Developing an Online Platform for Air Charter Services in Indonesia: A Feasibility Study

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This study assessed the feasibility of developing an online platform for connecting air charter providers operating in Indonesia with their potential customers. The size of air charter market size in Indonesia and its growth were investigated through literature studies. Subsequently, a series of interviews were carried out to collect specific information and insights from potential users. The interviewees from air charter provider side were full service, low cost carrier, and medium service airlines while the interviewees from customer side were travel agents, independent travellers, and corporations. Website developers were also interviewed to investigate technical and financial challenges of developing the online platform. The literature studies found that the market size of air charter in Indonesia is promising and expected to grow rapidly. The interview results indicated that the needs are high and the potential users are interested in using the online platform once it is available. This paper also suggested some important requirements to be accommodated in the online platform.

Keywords: air charter; feasibility; market; online platform; requirement.

1   Introduction

The airline industry model could be formed into different shapes, from low-cost to full service airlines business model, cargo airlines that focused on goods shipping, up until chartered fleet airlines to fill in the payload and direct chartered demand. There are promising portion of chartered industry in the total of market size of airline industry. According to Wells and Chadbourne [4], the primary advantage of charter operations is flexibility, the use of charter service is attractive to firms that do not have consistently high levels of demand for point-to-point services. Charter services are also cost-effective solutions when supplemental lift is required to support existing flight operations [2]. This opportunity can be profitable not only for the airlines perspective but also for the customers, and intermediaries sector. The vast options to fulfil the demands for particular destination will be very possible.

Digitalization represents an exciting opportunity for the aviation, travel and tourism ecosystem, with the potential to unlock approximately $1 trillion of value for the industry and wider society over the next decade. Digital transformation is impacting every element of the aviation, travel and tourism value chain. Platforms such as Airbnb and Uber have radically altered demand-side dynamics, enabling small entrepreneurs to compete with bigger players. At the same time, online travel agencies (OTAs) are using up-to-date information to change the way travellers explore travel offerings. The travel ecosystem is evolving, with blurring boundaries and changing roles across the industry landscape. According to world economic forum report, digital transformation over the next decade will transform on: Living travel experience, Enabling the travel ecosystem, Digital enterprise, Safety and security [6].

This study is intended to investigate how vast the charter business sector specifically in the airlines business and the opportunity to accommodate all the needs using a single platform. It

is very rare to have a platform to access directly the chartered airlines. The consumers or intermediaries usually have to go directly to a particular chartered company. By the advance of the digital technology, online platform is always bringing ease to both consumer and industry. This fact encourages the idea of having online platform that can provide the full access to the chartered industry in Indonesia. The feature of booking, choosing the airlines until specific aircraft, and online transaction can be provided by this platform. With the complete overview of airlines charter business and digital transformation, this study will provide the digital business enterprise idea to accommodate charter business importance. To fill in the void of chartered-airlines platform start-up in Indonesia is the main idea. This study is limited in scope of Indonesian air charter and airliners, from low cost carrier up until full service. Finally, the goal of this study is determining the feasibility of an online business platform for chartered airlines as well as proposing the platform idea overview by reviewing requirements that need to be accommodated by the platform.

2 About the Research
2.1 Methodology

This report is the results of a six-month research effort. Our work described on several sources of information such as:

- Literature review of airlines' business model, air-chartered business model and forecast, market size of airline industry in Indonesia, digital business and transformation, and how digital business transformation affects airline and tourism businesses.
- Expert interviews and survey from private and public sector figures. The interviewees are including infamous scheduled and unscheduled airlines in Indonesia as the provider, travel agents as intermediary sector, prospective customers as the user, and web developers.

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The main questions covered in the interview can be seen in the
table:

Table 1. Interviewee List and Main Questions

Category		Questions
Provider	Full Service airline	**1.** What is your opinion about the prospect of charter industry?
	Medium Service airline	**2.** What are the problems faced by the company in the charter industry?
	Low Cost Carrier airline	**3.** What is your expectation about the charter industry in the future?
Intermediary Sector	Travel Agent	**4.** What is your opinion about the online platform concept?
Customer	Travel Vlogger	**5.** What is your expectation about the concept?
	Travel Blogger	
Web Developer	Individual	**1.** What is the technical challenge to develop a platform for online ticketing and booking, such as traveloka?
	Corporation	**2.** What is the cost of develop such kind of platform and how long does it take to develop?
		3. Given the requirements, do you able to develop the platform as requested?

