



**New Business Models in Aviation  
Subscription-Based Aviation applied to the 2030  
World Cup**  
(Versão final após defesa)

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Dissertação para obtenção do Grau de Mestre em  
**Engenharia Aeronáutica**  
(mestrado integrado)

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**agosto de 2024**



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Universidade da Beira Interior, Covilhã 7 de agosto de 2024



# Dedicatória

Aos meus pais.

“À dolorosa luz das grandes lâmpadas eléctricas da fábrica  
Tenho febre e escrevo.  
Escrevo rangendo os dentes, fera para a beleza disto,  
Para a beleza disto totalmente desconhecida dos antigos.”

ÁLVARO DE CAMPOS



# Agradecimentos

Findo o tempo para pensar, percebo que em poucas palavras posso tratar deste separador. Apesar de curto, as palavras têm todo o sentido que imaginei, a quem agradeço espero que entenda todos os sentimentos por trás delas.

Agradeço ao Professor Jorge Silva pela oportunidade de explorar este tema e pela orientação que me proporcionou ao longo deste ano. Não esqueço todo o período que precedeu este ano e a entrada no NIT, muito antes.

Agradeço aos meus amigos. Foram, ao longo deste tempo, a face dos bons momentos e de alguns maus. Como tal partilho com eles a alegria de entregar este trabalho, que também foi espelho dessas vivências.

Aos meus pais, por tudo o que fizeram por mim.



# Resumo

A emergência dos serviços de subscrição em todas as áreas da economia, seja no contacto entre consumidor final e empresa ou entre empresas, alargou-se, nos últimos anos, ao negócio do transporte aéreo. Por conseguinte, é importante estudar a sua expansão aos sistemas de gestão de receitas e inventário das companhias aéreas. A terminologia do Passe Aéreo (*Flight Pass*) surge recorrentemente nos termos de *marketing* das companhias aéreas, apesar das poucas referências presentes na produção académica.

Por isso, o presente estudo pretende enquadrar os modelos de negócio na aviação. Descrevem-se, assim, os conceitos de Modelo de Negócio; a ferramenta de análise: o *Business Model Canvas*; o estado atual dos modelos de negócio do transporte aéreo comercial, de subscrição e os sistemas de gestão de receitas e inventário (com enfoque, também, nos programas de fidelização e de mobilidade como um serviço).

Através da ferramenta do *Business Model Canvas* desenvolve-se a ferramenta do *Flight Pass Canvas*; tal serve para analisar os negócios e os Passes Aéreos das seguintes companhias: *Alaska Airlines*, *Frontier Airlines*, *Air Canada*, *TAP Air Portugal* e *Ryanair*. Os resultados são mostrados no quadro do *Canvas*, conseguindo distinguir os modelos de baixo custo e tradicionais; como estes influenciam a vertente do Passe Aéreo, apontando para as companhias de baixo custo o utilizarem como ferramenta para aumentar a ocupação, ao invés das companhias tradicionais que o usam numa forma de segmentação dos clientes.

Por último, o conhecimento obtido no estudo empírico, é usado para desenhar um Passe Aéreo para o evento desportivo do Mundial de Futebol de 2030. As conclusões do Passe Aéreo são, depois, discutidas através de um inquérito realizado a especialistas. As evidências apontam para a necessidade de desagregação do negócio de forma torná-lo economicamente viável.

# Palavras-chave

Modelos de Negócio na Aviação; Mundial Futebol 2030; Passe Aéreo; Sistemas de Gestão de Receitas e Inventário

# Resumo Alargado

## Capítulo 1 - Introdução

Os serviços de subscrição tomaram-se omnipresentes na vida de milhões de consumidores. Atualmente, nomeiam-se serviços como *Netflix*, *Spotify*, *Microsoft*, *Amazon*, com os quais os clientes têm contacto diário. Tal proporciona-lhes vantagens como: uma relação contínua com a empresa e acesso a um catálogo ou serviço numa forma mais conveniente; por sua vez as empresas conseguem uma fonte de receitas estável e previsível.

Como exemplo da dimensão e crescimento deste mercado menciona-se o índice da economia de subscrição da *Zuora*. Este indica que o mercado de subscrição cresce (em vendas) 3,7 vezes mais do que as empresas do índice S&P500 (Zuora, 2023).

Atualmente o mercado da aviação adota soluções que integram os modelos de negócio com base na subscrição. Atente-se ao caso notável da *Alaska Airlines* que implementou este modelo para a compra de viagens (Baldanza, 2022), com grande relevo na imprensa. Por conseguinte, no presente trabalho, pretende-se estudar os modelos de subscrição no mercado da aviação, visto que são ubíquos em múltiplos setores, tendo-se alargado, também, à aviação comercial.

Os *Private Jet Cards* (Programas de subscrição de voos privados) formam uma primeira forma de subscrição de horas de voo no mercado da aviação executiva. Estes modelos estão em franca expansão, relevando-se os casos das companhias: *Wizz Air*, *Frontier Airlines*, *TAP Air Portugal* e *Air Canada*.

Os modelos de subscrição são uma forma cómoda de interação com o cliente e possibilitam a inovação de produto, pretende-se explorar este conceito no contexto do evento desportivo do Mundial de Futebol de 2030, sendo este o caso de estudo. Para tal, pretende-se introduzir o conceito de Modelo de Negócio, aprofundar os conhecimentos dos modelos de negócio vigentes na aviação e na área da subscrição, além de introduzir a ferramenta de trabalho e análise, o *Business Model Canvas*.

Em consequência, o objeto do presente trabalho é o estudo dos Modelos de Negócio na Aviação, na perspetiva da inovação e tendências dos novos modelos no sector. Sendo o Passe Aéreo um produto que deve ser enquadrado nesta área.

Em resumo, declaram-se os seguintes objetivos a cumprir para o trabalho:

- Descrever os atuais Modelos de Negócio na Aviação;
- Estudar a atual oferta de Passes Aéreos enquadrando-os no *Business Model Canvas*;
- Criar um Modelo de Negócio, através do *Business Model Canvas*, que inclua o Passe Aéreo do Mundial de 2030.

## **Capítulo 2 – Estado da Arte**

Neste capítulo procede-se à definição dos termos e conceitos relevantes para alcançar os objetivos.

É impossível definir com clareza o termo de Modelo de Negócio. Sendo usado numa forma holística, na maior parte da literatura, encontra-se maioritariamente associado à estratégia de uma determinada organização. Assim, no contexto deste trabalho, e visto que se usa o seu quadro de análise, adotou-se a definição de Modelo de Negócio por Osterwalder (2004). Os blocos construtores do *Business Model Canvas* que permitem o estudo detalhado dos modelos de negócio vigentes são: a Proposta de Valor; as Atividades principais; os Recursos principais; os Parceiros principais; a Relação com o Cliente; os Canais de Comunicação e Distribuição; os Segmentos de Clientes; a Estrutura de Custos; e a Estrutura de Receitas. O enfoque na criação de receita é essencial para a compreensão das relações entre os vários blocos construtores.

Apesar de não existir concordância entre autores na classificação dos Modelos de Negócio na Aviação, assomam, principalmente, os conceitos de companhias tradicionais e companhias aéreas de baixo custo. Estes podem ser contidos num espetro em que determinadas características os aproximam mais de um lado ou de outro. Referem-se, ainda, os modelos híbridos, aí contidos, e os modelos de companhias regionais e de charter. Estas últimas podem incluir as companhias aéreas privadas executivas.

Os modelos de negócio de subscrição refletem as novas perspetivas para o setor da aviação, permitem estabelecer uma relação de longevidade com o cliente, suavizar a procura e conseguir uma relação estável e regular. Destacam-se, no âmbito deste trabalho, os modelos de subscrição *consumables*, *simplifier*, *all-you-can-eat-library* e *front-of-the-line*.

Por fim, apresentam-se os conceitos dos sistemas de gestão de receita e inventário como a forma de entender a lógica de maximizar a receita na venda de lugares numa viagem.

Dentro destes conceitos incluem-se as formas dos programas de lealdade e fidelização das companhias, além do Passe Aéreo.

Em suma, com os conhecimentos acerca dos modelos de subscrição é possível conduzir o estudo empírico, que será aplicado ao Mundial de Futebol de 2030.

### **Capítulo 3 – Aplicação do Business Model Canvas a companhias existentes**

Expõem-se os *Business Model Canvas* das companhias analisadas, além da análise do Passe Aéreo correspondente. Utiliza-se o método indutivo para completar os quadros de análise.

Em todos os casos estudados, as empresas apresentam uma estrutura orientada para cumprir com a sua proposta de valor. Seja a atuar globalmente, regionalmente, ou para um nicho de mercado. Quanto mais abrangente for a proposta de valor, maior será o número de segmentos de clientes abrangidos, levando a uma maior estrutura de custos, sendo necessários mais recursos e uma rede de atividades mais ampla e dispersa. Tal ainda, pode obrigar a internalizar todas as atividades podendo, no entanto, recorrer-se à contratação externa dos mesmos.

O Passe Aéreo surge como uma ferramenta orientada para a inovação de negócio. Consoante o modelo de negócio de partida e a estratégia da companhia pode tomar características diferentes. Na companhia de baixo custo estudada o propósito é o de ampliar a ocupação dos voos, diminuindo os custos por passageiro e aumentando a receita fixa através do valor da subscrição. As companhias tradicionais adotam modelos de Passe Aéreo que permitem aos seus clientes habituais viajar mais comodamente, seja em troca de uma mensalidade ou pagamento único, usufruindo de um conjunto de viagens pré-compradas para uma rede pré-definida ou para uma rede à escolha do cliente. Permitem introduzir previsibilidade tanto ao cliente como à companhia. Por parte da companhia obtêm-se ocupações mais previsíveis e antecipação de receitas, para o cliente conseguem-se preços competitivos e fixos.

### **Capítulo 4 – Passe Aéreo para o Mundial de Futebol de 2030**

Aqui mostra-se a viabilidade de um modelo de negócio desagregado, na perspetiva de Osterwalder & Pigneur (2010), com a inovação de produto do Passe Aéreo. O *Product Canvas* e *Business Model Canvas* permite cobrir todos os destinos possíveis do Mundial de 2030 num sistema de rede com múltiplos *hubs*. Sendo essencial estar ligado aos outros meios de transporte no âmbito da plataforma de MAAS. A proposta de valor,

como ponto de partida, determina que o modelo *consumables* serve melhor a proposta de valor e o segmento de clientes.

