p> <p><i>Conservative Cust. Behavior</i></p>	<ol style="list-style-type: none"> Advance ticketing online system Number of inhouse technological experts are growing Underutilized of online ticketing system Many people use travel agents to assist in buying ticket ASDP integrates advanced technologies such as AI, IoT, and automation that can streamline operations, reduce costs, and enhance safety 	<ol style="list-style-type: none"> Educate customers to adopt to company's applications Enhance the traditional business process (validation, etc) Offer the incentive or extra benefit in adopting a digital system Incentives program for customers Provide online and offline customer care service to help the customers get used to the system.
<p>4. Fortissimo <i>Rapid Tech Trend & Adoption</i></p> <p><i>Supportive Customer Behavior</i></p>	<ol style="list-style-type: none"> High competition among ferry operator Fast innovation Technology used not only for operational excellence purposes but also to extend customer experiences Fraud risk can be reduced due to the digitization process 	<ol style="list-style-type: none"> Digital & automation system throughout all customer's journey Maintaining the key unique differentiator compared to competitors (e.g: quality of user experience, packages, customer engagement, immersive experience, etc)

E. Stage 5 – Integration – Early Warning Signals

In the process of making strategic decisions for management, integration is the procedure by which scenarios, narratives, implications, and alternatives are combined to produce useful information. As part of the integration process, a number of future early warning signals are monitored. For each of the scenarios, a number of leading indications are being filled in.

Table 2 Early Warning Signals and Indicators

Critical Uncertainties	Indicator	Scenario 1: Pianissimo	Scenario 2: Mezzo Piano	Scenario 3: Mezzo Forte	Scenario 4: Fortissimo
<i>Technology trend and adoption</i>	<i>IT Maturity Level</i>	<3	<3	3-3.5	>3.5
	<i>Ferizy review score (out of 5)</i>	<2.5	2.5 – 3.5	3.5-4.0	>4.0
	<i>6 Megatrends</i>	Laggards	Late Majority	Early	Pioneer or

	<i>Technology Adoption</i>			Majority	Early Adopters
	<i>Cyber threat</i>	Low	Moderate	Low	High
Customer behavior & Business aspect	<i>Number of purchases through agents</i>	>=50%	40-50%	30-40%	<30%
	<i>% Commercial routes</i>	<30%	30-35%	30-35%	>35%
	<i>Profit trend</i>	Stagnant to slightly increase	Steady to slightly increase	Moderate increase	Moderate to significant increase

5.2 Implementation Plan

To develop the implementation strategy, the author refers to the strategic dimension which consists of 3 dimensions: customer excitement, competitive leadership, and portfolio enrichment [18]. On each plan also required the approaches used for technology management such as internal leveraging, external exploitation or combined.

In the Pianissimo scenario, the main objective is to optimize the economic worth of the current technology. In order to capitalize on the possibility of operating more pioneer routes, it is imperative for the company to enhance its fundamental business capabilities and competitiveness in the ferry sector and port services. The adoption of more sophisticated technology is conducted by evaluating the organization's capabilities in order to improve efficiency and profitability.

The main focus in the Mezzo Piano scenario is on devising strategies to cater to the sophisticated and lucrative consumer segment. Therefore, the corporation must enhance its technological utilization in order to match customer expectations. Furthermore, the organization must establish strategies that enhance the value proposition for clients, such as prioritizing sustainability, ensuring robust anti-fraud measures, and time schedule assurance.

In Mezzo Forte scenario the organization is well-prepared to adopt cutting-edge technologies. Therefore, the strategy is concentrated around supporting clients in adopting the technology that is offered by the organization and ensuring that the innovation resonates with better business efficiency and profitability when it is implemented.

In Fortissimo scenario, the corporation emphasizes technological superiority as a competitive advantage offered to customers in comparison to its rivals. AI machine learning, Internet of Things, and automation will all play a significant role in the technology system of the organization. In this sense, the utilization of cutting-edge technology is designed to improve the operational efficiency of the organization, streamline corporate processes by means of specialization and automation (utilizing intelligent systems), and adapt to the ever-changing dynamics of the market, which necessitate the supply of services in a timely manner while maintaining strict transparency.

V. CONCLUSION

The conclusion to all study questions is as follows:

1. Several driving forces have been identified from the study, which potentially unfolds around and impact to the business of ASDP as a ferry service company amid a technological megatrend. Those forces are Business plan & strategy, Customer Behavior, Cyber security risk, Demographic change, Environment Concerns, Fuel price volatility, Internal readiness, Legal & Regulations, National interest, Service quality expectation, Social & Economic Benefit, and Technology Trend & Adoption.
2. 2 factors are categorized as critical uncertainties based on the high level of uncertainty of occurrence and the high impact if the factor occurs, they are "Customer Behavior" and "Technology Trend & Adoption". These two factors form the basis of the framework for developing plausible scenarios in the next stage.
3. Four scenarios have been derived from the two crucial uncertainties mentioned above. These scenarios are: (i) The Pianissimo scenario refers to a future situation in the ferry industry where technology trends & adoption are low while customer preferences (behavior) for ferry transportation are declining. This is the least favorable situation that may happen for ASDP in the future. (ii) The Mezzo Piano scenario, it is characterized by slow technology trends and adoption, but highly advanced customer behavior. (iii) The Mezzo Forte scenario. In this scenario, technology trends and adoption are running very quickly but are not as well supported by customer behavior, (iv) The Fortissimo scenario is the most ideal and expected condition where technology trends and adoption run according to the megatrend and are supported by customer behavior that is much more mature/supportive.
4. ASDP's future business operations will be directed by monitoring early warning signals to anticipate and

adjust to the direction in which the future is moving. This will enable ASDP to effectively prepare and implement various business strategies. The implementation of the company's strategic strategy will be guided by three core principles: customer enthusiasm, competitive leadership, and portfolio enrichment. A conclusion section must be included and should indicate clearly the advantages, limitations, and possible applications of the paper. Although a conclusion may review the main points of the paper, do not replicate the abstract as the conclusion. A conclusion might elaborate on the importance of the work or suggest applications and extensions.

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