We analysed the data from literature review to estimate the market
of the charter flight in Indonesia as well as its trend in the future,
later on it will be explained in the market share analysis section.

The interview results are discussed using qualitative method, where the information gathered from the stakeholders are processed in form of problem analysis. The platform overview contains what the stakeholders are expecting from the platform itself, as well as the technical and financial challenges described by respective web developer.

Finally, we also collected about how the stakeholders' consent with the idea of the platform in the approval by stakeholder section as the validation of the platform existence interest in the future. All the data gathered will complete the missing puzzle of the platform itself.

3 Results and Discussion
3.1 Market Share Analysis

After reviewing many sources in regard with the market share of the airline in Indonesia, we can conclude a figure below that shows the market share of airlines in Indonesia in term of domestic passenger and its percentage.
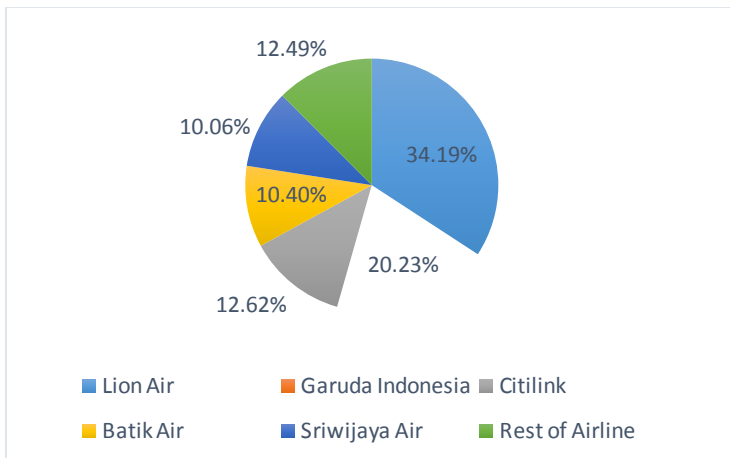

Fig 1. Airline domestic market share in Indonesia 2017 (source: DGCA)

This graph is showing the total passenger in a mixture between both scheduled and unscheduled airline. The total amount of passenger in year 2017 was 96,890,664 passengers it is increasing with the percentage of 8.4% from 2016 with the number of 89,385,365 passengers in total. What makes this market share graph interesting is because of the total passenger of each scheduled airline is also a combination between scheduled and unscheduled flight. In other word the big portion of each big airline in the graph contains a promising number of charter/unscheduled flight from the scheduled airline sector.

The unscheduled airlines themselves are ranked inside the percentage of the rest of airline portion in the graph. If all the number of passengers for unscheduled airline are combined together, the percentage in total is around 1.2% or 1,161,641 passengers in 2017. Although it looks small compared to the scheduled flight, but the number is expected to always growing and it is not yet combined with the number of unscheduled flight of the scheduled airline percentage.
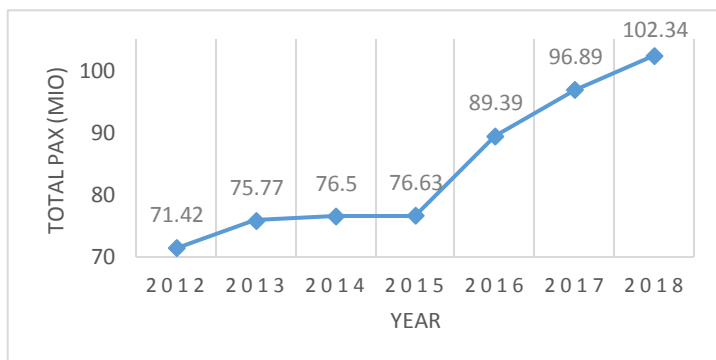

Fig 2. Domestic passenger traffic growth (source: DGCA)

The year 2018 is an estimation obtained from Directorate General of Civil Aviation (DGCA), up until the first quarter of the 2018, the growth of domestic passenger already in the level of around 3% as reported from the busiest airport in Indonesia, Soekarno-Hatta International airport. The number of Compound Annual Growth Rate (CAGR) from 2016 to expected 2018 is 14.5% and CAGR of 2012 to the last quarter of 2017 is 7.6%. This positive growth of domestic passenger is expected to continuously growing in the future, following the positive trend since 2012 and the development of the infrastructure of the aviation industry in Indonesia.

