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## The aviation transportation: Opportunities and Challenges

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### Abstract

Vietnam's aviation industry is witnessing a strong development with a large development potential. In particular, with the active participation of private businesses in this field, passengers have more and more options when traveling needs. Representatives of airlines said that the pressure of competition is great, but each airline chooses its own path towards competition for mutual development. Over the past 10 years (2008-2018), the aviation industry of Vietnam has made great progress. In 2008, Vietnam only had 60 aircraft, but now has more than tripled, to 192 aircraft. Previously, the fleet was mainly only Vietnam Airlines, but now there are many private businesses such as Vietjet, Bamboo Airways ... 60 domestic and 130 international routes compared to 25 domestic and 54 international routes in 2008.

**Keywords:** Air transport, Vietnam, airport, infrastructure, transportation

### I. Introduction

For more than thirty years of innovation, the aviation industry of Vietnam has been one of the leading fields, representing the transportation industry and the country with strong international integration and has achieved many outstanding achievements. The development of the aviation industry has made an important contribution to promoting socio-economic development, expanding international trade, attracting foreign investment, helping Vietnam become an attractive tourist destination among children. Eyes of international friends. Especially, in the past 10 years, Vietnam's air transport market has made great progress, with a continuous growth of 2 digits, an average of 15.8% / year. It is worth noting that despite the high growth rate, Vietnam's aviation has not allowed to cause accidents causing human losses.

According to statistics from the Vietnam Aviation Administration, in the period of 2014-2018, the aviation transport market of Vietnam had a high and continuous growth with an average growth rate of 20.5% in the period and passengers. 13.2% on goods. In 2019, Vietnam's aviation market will welcome new Bamboo Airway airline to be put into operation on January 16, 2019. The growth rate of the market in 2019 is forecast to continue to be maintained at double digits with a growth rate of 11.8% in passengers and 3% in goods compared to 2018. Total passenger transport reached 78.3 million passengers and freight reached more than 1.25 million tons. Forecast for 2020, the total market will reach 86.8 million visitors, an increase of 10.8% compared to 2019; approximately 1.4 million tons of goods, an increase of 11% compared to 2019. Speaking at a seminar held by the Ministry of Transport on 11/12 in Hanoi, Deputy Minister Le Anh Tuan said, currently we have 5 airlines with the participation of private investors, foreign investors with a variety of types from traditional airlines to low-cost airlines ... contributing to building a Aviation market is highly competitive. Dozens of airports have been upgraded and newly built across the country, including new and modern international airport terminals meeting international standards such as Tan Son Nhat, Noi Bai and Da Nang. Phu Quoc, Cam Ranh, Van Don ... Especially, in the past 10 years, Vietnam's air transport market has made great progress, with a continuous growth of 2 digits. Average of 15.8% per year. According to the report of the International Air Transport Association (IATA), Vietnam is recognized as one of the aviation

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markets with the fastest annual growth rate in the world, higher than the regional average. Asia Pacific. However, there are also a lot of complicated issues that arise, including with state management agencies, and businesses operating in the aviation sector. In fact, some inadequacies arise that threaten security threats, aviation safety, unsatisfactory service quality (slow delays, canceled flights) and the appearance of competition unhealthy.

Vietnam's aviation industry is witnessing a strong development with large development potential. In particular, with the active participation of private businesses in this field, passengers have more and more options when they need to travel. Representatives of airlines said that the pressure of competition is great, but each airline chooses its own path towards competition for mutual development. Over the past 10 years (2008-2018), the aviation industry of Vietnam has made remarkable progress. In 2008, Vietnam had only 60 aircraft, but now it has more than tripled to 192 aircraft. Previously, the fleet was mainly only Vietnam Airlines, but now there are many private businesses such as Vietjet, Bamboo Airways, etc. The flight network of Vietnam aviation also has many changes after 10 years with nearly 60 domestic routes and 130 international routes compared to 25 domestic routes and 54 international routes in 2008. Also in 2008, international flights mainly flew through Noi Bai, Da Nang, and Tan Son. Most, now connected to many other airports, including Cat Bi, Can Tho, Cam Ranh, Lien Khuong, Phu Quoc ... This has created a relatively solid and sustainable development of the industry. International organizations also rate Vietnam's aviation as the fastest growth in the world, with the growth rate always reaching double digits (about 29%) [1]. In global integration, Vietnam's air transport industry is entering an experience point on customs procedure reform and is accompanied by challenges. In reforming customs procedures, Vietnam needs to give priority to the development of electronic customs procedures and close coordination among relevant sectors. Vietnamese customs should be strengthened and enforced common standards when participating. Many speakers said that the level of socialization of airport investment and operation in Vietnam was too low, and airport infrastructure in some provinces was in redundant capacity. To take advantage of this opportunity, Vietnam needs to combine the strengths of Hanoi - Ho Chi Minh City to create an attraction to attract more foreign investors. To meet the increasing demands of customers, Vietnam's air transport industry needs more small aircraft to transport goods [2].