Como modelo de negócio independente, tendo de possuir todos os recursos, o Passe Aéreo é inviável. Por isso, deve estar associado a outro modelo de negócio que possua os recursos. Trata-se, apenas, de uma forma de aumentar a ocupação dos voos, atingir outros segmentos de clientes e aumentar a previsibilidade da receita, criando, ao mesmo tempo, um sistema de compradores fidelizados.

Neste capítulo discutem-se, finalmente, os resultados através de um inquérito realizado a especialistas em aviação, com vista à melhoria do Passe Aéreo.

## **Capítulo 5 - Conclusões**

Referem-se as principais conclusões do presente trabalho:

- As atuais tendências do mercado da aviação apontam para a preponderância dos sistemas de gestão de receitas e inventário, cada vez mais avançados, e com recursos computacionais maiores, de forma a aumentar a receita por cada lugar vendido;
- Modelos de subscrição estão incluídos na inovação de produto das companhias aéreas;
- O Passo Aéreo é uma forma de inovação das companhias, com perspectiva a captar mais segmentos de clientes e fidelizar clientes;
- O modelo de Passe Aéreo da Frontier Airlines é disruptivo pois consegue dar ao cliente a capacidade de viajar ilimitadamente a um preço competitivo, sem impactar na estrutura de custos;
- O Passe Aéreo a aplicar no Mundial de 2030 deve resultar de uma desagregação de parte do negócio de uma companhia aérea já existente, conseguindo, assim uma otimização dos recursos existentes. Como tal, encara-se o produto como uma forma de inovação que necessita de uma estrutura de negócio própria assente num negócio mais abrangente.

# **Abstract**

The emergence of subscription services in all sectors of the economy, whether between the end user and the company or between companies, has extended to the airline industry in recent years. It is therefore important to study their expansion into airline's yield and revenue management systems. The terminology of the Flight Pass recurs in airline marketing terms, although there are few references to it in academic production.

This study therefore aims to provide a framework for business models in aviation. It describes the business model concept and the analysis tool: the Business Model Canvas. It also describes the current state of commercial airline business models, subscription business models, and yield and revenue management systems (also focusing on loyalty and mobility-as-a-service programmes).

To examine the business and Flight Passes of Alaska Airlines, Frontier Airlines, Air Canada, TAP Air Portugal, and Ryanair, the Flight Pass Canvas tool was developed. The results are presented in the Canvas framework, distinguishing between low-cost and full-service models; and how these influence the Flight Pass aspect, suggesting that low-cost airlines use it as a tool to increase load factors, rather than legacy airlines using it to segment customers. The conclusions of Flight Pass are then subject of consultation with subject matter experts through a survey.

Finally, the findings of the empirical study are used to design a Flight Pass for the 2030 World Cup. The findings suggest that unbundling the business is necessary to ensure its economic viability.

## **Keywords**

2030 World Cup; Business Models in Aviation; Flight Pass; Revenue Management; Yield Management



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# List of Acronyms

ACSI	American Customer Satisfaction Index
AI	Artificial Intelligence
API	Application Programming Interface
ASK	Available Seat Kilometre
ASM	Available Seat Miles
CAMO	Continuing Airworthiness Management Organisation
CASK	Cost Available Seat Kilometre
CASM	Cost Available Seat Miles
CASMEX	Cost Available Seat Miles excluding fuel and special items
CEO	Current Engine Option
EASA	European Union Aviation Safety Agency
FAA	Federal Aviation Administration
FFP	Frequent Flyer Programme
FIFA	Fédération Internationale de Football Association
FSNC	Full-Service Network Airlines/Carriers
GDS	Global Distribution System
ICAO	International Civil Aviation Organisation
ICT	Information and Communication Technologies
IOSA	IATA Operational Safety Audit
IT	Information Technologies
LCC	Low-Cost Airlines/Carrier
MAAS	Mobility-as-a-Service
NGO	Non-Governmental Organisations
NEO	New Engine Option
POA	Product and Organisational Architecture
PRASK	Passenger Revenue Available Seat Kilometre
RASK	Revenue Available Seat Kilometre
RASM	Revenue Available Seat Miles
RNP	Requires Navigational Performance
RPK	Revenue Passenger Kilometres
RPM	Revenue Passenger Mile
SAAS	Software-as-a-Service
SAF	Sustainable Aviation Fuels

SMS	Safety Management System
US	United States
USA	United States of America

# Chapter 1

## Introduction

### 1.1 Background

Subscription services are ubiquitous in the lives of millions of people. The first form of subscriptions dates back to the 16th century with newspaper or book subscriptions (Clapp, 1931). More recently, in the 20th century, subscription business models expanded to "include mail-order book-sales clubs and music sales clubs, cable television, telephone companies, financial services, and health clubs" (Wikipedia contributors, 2023g). By the turn of the century, Costco revolutionised the way it approached its business-to-business model by allowing individual customers to access their discounted products for an annual fee, popularising this type of business model (Barseghian, 2019).

Technology allows to offer a product as a service and software as a service (SAAS) to a broader range of people. Netflix, Spotify, Microsoft, and Amazon are notable examples. Because of their nature, subscription business models have proven stable and recurring revenues, monetising the relationship between customers and business instead of one-time transactions, as these business models allow the acquisition of new customers, retaining existing ones, and expanding through upselling (Zuora, 2023). The Subscription Economy Index measures the growth of this business model. It compares the S&P 500 sales over time to the change in volume of business for subscription-based products. Over the past 11 years, subscriptions have grown 3,7 times faster than sales from the companies in the S&P 500 (Zuora, 2023).

Flight passes are a rapidly growing segment of the airline industry. For instance, in April 2023, the low-cost carrier Wizz Air launched a programme for flight subscriptions opting to use the same platform (Caravelo) that the aforementioned Alaska Airlines uses (Parsons, 2023). Recently, Frontier Airlines introduced the "GoWild! All-You-Can-Fly-Fly Pass" which allows users to book unlimited flights with only 24 hours advance notice for domestic flights or 10-day notice for international flights (Carmel, 2023). The Frontier pass allows the airline to increase the load factor with a constant stream of revenue. However, the Frontier allows the flying of any route, and the other implementations focus on regional flights. Past examples of similar passes include the AAirpasses from American Airlines, and the "All You Can Jet" from JetBlue.

Another way to explore subscription-based aviation is through private aviation products commonly known as Private Jet Cards. These cards are appealing to leisure and business travellers who are not interested in buying an aircraft or investing in fractional ownership (Guha, 2022). Typically, Private Jet Cards are good solutions for 50 hours of travelling per year (Guha, 2022).

## **1.2 Motivation**

With that in perspective, it is interesting to study subscription-based programmes within the aviation industry. The exploration of this concept begins with an examination of Alaska Airlines' subscription-based programme to fly, which has received extensive coverage in several news outlets. Flight Pass from Alaska Airlines enables customers to pay an annual fee to travel six round-trips within a predetermined area (Baldanza, 2022). The common designation for this programme in commercial airlines is Flight Pass, which can be implemented in different ways within a subscription-based model. Flight passes can be bundles of prepaid flights limited to specific areas or within time. Customers have the option of purchasing discounted bulk flights or unlimited flights for a short amount of time (Dunn, 2020). The scope of future work should aim to compile a list of all variants of flight passes available, given their diversity. And it should be possible to evaluate flight passes within the framework of Mobility as a Service (MAAS).

Therefore, considering the availability of flight passes in the market and the growing sales of subscription services, it is important to evaluate current and past offers. To facilitate such an evaluation, the Osterwalder Business Model Canvas proved to be an essential tool. It is a template with nine blocks used to develop a new business model or evaluate an existing one (Wikipedia contributors, 2023h). Given the lack of literature on subscription-based business models in aviation, it is crucial to conduct further studies. The aforementioned factors, including the growing availability of flight passes in the market and the increasing popularity of subscription services, underscore the importance of conducting future research.

The flight pass of Alaska Airlines restricts passengers to a predetermined number of routes and trips. As such, this business model can be implemented in small regions where air connectivity is high or otherwise low. Baldanza (2022) suggests that Alaska Airlines' flight pass is a means of competing in a consolidated market dominated by larger players. This pricing scheme allows lower fares for passengers and induces demand.

As mentioned previously, in regions with limited air connectivity, implementing flight passes benefits customers and territories by increasing the number of flights. Therefore, it is necessary to evaluate critical variables, such as variable costs, fleet size, and aircraft selection. Using a business model canvas to assess the feasibility of flight passes is essential, as it identifies crucial points, such as cost structure, customer segment, and revenue streams.

Large events in short timeframes are a market for flight passes, an example of which is the World Cup. By identifying the places where games are played, critical routes are identified and create a network of routes that meet tourists' needs. Therefore, Flight Passes enhance customer relationships and channels, as outlined in the business model canvas, improving the overall experience. Thus, it is recommended to study the potential to implement flight passes for the 2030 World Cup organised between Portugal, Spain, and Morocco.

Designing a business framework based on the principles of a Business Model Canvas can serve as a valuable tool for understanding Flight Passes' principles and the future. The 2030 World Cup will use principles from upcoming chapters to create a business framework, focusing on flight passes, subscription models, aviation, and the business model canvas.

### **1.3 Object**

The object is the study of business models in aviation focused on exploring new business models. Including Flight Pass as a new product results from the market trend towards subscription business models.

### **1.4 Objectives**

#### **1<sup>st</sup> - Assess the current business model in aviation.**

The first objective is to understand the current panorama of business models in aviation, especially in businesses related to passenger transport, with a focus on commercial aviation. To understand and develop tools to create new business models, one must first understand the current ones.

#### **2<sup>nd</sup> – Review the currently available flight passes and frame them on the Business Model Canvas.**

By looking at the method related to the Canvas, the current Flight Pass models are analysed. The utilisation of the Canvas tool enables an examination of the existing models, leading to insightful observations about the Flight Pass product and the supporting organisational environments.

### **3<sup>rd</sup> - Create a business plan with a business model canvas to evaluate the 2030 World Cup flight pass.**

The empirical knowledge obtained through the fulfilment of the second objective is created as a basis for developing a business plan using the Business Model Canvas by Osterwalder & Pigneur (2010). This model will be centred on the development of a Flight Pass to be applied during the 2030 World Cup.