Table 2. Garuda Indonesia operating revenue in Q1/2018 (source: company presentation)

Category	Total Revenue (mio)	Percentage
Scheduled	$ 828.5	84.28 %
Unscheduled	$ 19.8	2.01 %
Others	$ 134.7	13.71 %
Total	$ 983	100 %

From this table, what we can conclude is the proportion of the unscheduled/charter flight of scheduled airline specifically from Garuda Indonesia in term of revenue. Overall for the first quarter of 2018, the revenue from unscheduled flight take 2.01% of the total company revenue or about $ 19.8 million in just the first quarter a year.

From the interview of another scheduled airline as well, there is also unscheduled revenue from another scheduled airline who touch the percentage of 10% from its total revenue in a year. This revenue

is coming from ad-hoc charter as well as seasonal tourism charter from international charter flight.

Combined the revenue from the scheduled airline in general as well as the unscheduled airline leads to a promising opportunity from the unscheduled flight market itself. Although that maybe the percentage is quite small compared with the regular or scheduled flight, but still the number is pretty consistent and expected to grow further. Another consideration is because this whole number is not yet utilized by any online charter platform in Indonesia, a bright prospect for the start-up platform who can accommodate the portion of the charter itself.

3.2 Problem Analysis

We have conducted interviews directly to the stakeholders in order to know what are their difficulties in term of charter flight, there exist several problems in practice.

First, the airline's aircraft availability is so limited. Although chartered flight brings fix and forecast-able income for airline, for the regular airline perspective, they can only spend a few of aircraft flight hour for charter flight since it is not their main focus and the regular flight schedule is already tight.

Domestic demand of charter flight is difficult to be forecasted. The demand of the charter mostly come from occasional importance, and also seasonal. Because of this fact, the airline is quite difficult to forecast the demand for the charter, so then allocating the aircraft flight hour to compensate the aircraft availability specifically for charter becomes too risky.

Second is about the negotiation and permission of the charter flight itself. Negotiation including the agreement about the cost, contract of the chartered aircraft, etc. While permission including the slot of the destination airport, flight permission, etc. A lot of permission is too complicated and sometimes prevent the airline to make a charter flight (the route already flown by regular airline for

example) and the process of the negotiation as well as permission mostly takes a lot of time to be accomplished.

In term of travel agent, their concern is mostly about, again, availability of the aircraft. Also the type of the aircraft takes a big role of the process of the dealing. Sometimes the number of prospective customers is not as many as the number of seats available in one aircraft or the occupancy issue. This fact brings into another concerning problem, which is the cost. The customer and the travel agent will try to have the optimum configuration between the number of prospective passenger, cost, and aircraft availability.

For the prospective customer point of view, the cost of the flight still become the major concern. Another consideration is about the flight time. It is not too flexible if just following the regular flight time, since the cost and the time already has been determined by the airline. Last but not least is mostly the unique destinations make the passenger have to go for a transit flight, it takes a lot of time not as efficient as direct/chartered flight.

These problems later on will determine how the online platform will be, and ease the problems of the stakeholders in the future.

3.3 Platform Overview

By reviewing the problems that the stakeholders have been faced from the charter industry and the stakeholder's expectation from the interview, we can sort some of the requirements to be accommodated by the platform itself. Those requirements are from the combination of the provider, intermediary party, as well as the user as shown:

- Negotiation feature. This feature is required in the platform to ease the complex process to make a deal between the provider and the user and/or from the intermediary sector. The ability to make a deal for a charter contract and customization directly in the platform will cut the long duration and bureaucracy process that is done manually before.

- Demand interest forecast information. It can be done by enabling the booking feature or any other approach where the prospective user can show their interest inside the platform. This data is essential since the provider can forecast the demand of the charter and allocating their fleet for the charter assuredly.
- Integration of airline needs into the platform. A recommendation from the airline where they can also integrate charter flight with: for example, marketing, cargo booking, parcel, and so on. So the focus of the charter itself is not always about human passenger but over and above cargo delivery.
- Basic online ticketing and booking platform. Using the existed online ticketing platform as the benchmark for the user interface and user experience for all the stakeholders will bring easiness to assess the feature and options accommodated by the platform itself.
- Permission arrangement. Although that we do not have complete data and information about charter permission mechanism between provider and government, but the online solution for the permission agreement is quite expected by the provider and intermediary sector for the effectiveness of negotiation process period.