## II. Opportunities and challenges

### A. Challenges for Vietnam's aviation industry

Customers do not want to wait 5-6 days to have a shipment that they want the goods to be shipped immediately, many experts at the workshop commented. Vietnam's air transport industry is entering a new phase of growth through policies to liberalize and open the sky. The entry of new investors, promising to create more competition in the aviation market. It not only better meets the growing needs of customers but also opens up flying opportunities for everyone [3]. The growth of this market over the past time has put pressure on airport infrastructure, parking lots, thus, passenger service quality is affected. Vietnam's aviation market has a lot of potentials, however, the rapid growth of

this market over the past time has put pressure on the airport and bus terminal infrastructure, thereby, the quality of passenger services guests are affected. In addition, the competition on price, human resources ... poses challenges for managers and airlines to solve. According to the evaluation of the Vietnam Aviation Administration, the aviation industry of Vietnam is supported by many favorable factors such as the territory stretching with most of the area being mountainous terrain, and the road traffic infrastructure is still abundant. In addition, the income per capita and the proportion of the middle-class population are increasing, and the travel time by air is often much shorter than other forms of transportation. Vietnam's aviation market currently has the participation of 68 foreign airlines from 25 countries, territories and 6 Vietnamese airlines. In the international market, 68 foreign airlines and 3 Vietnamese airlines are operating nearly 130 international routes [4].

However, survival and growth are a completely different story. The proof is the case of Air Mekong and Indochina Airlines, which only operated for a few years before pitying to withdraw from the Vietnamese market. Entering the market late, the enormous challenges facing the airline industry still loom on the demand for each airline to find its own path. Currently, the development of the number of aircraft is in conflict with the development of aviation infrastructure. In particular, it is forecasted that the demand for Vietnamese airlines to stay overnight at airports, especially Noi Bai and Tan Son Nhat, will increase in the period from now to 2020. Industry Aviation in Vietnam has 3 very important components, namely airlines, followed by infrastructure; among them are airports and the third is the regulatory array to ensure safety and security. These three segments must always be guaranteed to operate in a smooth and efficient manner so that the aviation industry can thrive. If one part is not strong or having problems, it would difficult for the aviation industry to thrive [5]. Also according to the plan to 2020, the entire port has 23 airports; including 10 international ports, 13 inland ports. Ports like Noi Bai, Da Nang, Cam Ranh, Tan Son Nhat ... are identified as the main gateways along the length of the country. The North has 7 airports and 4 international airports, the Central has 7 ports and 3 international ports, the South has 9 ports and 3 international airports. By 2030, we plan 28 airports across the country. Accordingly, Noi Bai, Tan Son Nhat, Long Thanh, and Cam Ranh will be the big gateways. However, some airports such as Tan Son Nhat and Noi Bai are under great pressure. In contrast, there are airports with good infrastructure such as Can Tho and Phu Quoc airport ports with few flight routes. This clearly raises questions about how to maximize the infrastructure of the airport in each area, avoiding cases where it is overloaded, where only moderately active. Therefore, by 2020, Vietnam needs to come up with solutions to reduce overcrowding at major airports as well as enhance the operation of new airports, which is entirely possible to meet and solve. This is despite the need for time and involvement from agencies outside of aviation. Another reason is that the infrastructure connection between the airport and other constructions is not good, Vietnam has many civil airports, but focusing on efficient exploitation mainly at a few large airports in the while the rest is to compensate for losses, operating in moderation. One of the reasons is the weak connection between the airport's road