## **1.5 Research Methodologies**

First, defining the essential concepts is crucial for developing a case study. This requires conducting a literature review in the first chapter of the current state of the field. The review should concisely contextualise the concept's history, present diverse author perspectives and define all relevant terminology. To ensure objectivity, sources that allow for characterisation, such as scientific journals, news articles, and books, will be consulted. This chapter must present the analysis framework selected for the empirical and case studies. The framework selected is the Business Model Canvas. This is a type of descriptive research where concepts and analytical tools are presented first to enable the case study analysis.

The following chapter provides concatenated cases in application, using the dissected Business Model Canvas from the second chapter. Through the analysis of the selected organisations, distinguishable patterns, and nuanced differences associated with each product and organisational model can be identified. The primary research method used in this study is inductive. Financial reports, statistics aggregator websites and the chosen organisations' websites provide the information used to aid the study, which can be efficiently organised through the Canvas. After analysing the organisational model and the product under investigation, namely the flight pass, objective conclusions can be drawn that shape this empirical study. This forms the foundation upon which the case study should be built, as the results achieved facilitate the development of a business plan.

Considering the concepts outlined in the literature review and the findings from the previous study, a meticulous analysis of the problem under investigation is warranted.

The 2030 World Cup takes centre stage. To tackle the issue at hand, an assessment of the empirical study's strengths is conducted. Subsequently, the findings are presented through the Business Model Canvas.

Validation of the results will be needed through a survey of professionals within the aeronautical sector. The execution of the investigation will involve the application of the Business Model Canvas principles, and the analysis of its outcomes will verify the resolution of the problem. The validated conclusions from Canvas results are presented, followed by potential future research areas, reflections on applied methods, and encountered difficulties during this scientific study.

## **1.6 Structure**

This dissertation comprises five chapters:

- Introduction;
- State-of-the-Art;
- Current Business Models and Flight Passes;
- World Cup 2030: A new Business Model with Flight Pass;
- Conclusions.

The motivation for the research is outlined in the first chapter. The current problem is described and historically contextualised. Next, the aims and objectives are defined, and the research methodologies are introduced. This chapter frames the dissertation's structure precisely.

In Chapter 2, the fundamental concepts are defined to establish the problem's groundwork. Therefore, in keeping with the first aim, the key ideas of business models, including Osterwalder (2004) model, currently exist within the aviation industry. Subscription business models, which are the focus of this dissertation, and revenue management systems are necessary for applying these new forms of subscription to air travel sales. This chapter presents various sources of information for understanding the current state of the market and for predicting new business models.

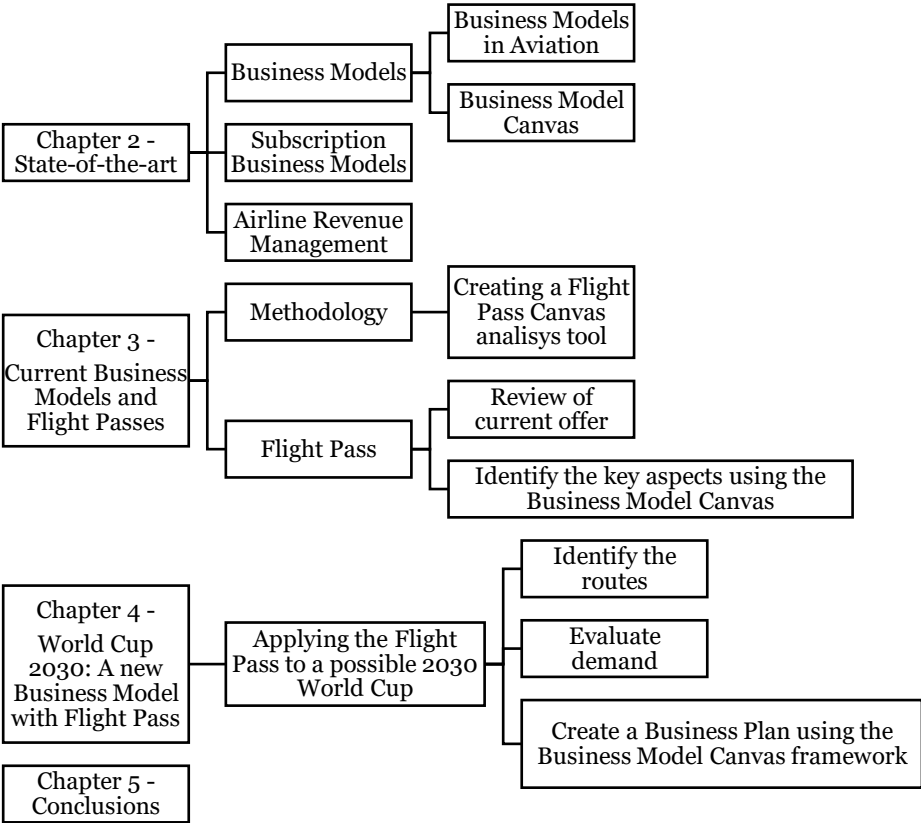
In the third chapter, to meet the second objective, it is analysed the business models of several airlines (following the structure presented in section 2). Both airlines with and without Flight Passes will be examined to acquire insight into the differences in their business models using the inductive method. The Business Model Canvas will be used as a framework for the study. Tools that are specifically designed to comprehend the

product will be utilised to establish an empirical foundation for applying the findings to a particular case study of the Flight Pass, regardless of whether it is hypothetical.

Finally, in the fourth chapter, the knowledge acquired will be used with the Business Model Canvas to construct a business plan that creates a product and a business focused on the Flight Pass. This dissertation aims to analyse the sports and airport infrastructure in Portugal, Spain, and Morocco within the context of the upcoming 2030 football World Cup to be held in these countries. The aim is to provide an objective overview of the existing reality and factors shaping the aviation market in this region. This chapter aligns with the third and final aim of this dissertation. As a follow-up to the case study in the fourth chapter, a validation of the results will be conducted by industry experts. The final business model canvas will be refined based on the input from the survey, then the canvas will be refined and conclusions will be made. These findings will be evaluated through a canvas-based survey, with comparisons made against the case study results.

The dissertation's conclusion summarises the study's results, along with final recommendations for possible research in this field. Figure 1.1 summarises the structure of the dissertation.

Figure 1.1 - Dissertation Structure



## Chapter 2

### State-of-the-art

#### 2.1 Introduction

This chapter aims to present, based on the stated objectives, a brief review of the literature produced and the main concepts of this work. It has been structured according to the level of abstraction of the concepts presented. The presentation begins with the most abstract concepts and progresses towards those that are most relevant to the specific case study.

Accordingly, the business model concept should be introduced initially. This will lay the groundwork for the development of other concepts, in particular the foundation of this study: the Business Model Canvas framework. All components of the canvas are explained for quickly analysing the case study. It is also necessary to study the state of business models in the aviation sector to capture trends and perspectives. The study of subscription business models is crucial, as the aim of this work is to analyse subscription trends in the world of aviation, particularly in ticket sales. Finally, it is essential to understand the mechanisms of ticket pricing. In this way, it will be possible to understand future trends with the basics of revenue management in aviation.

This brings us to the concepts of Flight Pass and Subscription Aviation, which are the subject of this work.

#### 2.2 Business Model

The term business model is used everywhere, from boards of directors to newspapers to the public. However, it is a difficult concept to describe; it is ubiquitous, and it is ingrained in the language, so it is a holistic concept. Baden-Fuller & Morgan (2010) use it from a strategic perspective. Accordingly, it is crucial to perceive business models and strategy from a shared perspective.

However, it will be emphasised that although it is a term used in all media, including academia, its definition is not closed and differs according to the work in question. In the work of Zott et al. (2010) of the 103 publications analysed in the study, over 1/3 use the

term without defining it. Existing definitions are sparse and lack consensus, leading to an increase in interpretations of the term.

The same article, mentioned in the previous paragraph, found after an analysis of the literature that the term business model is defined as a *statement*, a *description*, a *representation*, an *architecture*, a *conceptual tool or model*, a *structural template*, a *method*, a *framework*, *pattern* and, finally, as a *set*. (Zott et al., 2010).

The relevant concepts proposed for the definition of a business model, summarised by Zott et al. (2010), are summarised in Table 2.1.

Table 2.1 - Business Model definitions and authors, adapted from (Zott et al., 2010)

<b>Author(s) (Year)</b>	<b>Definition</b>
Timmers (1998)	The business model is "an architecture of the product, service and information flows, including a description of the various business actors and their roles; a description of the potential benefits for the various business actors; a description of the sources of revenues" (p. 2).
<b>Amit &amp; Zott (2001)</b>	The business model depicts "the content, structure, and governance of transactions designed so as to create value through the exploitation of business opportunities" (p. 511).
<b>Chesbrough &amp; Rosenbloom (2002)</b>	The business model is "the heuristic logic that connects technical potential with the realisation of economic value" (p. 529).
Magretta (2002)	Business models are "stories that explain how enterprises work. A good business model answers Peter Drucker's age-old questions: Who is the customer? And what does the customer value? It also answers the fundamental questions every manager must ask: How do we make money in this business? What is the underlying economic logic that explains how we can deliver value to customers at an appropriate cost?" (p. 4).
Morris et al. (2005)	A business model is a "concise representation of how an interrelated set of decision variables in the areas of venture strategy, architecture, and economics are addressed to create sustainable competitive advantage in defined markets" (p. 727). It has six fundamental components: Value proposition, customer, internal processes/competencies, external positioning, economic model, and personal/investor factors.
Johnson et al. (2008)	Business models "consist of four interlocking elements, which, taken together, create and deliver value" (p. 52). These are customer value proposition, profit formula, key resources, and key processes.

<b>Author(s) (Year)</b>	<b>Definition</b>
<b>Casadesus-Masanell &amp; Ricart (2010)</b>	"A business model is [...] a reflection of the firm's realised strategy" (p.195).
Teece (2010)	"A business model articulates the logic, the data and other evidence that support a value proposition for the customer, and a viable structure of revenues and costs for the enterprise delivering that value" (p. 179).