3.4 Technical and Financial Challenge of the Platform

All the basic requirements are already acknowledged for the platform to be accommodated. These basic requirements then must be examined more further about the challenges in term of the technical and financial area by the web developer. We have concluded some survey with respective web developers to see the responds and capability of Indonesian's developer to undertake the platform project.

From the technical point of view, the platform architecture itself is not too complicated to be done by the web developer. The difficulty level is not too high and the challenge is mostly about the number of the web developers needed to develop the platform from

the beginning until the kick-off launch. Quoted from the interview results, at least a group consist of 20 developers is needed to develop the platform with the requirements stated in the project overview. The technical problem itself however, more likely to be the business requirements form the client or the stakeholders of the platform itself. "We have to make it clear all the needs of the stakeholders, because it is directly affect the platform architecture in the future" said one of the respective web developer. The recommendation is to declare clearly about the business requirements in details and communicate all the requirements with both the stakeholders and developer. Nevertheless, all the web developer interviewees were declaring their capability to develop the platform.

On the other hand, financial challenge probably becomes another major concern. Taking one of the most popular online ticketing platform such as traveloka as the benchmark, will cost the development of the platform become quite high. Referred to the web developer information, the cost needed is at least hundred million rupiahs, and that is just from the scratch until the launch of the platform. It is excluded the cost of maintenance and operational of the platform after the launch. This challenge can be overcome with prioritizing the features to reduce the cost, as well as looking for support from funding and collaboration.

According to the web developer, the time needed to develop the platform can go from three to six months and even more, depending on the complexity of the platform itself. The development period however, can be accelerated by increasing the number of the developers, but obviously increasing the cost of the project.

3.5 Approval by Stakeholder

The response of the stakeholders in term of the online platform project approval quite vary each another. But all the stakeholders agree that the platform is certainly needed. The highlighted comment from the airline sector is: "If the platform's benefit to the

company is crystal clear, absolutely interested. But first thing first, we need the detail explanation about the benefit for our company, such as more revenue opportunity, etc." and one of the airline director showed his great interest in the project by saying that the platform and charter flight is very prospective and a good opportunity to fill in, especially for Indonesia's market.

Coming to the travel agent and prospective customer, all of them showing their interest to the platform itself. The highlighted comment is: "Absolutely interested, the prospect is very promising, especially for travel agent" by one of the travel agent owner, and "I do agree with the idea. It opens the opportunity for us to get competitive price and freedom to choose destination and flight time based on our needs" by a respective travel vlogger and blogger.

4. Conclusions

This paper has documented the market share of the airline industry in Indonesia, showing the opportunity of the industry to grow year by year. This is also valid for the charter industry, the growth is certain and shows positive trend following the growth of the industry in general. Although that the percentage looks quite small but the portion itself shows its promising prospect. On the other hand, currently this portion is not yet being utilized by any online platform who can accommodate the needs of the charter industry. The opportunity is vast and waiting to be utilized even more.

This paper also has highlighted the problem occurs in the charter industry from many stakeholders' point of view. The availability of the aircrafts which is limited directly connected with the demand of the passenger that is difficult to forecast, negotiation and permission process is complicated, up until the high cost of the flight itself become the major concerning problem found on the field. This fact leads to the basic requirements that need to be accommodated by the platform later on.

The basic requirement is the basic feature for the platform so that the platform can be said as the solution of the problems faced by the stakeholders. These basic requirements are: Negotiation feature, demand interest forecast information, integration of airline needs in the platform, basic online ticketing and booking platform, permission arrangement. All these basic requirements however, need to be developed even more with the platform architecture and development in the future.

In term of the technical challenge there is no significant obstacles since most of the respective web developers in Indonesia have declared their capability to develop the platform. Nonetheless, the challenge found in the financial factor. The cost needed to develop the platform that include all the basic requirements and the need of the stakeholder cost quite high, can go up to hundred million rupiahs. The recommendation to overcome the challenges however can be in term of prioritizing the features of the platform to reduce the cost, as well as seeking for the support from sponsorship in form of funding and collaborations.

Despite all the challenge and difficulties to develop the platform, all the stakeholders agree that the platform is undoubtedly needed. This paper also shows the approval by the stakeholder for the platform by highlighting the response of the stakeholders about the platform. All responses are positive, and it is concluded that this platform is promising to be developed even further. The future study may include the development of a prototype, to conduct testing and analyze the feedback from potentials users.

Acknowledgements

Conflicts of Interest

The authors declare that there is no conflict of interest

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