infrastructures. To solve the problem of airport inefficient operation, it is impossible to separate the problem of other means of transport, especially by road, in addition to strengthening other means of connectivity such as the Skytrain atypical that many countries in Asia and around the world have used. It is connecting high-speed trains to the center of the airport terminal, thereby reducing road traffic congestion, increasing connectivity between the airport and other ancillary facilities [6]. The management must force that restriction while air transport is entering a thriving opportunity that may stem from the delay in expanding Tan Son Nhat Airport - an important gateway to the sky especially in the South, the sluggishness in the construction process of Long Thanh International Airport and the irrationality in investment and exploitation at local airports. If the challenges related to infrastructure development cannot be solved early, Vietnam's air transport industry will be able to tread the "crash" of Indonesia's aviation industry, when it has Many airlines operate but the airports are still old, putting too much pressure on the management, leading to the risk of unsafe as well as the delay and cancellation of rampant flights.

According to data from the Vietnam Aviation Administration, in 2018, the volume of goods transported by air reached nearly 1.5 million tons (up nearly 13%) compared to 2017. Of which, nearly 400 thousand tons of goods were transported. Transfer of Vietnamese airlines. In addition to 4 Vietnamese airlines, namely Vietnam Airlines, VietJet Air, Jetstar Pacific Airlines and VASCO, the market also has the participation of 68 foreign airlines from 25 countries/territories. The market share of international freight of 3 domestic airlines accounts for only 12% and the rest belongs to foreign airlines. Among 5 types of transport (road, rail, sea, inland, air) goods transported by road account for the highest proportion, about 93%. Meanwhile, only 0.23% of goods are transported via air [7]. Although cargo not only accounts for a small part of Vietnam's total cargo volume, it accounts for 25% of the country's total export value. In fact, in Vietnam, no airline has freighters (Freighters) and most, goods are placed under the belly of passenger planes, resulting in limited cargo volume.

#### *B. Opportunities*

According to forecasts of the International Air Transport Association (IATA), Vietnam will become the fifth fastest-growing aviation market in the world, reaching 150 million passengers by 2035. In the country, the percentage of people traveling by plane in Vietnam is increasing rapidly. With a population of nearly 100 million people, Vietnam domestic aviation is forecasted by IATA to increase an average of 15% per year in the future. Economic experts said that Vietnam will need about 10 new airlines to meet the needs and create strong competition in the market, instead of only 4 carriers as currently [8].

Vietnam has studied and given for logistics costs accounting for about 20.9% of GDP. In Vietnam, there are many types of transportation, however, air transport accounts for the lowest market share, accounting for only 0.023% of the market of goods and passenger transportation accounting for 0.06%. However, due to the characteristics of valuable goods and high growth rates, Vietnam ranks seventh in the aviation market. With this development momentum, it is forecasted that by 2035 the Vietnam aviation market will be in the TOP 5 aviation

markets with the fastest growth in the world. Vietnam has studied and given for logistics costs accounting for about 20.9% of GDP. In Vietnam, there are many types of transportation, however, air transport accounts for the lowest market share, accounting for only 0.023% of the market of goods and passenger transportation accounting for 0.06%. However, due to the characteristics of valuable goods and high growth rates, Vietnam ranks seventh in the aviation market. With this development momentum, it is forecasted that by 2035 the Vietnam aviation market will be in the TOP 5 aviation markets with the fastest growth in the world technical facilities, cooperating with reputable foreign technical centers. In comparison, a less populous country like Thailand has more than 10 airlines, including 5 low-cost carriers. According to data from the Vietnam Aviation Administration: Vietnam currently attracts 50 international airlines from 25 countries and territories. The total transport volume of airlines achieved a growth of 12% between 2010 and 2014 in passengers and 12.6% in cargo. According to the evaluation of the International Air Transport Association (IATA), Vietnam's aviation market is ranked 3rd in the world in terms of air transport growth. Vietnam's aviation market aims to be among the top 4 countries in ASEAN in terms of transport volume. Vietnam's aviation market has a lot of potential for investors. The success of Vietjet Air is a specific example of the attractiveness of this 90 million market. Many powerful airlines behind are big investors ready to participate in this race such as Bamboo Airlines or a joint venture with AirAsia is creating an extremely exciting prospect for the market. However, Vietnamese investors and consumers may still have to wait, because the sky is wide but the apron is still too narrow. The agreement to open the skies between Southeast Asian countries also creates opportunities for Vietnamese airlines to try to consolidate their capacity and increase market share to be able to compete with more than 52 domestic airlines. Outside is exploiting more than 78 routes to and from Vietnam today.