The correlation between a particular organisation and a specific business model highlights how the actions and strategies of a single organisation can define a business model (Baden-Fuller & Morgan, 2010). As an illustration, when referring to a specific low-cost carrier model, the terms "Ryanair Business Model" or "SouthWest Airlines Business Model" are employed.

### **2.3 Business Model according to Osterwalder**

The work of Osterwalder can be summarised in the following section. The framework proposed by this author will analyse the case study and the airline business. Therefore, it was necessary to analyse his definition of a business model and the framework he uses to evaluate and create business models. Early in his research, this author proposed a business model ontology, which he later called the Business Model Canvas in 2010.

First, it is important to define the term business model, according to Osterwalder (2004). It was already seen some definitions of the term given by other authors. Osterwalder (2004) suggests a definition based on the meaning of the words Business and Model, according to the Cambridge Dictionary. In light of the aforementioned considerations, it seems appropriate to propose the following definition of business models:

*"A business model is a conceptual tool that contains a set of elements and their relationships and allows expressing a company's logic of earning money. It is a description of the value a company offers to one or several segments of customers and the architecture of the firm and its network of partners for creating, marketing and delivering this value and relationship capital, to generate profitable and sustainable revenue streams."* (Osterwalder, 2004, p.15).

This will be the basic concept of this work; it is also important to highlight the most important factors related to the business model, strategy and approaches to follow to understand and define a business model.

Osterwalder (2004) defines the concept of the Business Model ontologically; he defines a trilogy, illustrated in Figure 2.1.

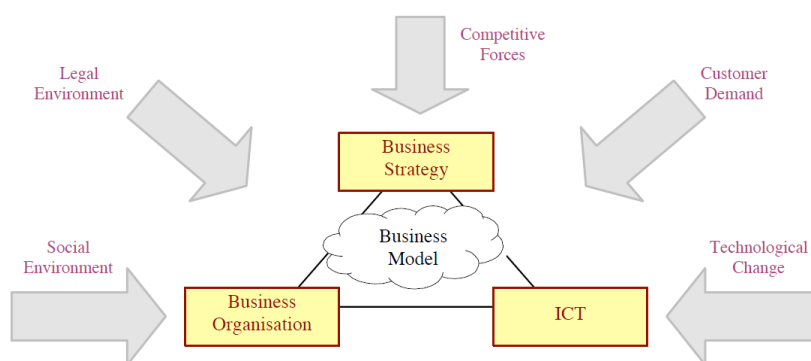


Figure 2.1 - Environment, Business Models, Strategy, Process, and Information and Communication Technologies (ICT), adapted from (Osterwalder, 2004)

First, the concept of strategy is defined; Boyles (2022) defines business strategy as a set of initiatives that an organisation must pursue to create value for itself and its stakeholders by acquiring a competitive advantage in the market.

Osterwalder (2004) examines the different visions for defining strategy, starting with showing that it must be part of an organisation's purpose, building it in such a way as to achieve a balance between internal advantages and disadvantages, and looking at external risks and opportunities. It can also be a way of positioning the organisation in the market or building a specific set of goals and necessary steps and building ways to review that progress.

For Osterwalder (2004) the Business Model is a way of implementing the organisation's strategy, based on the logic of monetising this cycle. This concept is illustrated in Figure 2.2.

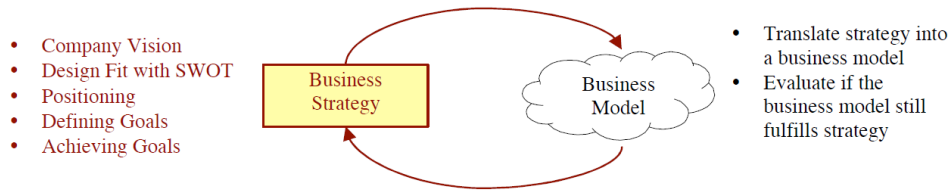


Figure 2.2 - Business Strategy and Business Model, adapted from (Osterwalder, 2004)

Another element of the trilogy, shown in Figure 2.1 and Figure 2.3 is the Business Organisation. Like strategy, the organisation component refers to the same topics, but the approach to the problem is different. It is about all the units, departments, and sets of processes. Business organisation and business model are therefore closely related. The relationship is depicted in Figure 2.3 (Osterwalder, 2004).

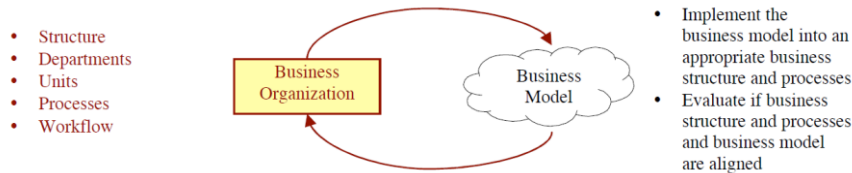


Figure 2.3 - Business Organisation Interrelation with Business Model, adapted from (Osterwalder, 2004)

Finally, it is necessary to consider the ICT aspect, as designated by Osterwalder (2004). This includes all the communication and technology systems, as well as the software tools that support both management and the potential interface with the customer. This is a very important element of the business model, especially in terms of innovation. With organisations that base their customer interaction model on the Internet, the importance of this pillar becomes clear. It also makes it easier for organisations to interact internally and externally, enriching their product. Figure 2.4 shows the relationship between the Business Model and ICT, according to Osterwalder (2004).

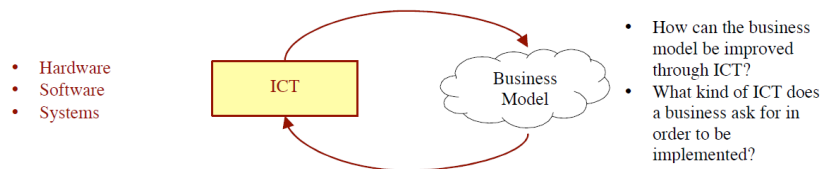


Figure 2.4 - ICT and Business Model, adapted from (Osterwalder, 2004)

Besides the aforementioned elements, Osterwalder (2004) identifies other factors around the organisation that can influence the business model. They are listed below:

- Technological change - it was noted earlier that technological change can trigger a change in the business model; tools for interacting with the consumer via the internet or other technologies can make the business digitally enhanced. As technology evolves, it becomes cheaper and, as such, savings or efficiencies are achieved. It should also be emphasised that technological evolution itself can be a potential risk for the extinction of a particular business model;
- Competitive forces - Another form of business model evolution is competition from other organisations. The entry of new competitors can introduce new dynamics, and a new incumbent can change the market position, so organisations need to adapt their business model to survive in a competitive environment;
- Customer demand – can significantly impact the business model, as changes in consumption patterns, fashions, and revenue fluctuations can either alter or jeopardise it;
- Social environment - The social environment around an organisation can influence the way it develops its business model. Stakeholder pressure can change the shape of the business model; for example, the use of inexpensive labour in third-world countries can attract the attention of NGOs and mobilise public opinion against the organisation. Besides ethical issues, public acceptance of technology can also lead to behavioural changes;
- Legal Environment - legislative changes may also lead to changes in the business model.

Osterwalder (2004) builds upon earlier studies to outline four specific dimensions that a business model ontology should address:

- Product - includes the business the organisation is in, the products it brings to market, and its value proposition;
- Customer interface - this should specify the target audience, the product, or service that will be provided to the customer, and how the relationship between the customer and the organisation will be managed;
- Infrastructure management - describes the most efficient way possible for the organisation to deal with logistics and infrastructure, who it should engage with and what relationships it should establish;
- Financial aspects - addresses the revenue model, the cost structure, and the sustainability of the business model.

The author defines this model as unrefined and sparse in its description and presents a more formal and detailed model; then comes the nine-block model, the Business Model Canvas. Table 2.2 shows the proposal presented by Osterwalder (2004) based on the pillars presented above, which is based on previously existing literature.

Table 2.2 - Nine building blocks of Business Model Canvas, adapted from (Osterwalder, 2004)

<b>Pillar</b>	<b>Building Block of Business Model</b>	<b>Description</b>
<b>Product</b>	Value Proposition	A Value Proposition is an overall view of a company's bundle of products and services that are of value to the customer
	Target Customer	The target customer is a segment of customers a company wants to offer value to.
	Distribution channel	A distribution channel is a means of getting in touch with the customer
<b>Customer Interface</b>	Relationships	The relationship describes the kind of link a company establishes between itself and the customer
	Value Configuration	The Value Configuration describes the arrangement of activities and resources that are necessary to create value for the customer
	Capability	A capability is the ability to execute a repeatable pattern of actions that is necessary in order to create value for the customer
<b>Infrastructure Management</b>	Partnership	A Partnership is a voluntary initiated co-operative agreement between two or more companies in order to create value for the customer
	Cost Structure	The Cost Structure is the representation in money of all the means employed in the business model
<b>Financial Aspects</b>	Revenue Model	The revenue model describes the way a company makes money through a variety of revenue flows

Table 2.2 can be visually transformed into a model, as presented by Osterwalder & Pigneur (2010), in Figure 2.5.

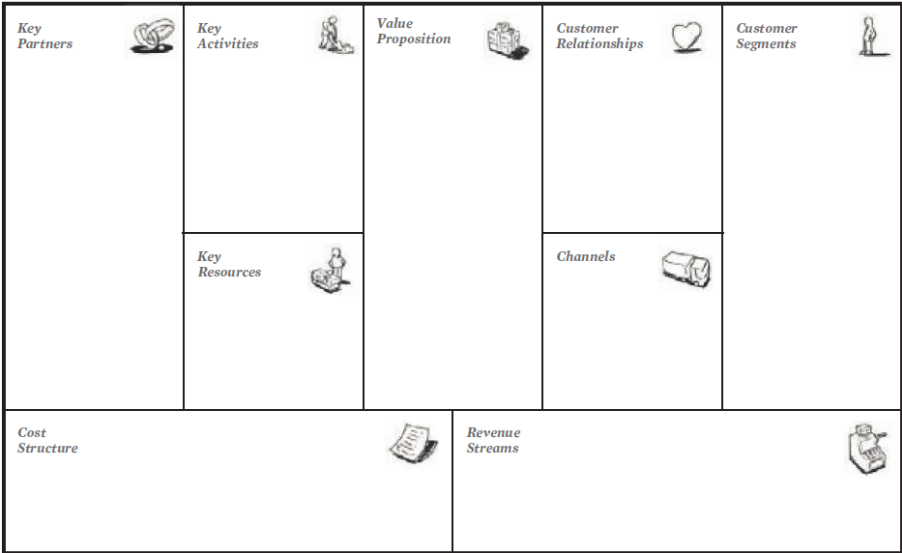


Figure 2.5 - Business Model Canvas visualisation, adapted from (Osterwalder & Pigneur, 2010)

The same author also organised the interrelationships of these blocks, as shown in Figure 2.6.