Aviation from a mode of transportation only for business people or high-income residents, nowadays, aviation has become popular, the opportunity to fly wide doors with all people thanks to the price. Tickets are cheap, sometimes even lower than cars, trains. When there are many airlines participating in a market, passengers have the opportunity to use air transport with reasonable prices, in accordance with the needs and solvency of each segment, increasing supply and meet air travel demand. The Aviation Administration of Vietnam said that Vietnam's aviation market continued to have a steady growth. Domestic airlines including Vietnam Airlines, Vietjet, Jetstar, Vasco, Hai Au, and rookie Bamboo Airways currently operate 48 domestic routes connecting Hanoi, Da Nang, and Ho Chi Minh City. Ho Chi Minh City with 18 local airports under the network of axis-nan, inter-regional and intra-regional routes throughout the country. The success of low-cost airlines is a prerequisite for the growth of the aviation industry. Now flying is no longer a luxury, but it has become a popular vehicle with the advantage of time. Frequently launching promotions with attractive prices, low-cost airlines have created fierce competition with other traditional airlines. For low-cost airlines, promoting the maximum flight capacity is vital for the airline because the more punctual it flies, the more profit it will earn. The

aircraft will be delayed if it is damaged. Passengers traveling on cheap flights will accept the maximum reduction on the plane and only pay for the services that passengers use. In the past, budget airlines often flew to small airports to reduce ground costs. However, recently, many countries such as Singapore, Malaysia, Vietnam ... have opened the terminal for low-cost airlines and provide basic facilities, which makes customers feel still attentive service. Currently, countries in the region have many domestic firms participating in the market, for example, Indonesia has 15 firms, Thailand has 13 firms, Malaysia has 6 firms ... Meanwhile, Vietnam with a large population is currently new. There are 5 airlines that exploit this is small compared to demand. This figure does not guarantee the best benefits for people and tourists in choosing routes and flights and has not created the necessary competition on fares and air service quality.

With the increasing competitiveness of the market, the service quality will be better as the carrier is gradually eliminated. Recently, many airlines have increased utilities for guests with many services such as airport shuttle, online payment, luggage in the city, air tickets with hotels ... However, due to the rapid growth of the market, recently, the service quality of some companies has declined. Some airlines have been complained about by passengers about the conduct of their employees. In particular, many passengers are frustrated by the regulations imposed by airlines such as requiring absolute compliance with the hours and regulations, while the airline repeatedly violates, only serves perfunctory, does not apologize, no compensation, do not provide flight information as prescribed whenever the delay, cancellation. According to statistics from the Vietnam Aviation Administration, in the first six months of 2019, Vietnamese airlines made 153,559 flights, up 2.4% over the same period last year, of which Vietjet Air led with 68,821. Vietnam Airlines reached 53,242 flights, Jetstar Pacific Airlines operated 18,146 flights, Vasco made 6,650 flights while rookie Bamboo Airways flew 6,700 flights. Accordingly, the number of passengers of domestic airlines in the first six months reached more than 18.3 million passengers, up 6.2% over the same period in 2018, of which Vietjet Air holds the highest market share. at 44%. Along with this growth, the number of aircraft operated by domestic airlines also increased with 197 aircraft with an average age of 5.2 years and an ownership ratio of 27.4%. In addition to the five domestic airlines operating domestic and international routes, Vietnam's aviation market also has the presence of 72 foreign airlines operating flights to, from or transiting at Viet Nam airport. The boom in the international flight segment brought the market in the first six months of 2019 the number of 20.2 million passengers, up 12.5% over the same period in 2018 bringing the total number of passengers of the entire aviation market. In this period 38.5 million visitors increased by 9.4%. LCC's low-cost carrier is getting many advantages in regional markets but also faces fierce competition from the expansion of the flight network and the increase in the number of new airlines. In Southeast Asia, LCC airlines currently hold more than 50% market share and are likely to reach higher rates in the near future when many markets still have not fully exploited their growth potential. AirAsia is currently considered the largest low-cost airline in the region with the presence of eight subsidiaries including Indonesia AirAsia, Thai