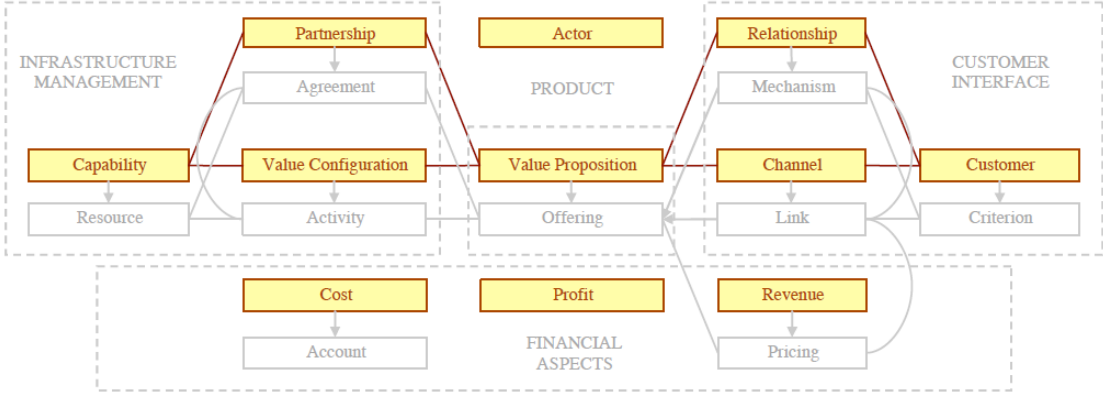


Figure 2.6 - Business Model Ontology and highlighted relations, adapted from (Osterwalder, 2004)

Following the terminology used in Figure 2.5, it is presented the definitions of each block. Although this terminology belongs to the same author, it comes from a later work aimed at entrepreneurs and organisations, Business Model Generation - (Osterwalder & Pigneur, 2010).

**Customer Segments**

This block focuses on the different people or organisations that a company wants to reach and serve. A business model may favour one type of customer segment over another. The potential audience size can vary, thus requiring a deliberate decision on which segment

to target and which to exclude. Once that decision is made, the business model is carefully designed around it, always keeping in mind the principles for which the decision was made (Osterwalder & Pigneur, 2010).

A customer segment can be separated if:

- Needs require or justify a different offering;
- The way to reach them requires different distribution channels;
- Another relationship is needed;
- There are significant profit differences;
- Willingness to pay for a particular nuance of the product is different.

Osterwalder & Pigneur (2010) list several types of customer segments, the most important of which are:

- Mass market - Doesn't differentiate between customer segments and focuses its value proposition, sales channels, and customer relationships on a large group of customers with vaguely similar needs;
- Niche Market - targeted at a specific customer segment. Here, the value proposition, sales channels, and customer relationships are designed with that customer in mind;
- Segmented - although they offer similar value propositions, they differ in their requirements and must be customised for each client;
- Diversified - typically, these are two unrelated customer segments with different needs and problems, and therefore a completely different value proposition depending on the segment in focus;
- Multi-sided platforms - serve two or more customers that are interdependent.

## **Value Propositions**

This block describes the set of products and services that create value for a particular customer segment. The goal is to solve the customer's problem or satisfy their needs. As such, the value proposition can be seen as the set of benefits that an organisation offers to its customers. They can be innovative and disruptive, offering something new to the market, or they can offer something that already exists, but with new attributes and benefits (Osterwalder & Pigneur, 2010).

Some elements make it possible to assess the Value Proposition of a particular organisation, such as novelty, performance, customisation, "getting the job done", design, brand/status, price, cost reduction, risk reduction, accessibility, and convenience (Osterwalder & Pigneur, 2010).

## **Channels**

This block should describe how an organisation communicates and gets its product/service to the Customer Segment to deliver the Value Proposition. This concept can be referred to as an organisation's interface with the customer, promoting the user experience (Osterwalder & Pigneur, 2010).

Channels can serve a variety of functions, including, according to Osterwalder & Pigneur (2010):

- To draw customers' attention to a particular company's product/service;
- Helping customers understand the organisation's Value Proposition;
- Enable customers to purchase products and services;
- Enable customer follow-up after the purchase.

It is important to distinguish between direct and indirect channels, and also between owned Channels and partner Channels. For an organisation to deliver on its value proposition, it is critical to find the right combination of channels to reach its customers. This distinction is displayed below (Osterwalder & Pigneur, 2010):

- Owned channels can be direct, such as a sales website or a sales team; or they can be indirect and owned, through retail sales in which the operation or ownership is owned;
- Partner channels are indirect and can vary between wholesale, retail, or external partner websites. Using partner channels can cause lower margins, but allows for easier expansion and leverages the strengths of the chosen partner;
- Owned channels, and especially direct channels, offer higher margins but are more expensive to operate and implement. It is therefore necessary to find the right combination for a business model to maximise revenue while providing the best possible customer service.

## **Customer Relationships**

This block should describe the relationships the organisation intends to establish with a specific Customer Segment. Relationships come in different forms, from personal bonds to automated interactions, and can be fuelled by the goal of acquiring customers.

Depending on the customer segment, different customer relationships can exist; the most relevant are listed below: Personal Assistance; Dedicated Personal Assistance; Self-Service; Automated Services; Communities; and Co-creation (Osterwalder & Pigneur, 2010).

## **Revenue streams**

This is the block that represents the revenue an organisation earns from each customer segment. Each revenue stream can have different pricing strategies: fixed price, negotiation, auction, market-based, and volume-based (Osterwalder & Pigneur, 2010).

A business model can handle two types of revenue streams (Osterwalder & Pigneur, 2010):

- Revenue from non-recurring customer transactions;
- Recurring revenue from constant payments that require a value proposition to customers or post-purchase customer service.

There are different ways to generate revenue in an organisation, or rather, there are different sources of revenue (Osterwalder & Pigneur, 2010):

- Asset sale - sale of ownership rights to a product;
- Usage fee - a revenue stream is generated based on the use of a particular service. For example, hotel rooms are charged only by the number of nights;
- Subscription fees - revenue is generated from continued access to a service.;
- Lending/Renting/Leasing - a temporary right to the exclusive use of a specific product or asset is got for a defined period for a constant stream of revenue;
- Licensing - revenue is generated through transferring intellectual property for a fee;
- Brokerage fees - derive from the income from intermediating services on behalf of one or more entities;
- Advertising - revenue is generated from a fee for advertising and promotion of a particular product, service, or brand.

Each Revenue Stream has a different pricing scheme, and this choice is critical to the type and amount of revenue generated. There are two pricing mechanisms, fixed and dynamic.

To determine a fixed price, one can establish it based on static variables that are influenced by (Osterwalder & Pigneur, 2010):

- The individual price of the product, service, or Value Proposition;
- The functionality of the product or the quality it represents in terms of Value Proposition;
- The target audience, i.e. the price depends on the characteristics of the Customer Segment;
- From the volume sold, the price is determined according to the quantity sold.

Dynamic price variation depends on market conditions. These include the following conditions (Osterwalder & Pigneur, 2010):

- Negotiation/bargaining, in which the price is determined by negotiation between the parties involved, depending on their bargaining power and capacity;
- Yield management, where the price depends on the inventory and the time of purchase, this type of scheme is common in the sale of airline tickets;
- Real-time market where the price varies only with the supply and demand of the product/service;
- Auctions where the price is set by auction.

### **Key resources**

This block highlights the main assets that enable the business model to function. All business models require assets to function; they enable an organisation to create and deliver a value proposition, reach the market, maintain relationships with customer segments, and generate revenue. Depending on the business model, different key assets are required.

Key resources can be owned, borrowed from another organisation, or provided through agreements with key partners.

Key Resources are divided into (Osterwalder & Pigneur, 2010):

- Physical - includes manufacturing facilities, buildings, vehicles, machinery, systems, point-of-sale systems and distribution networks;
- Knowledge - includes intellectual property, patents, rights, partnerships, brands, and customer databases. They are difficult to create and implement, but once they are in place, they can be a precious resource within the organisation, bringing recognition from customers;
- Human resources - all organisations need human resources, but they are more prominent in certain types of business models, including industries where knowledge and creativity are critical;
- Financial - in this context, the discussion pertains to financial guarantees, including cash, lines of credit, and stock options/shareholdings, which facilitate the recruitment of key personnel.

### **Key Activities**

Describes all the activities that an organisation must perform to make its business model a success. All business models depend on a certain number of activities to work. These are the most important actions that must be put into practice for an organisation to operate successfully.

As with key resources, activities are needed to deliver a value proposition that enables markets to be reached, customer relationships to be nurtured, and revenue to be generated.

Key activities can be grouped as follows (Osterwalder & Pigneur, 2010):

- Production - are the activities related to the design, manufacture, and delivery of the product in a quantity and/or to a desired quality. It is the most important activity in business models involving organisations dedicated to manufacturing products;
- Problem Solving - this type of activity comprises solving problems for individual customers and requires a business model that includes knowledge management and ongoing training;
- Platform/Network - in this activity, the organisation employs a network or platform, whereby a fundamental system functions as the core activity. The responsible organisation is required to oversee the platform, provide all necessary services for its operation, and actively promote it.

## **Key Partnerships**

This block includes the entire network of suppliers and partners that make the business model work. Organisations typically form partnerships to optimise their business model, reduce risk, or acquire other resources.

Business models increasingly rely on partnerships to grow and evolve. Osterwalder & Pigneur (2010) identifies four types of partnership:

- The establishment of strategic alliances between companies that are not direct competitors;
- Coopetition is a term used to describe the collaborative efforts between competitors, where they form partnerships to leverage each other's strengths;
- Joint ventures to create a new business;
- Buyer-supplier to ensure a reliable and beneficial supply chain.