AirAsia, Philippines AirAsia, AirAsia X, Indonesia AirAsia X, Thai AirAsia X, AirAsia Japan, and AirAsia India. As of July 2019. According to the airline, Southeast Asia is a potential market for commercial air transport. The number of seats provided from regional airlines has more than doubled from more than 200 million seats to nearly 530 million seats in just a decade from 2008 to 2018, which is largely contributed by the acceleration. the impression of LCC low-cost airlines. The market share of low-cost airlines in Vietnam is largely in the hands of Vietjet Air and the domestic airline is also a star that has created a lot of attention in the world aviation market for impressive growth. The joining of AirAsia, if successful with the upcoming but not inferior names, will create positive competition to help the Vietnam aviation market gain a new position not only limited in the area. Southeast Asia. Air transport is an important economic and technical industry with an increasing role in the national economy. Not only serving passenger and cargo traffic as a means of public transport between local and international registering, but Vietnam Airlines also serves national defense, security, and political duties. Other. In the context of international economic integration, the business environment has changed radically, requiring effective business solutions to improve organizational and production and business efficiency. In the logistics industry, there must be a vision to have an improved solution. Globalization, international economic integration, and trade liberalization are emerging trends of the contemporary economy. 2018 witnessed the transformation and outstanding development of the Logistics industry when it rose to the 39th position of 160 countries in LPI. With the rapid development of air transport demand in the Asia Pacific region, the growth rate reached 35.4% compared to the world air transport market share.

### **III. Solution on policies, technology and aviation industry**

The aviation science, technology, and industry policies are directed towards advanced technology, approaching the aviation science and technology level of countries in the region; be capable of acquiring and mastering modern knowledge and advanced technologies of the world; technological innovation is based on the acquisition of foreign advanced technology transfer, and at the same time actively building endogenous capacity to gradually build an advanced aviation industry capable of effectively solving scientific and technological issues raised by practical production and business practices.

Developing research and deployment in a low to high direction, in particular, encouraging individual teams to explore problems arising in production and business to practice research from which to solve problems. Proactively and effectively. To accelerate the development of information technology, including informatics and telecommunications, to absorb new technological advances in accordance with modern international standards for hardware, environment, applications and advanced models. Advance application in airlines. Strategic priority directions for information technology development include: operating and operating systems, e-commerce systems integrating many traditional component systems in operation such as reservations, ticket sales., regular customers; financial-accounting management system; technical management

system and spare parts supplies. To build and develop a contingent of scientific and technological personnel with the following contents: To consolidate the aviation science institute to function as a research and development agency of the civil aviation industry as well as a place for fostering, developing civil aviation scientific staff. Participate in building and developing the aviation industry: As an aircraft operator and maintenance, actively participate in building the aviation industry on the basis of division of labor with technical facilities. the technology of the civil aviation industry, with the Air Force's

#### **IV. Conclusion**

The history of Vietnam's civil aviation industry dates back to January 1956. However, civil aviation has only really become an economic and market-oriented industry after the Government decided to establish Vietnam Airlines Corporation on the basis of reorganizing enterprises. And civil aviation business units. According to statistics of the Vietnam Aviation Administration, in the period of 2010 - 2016, Vietnam's air transport market had a high and continuous growth with an average growth rate of 14.9% in the period of 2010-2015. Passengers and 10.7% for cargo. Only in the first 9 months of 2017, passenger volume through Vietnam's airports reached 71.75 million passengers, maintaining a high growth momentum (17.9%); cargo reached 833,000 tons, an increase of 34.6% over the same period in 2016. Priority for the development of the fleet of owned aircraft has created a basic premise for the growth and enhancement of Vietnam's aviation position. The aircraft fleet was developed in the right direction, going straight to technology, modern and synchronized techniques. By the end of September 2017, there were 157 aircraft registered for Vietnamese nationality, an increase of 17 aircraft over the same period of 2016. With the exploitation of 52 foreign airlines and 4 Vietnamese airlines, basically, air services have linked capitals, major aviation centers, tourist destinations, major cities in the region and the world to Vietnam and concurrently covered all regions of the country.

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