There are three main reasons to create a partnership (Osterwalder & Pigneur, 2010):

- Optimisation and economies of scale - as one of the most basic forms of partnership, the buyer and supplier design a system to optimise the allocation of resources and activities. It is impractical for an organisation to have all the means necessary for production or to perform all activities in isolation. By optimising operations and leveraging the economies of scale among partners, it achieved cost reduction through outsourcing and shared infrastructure;
- Risk reduction - partnerships can reduce risk in competitive environments. Typically, competing companies can form strategic alliances in an area, for example by creating standards;
- Acquisition of particular resources and activities - Again, because it is impossible to have all the resources to produce everything within the organisation, as the business model requires, it is necessary to turn to other organisations to provide resources for certain activities, which may involve acquiring knowledge, licenses, or access to new customer markets.

## **Cost structure**

This block should describe all the costs involved in operating a particular business model. It should emphasise which costs are the most important to operate. This is necessary because there are costs associated with creating and developing value in an organisation, maintaining customer relationships, and generating revenue to support the business

model. One way of assessing the Cost Structure should be to define the Key Resources, Key Activities, and Key Partnerships.

Many business models can be built around the Cost Structure by optimising it so that the cost structure itself becomes the Value Proposition for the customer. Low-cost airlines are among the examples provided. Costs must be minimised in any Business Model. However, there are two classes of Cost Structures (Osterwalder & Pigneur, 2010):

- Cost-driven - in this case, the business model favours minimising costs as much as possible, and the cost structure should be kept to the essentials. A Value Proposition that favours low costs should be used, processes should be automated as much as possible and outsourcing should be favoured, creating a workforce that is as dynamic as possible and always tailored to requirements. Low-cost airlines fall into this category;
- Value-driven - various organizations do not take the cost implications of certain decisions seriously when designing their business model. They are more focused on creating value by offering a premium value proposition that focuses on a personalized service experience.

Cost Structures can fall into the following major categories (Osterwalder & Pigneur, 2010):

- Fixed Costs - these costs remain unchanged regardless of the volume of goods produced or services provided. Salaries, rents, and costs associated with facilities can fall into this category. Organisations dedicated to the production of goods are characterised by a high proportion of fixed costs;
- Variable Costs - these costs vary depending on the volume of goods or services produced;
- Economies of Scale - within this category, increased production leads to greater efficiency gains. The aim is to purchase goods in bulk at discounted rates, reducing the per-unit production costs;
- Economies of Scope - this is an advantage that some organisations enjoy in the broader scope of operations. It allows, for example, the same distribution channels or marketing operations to support a variety of products.

After providing a definition of the Business Model and discussing the working framework, business model canvas, the aim is to evaluate the commercial aviation

market and identify the prevailing business models. The general features of the airlines' business models will then be analysed.

## **2.4 Business Models in Aviation**

After reviewing the concept of the business model and defining the framework for its evaluation, it is necessary to analyse these topics applied to aviation in the literature.

Kuyucak Şengür & Şengür (2020) state that classifying the type of airline business model is an arduous process, as the characteristics of the business are similar across the board, with minor differences in the details. Because of the industry's dynamic nature, the classification is complex and lacks consistency or standardisation. It is claimed that business models are part of a spectrum that falls between low-cost and full-service companies, which is detailed in this work. This spectrum allows for the existence of hybrid business models.

There are five types of airline business models according to a consensus in the industry:

- Full-service;
- Hybrid;
- Low-cost;
- Charter;
- Regional airlines.

It is also important to note that airlines can have a cargo transport business, dedicating themselves only to this segment or carrying both cargo and passengers.

### **2.4.1 Full-Service Airlines**

Full Service Network Airlines (FSNC) can also be referred to as legacy or traditional airlines. In this model, airlines provide a diverse selection of destinations along with a range of accompanying services, including in-flight entertainment, flexibility in changes and cancellations, and multiple classes and airport lounges. As such, they appeal to business and leisure travellers by offering domestic and international flights. They use a network of connections based on a hub-and-spoke structure; this model makes it possible to offer passengers more destinations that connect at the hub, allowing for greater connectivity that benefits both passengers and businesses. A larger number of destinations can then be reached by connecting flights from the hub. It is usually unnecessary to use another airline to reach the desired destination. This model makes it

easier for customers to reach a destination that would not be covered by a point-to-point network (Kuyucak Şengür & Şengür, 2020).

It is common for this type of airline to offer a range of services, including first, premium, comfort, and economy class, and other in-flight services such as meals and beverages. They typically operate routes of varying lengths and attract both tourists and business customers. As a result, these companies focus on marketing campaigns that go beyond price. They therefore promote superior service at all stages of the journey, including at the airport. As a result, differentiation through the use of main airports, airport lounges, and frequent flyer programmes is normal. It is common for these types of companies to be involved in alliances with code-sharing, so connecting flights can be provided by other companies; in addition, it is possible to use loyalty programs, and lounges at airports that are not part of the company's hub (Kuyucak Şengür & Şengür, 2020).

Gillen (2006) argues that the selection of a network in the aviation market is closely tied to the business strategy and ultimately affects the business model. The hub-and-spoke model is typically associated with FSNC companies. To reach a broader audience, these companies need to cover as many products and geographies as possible. As such, they must be flexible, allowing for no-shows and rebooking by passengers and making the product offered distinctive. Thus, the existence of multiple destinations and the need for multiple spokes require aircraft with different capacities and performance characteristics. This increases the need for capital, labour and operating costs. The variety of aircraft and routes increases labour costs due to lower productivity. This can be associated with an operation that requires more turnaround time, whether because of airport congestion at peak movement times, transferring baggage to connecting flights, or even the change of crew required for the connecting operation. It is important to note that this type of operation is conditioned by the airport infrastructure and the logistics contracted by the operating airline. Currently, it is possible to mitigate these shortcomings through highly sophisticated computerised management systems. It should also be noted that this type of operation, because of its complexity, has higher costs due to the variance associated with a complex management structure.

Gillen (2006) shows that the choice of network is critical to the success of this model. A hub-and-spoke model must be based on the principle of flight compatibility. If a hub collects passengers from different origins, it can route them to destination B on an aircraft that can accommodate all the passengers, achieving economies of scale. If the same operator were to fly the route from one of the various origins to destination B (in a point-to-point model), there could be savings in certain costs (density economy), but

utilisation, and therefore the load factor, would be lower, leading to lower economies of scale. It is important to underline the effects of complementarity between routes in the hub-and-spoke model, i.e. an FSNC company can internalise costs by being able to control routes to and from the hub, predicting the influence that each of these routes has on each other, retaining customers for their entire journey on a flight with the same company. By adopting this approach, there is a notable increase in revenue generated from connecting flights, resulting in the optimisation of revenue across the entire network.

Therefore, according to Gillen (2006) integrated computerised systems for network management (Yield and Revenue Management), accounting and logistics are critical; they allow better decisions to be made about the capacity of the aircraft to be used and the timing and frequency of certain routes. As a result, it's easier to take an integrated view of the network. In this model, it is more interesting to maximise network yield than individual routes. By considering this model as a network, it becomes workable to enhance frequencies on connecting routes through the utilisation of smaller aircraft. Consequently, load factors are higher and revenues are increased. This model enables the establishment of a regional flight system that can provide support for international routes. This type of service is also made possible by international alliances between companies, achieved through code-sharing.

Table 2.3 summarises the key characteristics of a full-service company according to Kuyucak Şengür & Şengür (2020).

Table 2.3 - Characteristics of full-service network airlines, adapted from (Kuyucak Şengür & Şengür, 2020)

<b>Aspects</b>	<b>Characteristics</b>
<b>Fleet</b>	Diverse, from small regional aircraft, and narrow-body jet planes to wide-body
<b>Cabin Configuration</b>	Different class configurations, notably first, premium, comfort and economy class
<b>Network Range</b>	Short, medium and long haul, from domestic to intercontinental
<b>Network Structure</b>	Hub-and-spoke network
<b>Schedules</b>	Connecting flights from hubs with high-frequency
<b>Pricing</b>	High fares, complex yield management

## 2.4.2 Low-Cost Airlines

The birth of low-cost airlines is usually attributed to the legislative packages that started the deregulation of the US (United States) airline market. However, the first experiments occurred in the United States before deregulation. The states of California and Texas, because of their geographical and demographic size, allowed for the existence of deregulated low-cost or low-fare companies operating only within the state's territory. It was within this framework that the first low-cost airlines appeared, Western Pacific Airlines in California and Southwest Airlines in Texas. It was on this empirical basis that Congress took steps to deregulate the US domestic market (Taweelertkunthon, 2006).

In a regulated market, there are not enough rewards to incentivise better management, to identify potential problems in the market, or to find more attractive markets. It becomes difficult to address consumer concerns while keeping costs under control. Gillen & Gados (2008) state that companies must operate based on market opportunities, rather than an inhibiting regulatory framework, and must take financial options into account. Pricing should be determined by costs, prioritising operational efficiency and always considering consumer needs, particularly in niche markets.

The US Congress passed legislation in 1978 to deregulate the domestic airline market, which led to the growth of low-cost carriers. Most of the new entrants were based on low fares with few ancillary services. However, many of these companies did not survive and operated for only a short time after entering the market. The market proved that low fares were insufficient for success. Many of these companies expanded too aggressively and incurred significant losses. Early on, this business model was limited to a handful of companies that succeeded. However, the full-service companies have presented strategic innovations: the hub-and-spoke route model, frequent flyer programmes and revenue and passenger management systems (Yield and Revenue Management). For example, the frequent flyer programme creates brand loyalty, so there is a barrier to new airlines entering the market, as customers are already loyal. It is easier for established airlines with an existing network to offer these types of benefits than for new entrants challenging the incumbents' market position (Taweelertkunthon, 2006).

Initially, most airlines failed to establish themselves in their market niche and operated for a short period. Despite low fares, the model was not based on low costs, and the decisions made did not support long-term strategies, focusing on aggressive entry strategies, such as buying inexpensive aircraft from airlines that were exiting the market, rather than aircraft that were better suited to the routes and had lower fuel and operating

costs. As a result, and because of this rocky start, this type of business model received little attention from academics during the 1980s. There is the remarkable case of Southwest Airlines, one of the few survivors of the deregulation era, which has been profitable since 1971 (except 2020). This success story has been widely analysed in the literature and fuelled the re-emergence of the low-cost model in the 1990s. Also worth mentioning is the remarkable case of Ryanair, which in 1991 transformed itself from a full-service airline to a low-cost carrier based on the Southwest model. Since then, it has become the leading low-cost airline in Europe (Taweelertkunthon, 2006).

Low-cost airlines focus on minimising costs, that is their strategy. The ability to provide customers with competitive low fares in a market where full-service airlines compete is only achievable through cost minimisation (Kuyucak Şengür & Şengür, 2020). It should be emphasised, however, that these companies are not only competing for the customers of full-service companies; a low-fare structure makes it possible to attract new customers by stimulating new demand segments.

Gillen & Gados (2008) define this new demand in the following terms: it is a strategy that seeks potential customers for "discretionary entertainment dollars" and not necessarily "travel dollars". They are seeking customers who are not necessarily from legacy companies, but those who would not normally travel. Their efforts are directed towards attracting customers who prefer spending their money on leisure rather than on travel. In the early days of low-cost airlines, these were passengers who did not use air travel or for whom air travel was a novelty. By inducing demand, price-sensitive customers are attracted and a new customer segment is reached. These types of customers prefer simpler products with fewer associated services at a lower price. This is reflected in the product's simplicity offered by low-cost airlines, fewer classes and differentiation, i.e. less passenger segmentation.

These airlines have had a significant impact on the airline industry, particularly on the use of secondary airports, by creating a simpler product that allows them to reach new customer segments and by popularising direct sales systems. The cost reduction strategy can be achieved through more frequent use of aircraft, shorter turnaround times, no associated entertainment and meal services, high utilisation of aircraft capacity, use of secondary airports, fleets that are as homogeneous as possible - using one type or a small set of types of aircraft, low wage systems, the use of outsourcing services, profit sharing with employees, simple pricing systems, single or few classes and direct sales systems to the customer. These factors alone do not reduce costs; they must be combined, and only

their combination and the way they are combined can reduce costs (Kuyucak Şengür & Şengür, 2020).

By focusing on a single type of aircraft, typically the Boeing 737 or Airbus A320, low-cost airlines can benefit from the advantages of a homogeneous fleet, such as (Gillen & Gados, 2008; Kuyucak Şengür & Şengür, 2020):

- Better bargaining power at the time of purchase, reducing the unit costs;
- The cost of training pilots and crew is reduced by achieving economies of scale in training by specialising in a single model. This specialisation leads to increased productivity;
- Savings on maintenance, allowing them to purchase parts in bulk, or even associated services and safety manuals and on-board cards.

By utilising secondary airports that are underutilised and willing to forgo aeronautical revenues in order to stimulate demand at the airport, there is the potential to increase the number of movements, decrease turnaround times, and optimise aircraft and personnel usage. These airports, by opting not to pursue certain aeronautical revenues, contribute to substantial operational cost savings for companies (Gillen & Gados, 2008).

Increasing seat density can lead to a reduction in operating cost per passenger. Although the costs remain approximately the same, the cost per seat is reduced, which allows the fare charged to the passenger to be reduced (Gillen & Gados, 2008).

Low-cost carriers also sell certain services and products on board, allowing them to capitalise on services that are often included in full-service airlines' flight packages. Among them is the sale of food and beverages on board, which makes it possible to increase the revenue associated with the flight. This model also makes it possible to manage refuelling operations on the ground more efficiently and quickly (Kuyucak Şengür & Şengür, 2020).

Low-cost airlines operate based on point-to-point routes. It is part of their product design. Certain cities can be linked directly, eliminating the need for connecting flights through a hub. The ability to travel directly to the destination with no stops for connections is often viewed as a favourable aspect of this feature by consumers. This feature is also beneficial from a scheduling and flight plan management perspective, allowing for a better distribution of flight times throughout the day. To avoid congestion during a designated period, it is not required to offer schedules that are compatible with the connecting flights. This dispersal makes aircraft management more efficient by

eliminating the need for large numbers of aircraft to cover peak periods, as well as allowing crews, pilots, ground operations, maintenance, and catering services to be used to better utilise ramp space - resulting in less expensive slots (Gillen, 2006).

Low-cost carriers avoid using travel agents to save on commissions, and the product is sold online. Numerous companies are eliminating airport check-in counters as much as possible and penalising passengers who use them by charging a fee. This business is also based on the payment for checked baggage and seat selection. In 2016, it was estimated that a quarter of European low-cost airlines' operating revenues came from this type of ancillaries (AVRAM, 2017; Gillen, 2006; Gillen & Gados, 2008).

### 2.4.3 Hybrid Airlines

A hybrid airline has a strategy that combines the strategic principles of the low-cost and full-service models. To remain competitive in the market, certain companies have intentionally obscured certain distinguishing features of the previously described business models. To differentiate themselves, low-cost carriers have typically adopted some characteristics of full-service airlines. These include the use of main airports or the existence of a hub, the creation of strategic alliances with other companies to expand their network, the use of mixed fleets of different aircraft models, and the creation of frequent flyer programmes. Some companies have also expanded their number of distribution channels (Kuyucak Şengür & Şengür, 2020).

Jet Blue is an example of this type of airline, which uses hubs; however, it also operates point-to-point routes and has code-share agreements, which allow it to increase global connectivity. It also has two types of aircraft in its fleet and a frequent flyer programme. However, this is offset by one of the lowest employees per aircraft ratios in the industry and a high frequency and daily utilisation of aircraft that compares favourably with low-cost carriers. Air Lingus is a notable European example because it has transatlantic routes, which are characteristic of full-service airlines, but in the European market, it has a strategy similar to low-cost airlines (Jean & Lohmann, 2016).

### 2.4.4 Charter Airlines

Charter companies emerged in a context where a certain fringe of passengers, tourists, wanted to travel to destinations far from their homes, which would mean a travel time and cost too high for their purpose (Eugenio-Martin & Perez-Granja, 2021).

Buck & Lei (2004) note that charter airlines are the original low-cost carriers and are deeply rooted in the European tourism market. In 2003, for example, they accounted for 29 per cent of passenger traffic in the United Kingdom. The liberalisation of the European aviation market began in the 1970s, but the first package of measures did not arrive until the late 1980s, and in the 1990s, the package allowed charter airlines to operate more flexibly and compete directly with legacy airlines.

This type of airline is based on the allocation of non-scheduled hours, showing a highly seasonal business and a passenger experience more similar to low-cost airlines than full-service airlines. When charter airlines serve passengers on holiday, they have associated services such as accommodation, meals, tours, and excursions. These flights and packages are therefore sold through travel agents, who are the main distribution channel for this product and represent the largest force in the market. Often, travel agents and charter companies are vertically integrated into the same parent company, allowing for cost efficiencies that make them a larger force in the market and allowing for more competition among tour operators (Eugenio-Martin & Perez-Granja, 2021).

These companies benefit from certain economies, such as high passenger density on aircraft, high aircraft utilisation, simple service, low distribution prices, use of secondary airports, high labour productivity, and a single class. These are similarities to the low-cost airlines whose advantages are discussed in this topic. In addition, they also operate point-to-point routes, using fleets of the same type of aircraft or a few aircraft families (Kuyucak Şengür & Şengür, 2020).

It is also possible to classify charter flights, i.e. companies operating charter flights in the following segment, as described in ICAO (2004):

- Single entity charter or own-use charter that is chartered by an entity, whether an individual, organisation, or government organisation, solely to transport passengers or cargo, the cost of which is borne entirely by that entity and is not shared directly or indirectly with others;
- Affinity group charter for use by a group affiliated with a particular association or club, whose primary purpose is not travel;
- Common purpose charter where the flight is chartered by an organisation to resell it to a group of people who want to travel;
- A special event charter is a segment aimed at attracting people travelling to a special event.

In this segment, it is important to emphasise the work of Fichert et al. (2020) who conducted an empirical analysis of the charter airline business with a focus on business aviation. This term, business aviation, is briefly referred to as the "segment of aviation that delivers specific air services that are not open to the public... in which consumers are highly sensitive to comfort and time, even at high prices". Using the business model canvas and cluster analysis, the paper presents three types of air charter business aviation companies:

- Large, full-service business aviation support groups - in this case, they are integrated into a large group, with high independence in the group chain, a high level of geographical coverage, various services related to aviation operations (maintenance, aircraft management, fractional ownership, aircraft sales);
- Medium-sized business aviation firms - offer a variety of services and can either in-source or out-source the supply chain for aircraft-related services;
- Small business aircraft operators - highly independent of the service supply chain, primarily using external services and operating in a limited geographic area.

#### 2.4.5 Regional Airlines

They are defined by the use of smaller aircraft, between 20 and 100 seats, operating in a limited geographical region. Services are offered between small and large cities, employing the principle of short, regular flights. Alternatively: Full-service airlines may operate in large hubs where they serve and may be part of groups of such airlines. They are often based on flight code sharing. As such, marketing, asset management, maintenance, and even personnel and training activities can be managed by the parent or full-service company. They mainly operate niche routes on a point-to-point basis. They have higher costs than the other business models described above. It is not common to find independent regional businesses. Success in this business requires achieving exceptionally high load factors, which cause higher marketing expenditures. Some of these costs can be partially shared with the full-service company through established agreements. A well-determined fleet structure is needed - the trend is towards narrow-body jets - but the communities served must be considered. This requires in-depth knowledge of the market, investing in new assets when necessary and protecting existing ones (Kuyucak Şengür & Şengür, 2020).

## **2.5 Subscription Business Models**

The history of this business model can initially be traced back to the 16th century when map publishers induced their customers to buy or subscribe to future editions of their maps; this gave consumers access to new versions of these maps that could include new lands discovered or conquered. It was a way of capitalising on these deals with future purchases (Warrillow, 2015).

Subsequently, and as seen in Chapter 1 of this document, European newspapers in the 17th century adopted a similar model; customers had to subscribe to the publications that most interested them and publishers could raise capital, in combination with advertising, to cover editorial needs and distribution costs (Warrillow, 2015).

This method is crucial for businesses to attract and preserve customers. This model must ensure customer engagement by offering exclusive benefits (Iyengar et al., 2020).

With the advent of the digital segment, it was possible to make this type of business more attractive. To reach as many consumers as possible and monetise the digital goods produced, numerous companies have turned to subscription models. Since digital goods once produced have no cost to re-produce, apart from the infrastructure that supports them, they can be easily replicated. Therefore, companies that commercialise digital goods seek to reach as numerous customers as possible with a recurring revenue structure. To adequately cover the recurring costs associated with these customers, namely customer support and web hosting costs, adopting a recurring revenue structure is imperative.

Warrillow (2015) calls the new generation of consumers the Access Generation; they prefer to rent rather than buy, and they prefer to listen to a song on Spotify rather than buy it on iTunes. These examples given by the author are in line with the data presented in Zuora (2023). According to Zuora (2023), companies offering subscription products have grown 3,7 times faster than other goods companies over the past 11 years. Resilience is clear across sectors, including digital, software-as-a-service, media products, and consumer products.

Tzuo (2018) shows that new subscriptions and new business models have shifted the paradigm from a focus on the product to a focus on the customer. The customer is the organisation's centre now. According to the author, this is a form of *servitization* available to the consumer. It can be seen as the personalisation of a product tailored to each consumer. The digital nature of these new businesses makes this possible. They are

based on the collection of data from their customers, which makes it possible to create a unique product for each customer through the various services available. This new business perspective is illustrated in the author's diagram in Figure 2.7.

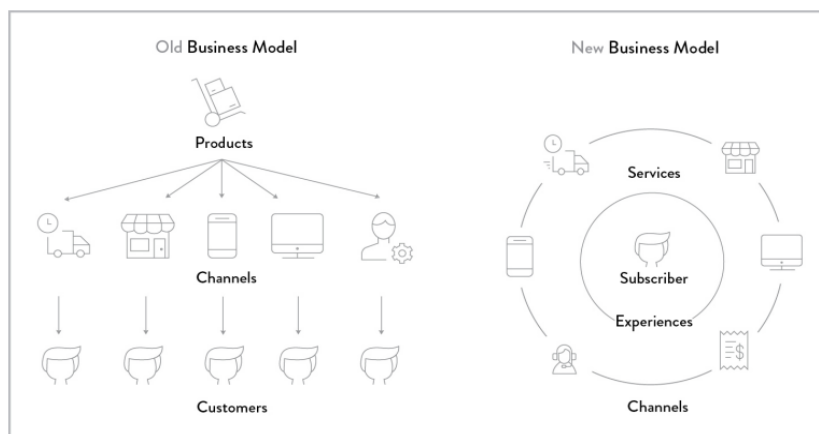


Figure 2.7 - The new business model of the subscription economy, adapted from (TzuO, 2018)

Warrillow (2015) states that an automatic customer or subscriber is better than a normal customer. Therefore, the subscription model should be considered regardless of the size of the business, and the author justifies this with eight points:

- They can increase a company's value: by providing a secure and future revenue stream through subscriptions, investors will give the company a higher valuation due to the reduced investment risk;
- Extends customer longevity: creates a longer relationship with the benefit of recurring revenue from that relationship;
- Enables smoothing of demand: One of the great challenges in business is estimating demand. Accumulating inventory can create logistical and capital challenges, especially if the inventory is perishable. Underestimating supply needs can lead to service bottlenecks, labour shortages, and reduced customer satisfaction. With subscriptions, it is possible to get an estimate of the number of customers shortly, allowing the correct allocation of workers and raw materials, leading to lower costs through optimisation;
- By creating a subscription model, it creates direct access to customers and allows them to check their needs in real-time. To test new products with subscribed customers and collect information on their acceptance, leading to product improvement;
- Subscription customers typically pay by credit card. This gives the company a guarantee of automatic payment at the beginning of each renewal cycle. This is in

contrast to the common practice of providing the service or product first and then receiving payment. With subscriptions, it is possible to receive payment first and then provide the product or service;

- The convenience of a subscription gives the customer access to a continuous, automatic service. The automatic renewal feature simplifies customer retention as it eliminates the need for customers to take repeated action to access the product or service;
- Through direct engagement with the customer, it gains a stronger ability to understand their requirements and, if needed, proposes an enhanced level of service. By capitalising on the preexisting customer platform, one can enhance sales, satisfaction, and loyalty;
- By creating a stable source of revenue, it is possible to protect the business from external circumstances, such as a recession.

Warrillow (2015) mentions in his book *The Automatic Customer - Creating a Subscription Business in Any Industry* that there are nine subscription business models. These models are presented below, with more detail on the most relevant to the objectives of this work.

"The Membership Website Model", in this model, the customer must subscribe to the site to access the hidden content that is blocked by a paywall. It is based on the assumption that a customer must pay to access good information, and as such, numerous organisations like the Financial Times or the Wall Street Journal, along with hundreds of other information websites/newspapers, block their content and make it exclusive to payers. This model is suitable for niche markets where access to constantly updated knowledge or information is valued. The most profitable types of membership in this model are business-to-business, where real problems need to be solved. The information behind these sites is essential and dependable, leading to the maintenance of this type of customer over time (Warrillow, 2015).

"The All-You-Can-Eat Library Model", in which unlimited access is given to a library of content. Consumers can access all available information/content, and there will always be appealing content due to its vastness. As a result, the service provider must accumulate a significant quantity of content, encompassing a wide diversity, while the consumer gets access to this content by renting. This model is most suitable for large audiovisual companies or venture-backed start-ups due to the requirement of a comprehensive library before the initial consumer subscription. Examples of such companies include Netflix and Spotify. Furthermore, the introduction of new additions

to the libraries is necessary to maintain consumer subscriptions. To ensure a lack of bias towards any specific content, consumers must subscribe to the entire catalogue in this model (Warrillow, 2015).

"The Private Club Model" gives access to something exclusive. It is intricately linked to sports and finance clubs. Some companies also participate in this model. It is based on exclusivity and aims to create a network of contacts. Privacy makes this type of model desirable. It can be seen as social status (Warrillow, 2015).

"The Front-of-the-Line Model" is a business model widely used in the airline industry. This business model offers priority access to a specific customer group for pre-paid services, enhancing the exclusivity of the experience. It is about paying to reduce the wait. To pay at airports when booking a ticket, or by credit card, to skip the check-in queues and acquire access to premium lounges. Within the same end goal, prioritises certain customers, so customers are treated differently. Despite the appearance of inequity, the system maintains transparency by ensuring that customers who have paid for priority or privileged treatment receive prompt service, avoiding any unexplained disparities in treatment. For this reason, some companies offer this model of paying to prioritise certain customers through a subscription that allows for this special attention. This type of model not only gives customers greater peace of mind, knowing that if they have a problem or have to wait, their matter will also be handled as quickly as possible. On the other hand, it creates an added revenue stream for the company that already has to provide the service or supply the product. It is a more complex product and needs to reach customers who are not so price-sensitive. This model has the advantage of being able to be integrated with other subscriptions to maximise revenue. It is crucial to provide a high-quality fundamental service, even to non-premium customers, as this is the sole means of converting them into a revenue-generating customer base (Warrillow, 2015).

"The Consumables Model" is a business model that is very much based on e-commerce and manages the regular replacement of consumer goods. A notable example is Dollar Shave Club, which sends razors to customers' homes regularly through a subscription. It is based on a product that regularly runs out and is inconvenient for the customer to replace it. Companies in this sector need to invest in a strong brand to compete with other major competitors and to ensure a robust and regular supply chain (Warrillow, 2015).

"The Surprise Box Model" is a model remarkably like the one described above. Instead of the customer selecting specific products, the company curates the basket of supplies sent, allowing the customer to discover new products and providing information about which products work best for the customer (Warrillow, 2015).

"The Simplifier Model" helps customers manage the various choices and tasks they face today. As such, it aims to simplify tasks and regularly remind customers of tasks they need to complete. As such, these companies can take external services and integrate them into their product by simplifying them or create their services in-house to solve customer problems. It should be a type of service that customers need regularly, such as pet grooming, cleaning, and home maintenance services or summarising all emails at a time (Warrillow, 2015).

"The Network Model" is a business model in which it is essential to increase the number of subscriptions to make the product attractive. For example, paid messaging services such as WhatsApp have historically relied on a larger platform of paying users to grow and attract new customers. In this model, competitors need to be disruptive and offer hugely different products to migrate or attract customers. It is necessary to attract enthusiasts to grow the network at an early stage. It is a model in which, once the customer base is solid, it is extremely difficult to be affected by the competition (Warrillow, 2015).

"The Peace-of-Mind Model" is a model that focuses on offering customers insurance against unforeseen events, hoping they will never need it. Typically, the money received from these subscriptions is invested either in the company itself or in the financial market to generate a return if a customer needs to use the insurance/subscription. The customer is sold a solution to the fear of total loss of an expensive asset. This is an extremely difficult model to implement because it requires calculating the probability that the company will have to pay for not making a loss. Sometimes it is necessary to minimise the risk by setting limits (Warrillow, 2015).

However, four critical pillars that must be met cut across these types of models, according to Reunanen (2020):

- Companies should favour long-term relationships because they are not doing a one-time transaction;

- Pricing based on the value proposition; pricing should be dynamic, considering the value that the service provides to the customer, rather than a fixed-price model that only considers costs;
- Consumption-based services, instead of focusing on a product, the focus should be on an efficient customer-based service;
- Figures and reports, the company should focus on future forecasts and past financial figures should not serve as the sole criterion for choice.

The same author, Reunanen (2020), cites nine other essential parameters for dissecting the success of a subscription business model:

- Price - In the subscription model, it is essential to understand that price is an essential component of how customers are acquired and is deeply intertwined with the revenue stream. Price affects an essential metric in measuring the performance of this model, the churn. Churn is defined as a customer account that has had no activity in the last 4 quarters, having had activity in the quarter before those quarters (Zuora, 2023). Getting a price for the subscription service is complex. There are numerous strategies to achieve it, including different periods, free trials, and *freemium* models to attract customers; one way to reach a price is through iteration, since in these models is possible to obtain data and user experiences (Reunanen, 2020; Zuora, 2014);
- Customer acquisition - signing up for a subscription should be as simple as possible, favouring multiple channels, from online to mobile or via a sales representative. A subscription process is inherently more complex; different prices, subscription periods, and subscription levels need to be considered. Therefore, a simple and fast process, as automated as possible, is essential to keep the customer in the product, integrating different sales channels (Reunanen, 2020);
- Billing - In the subscription model, customer billing is inherently more complex, moving from a one-time purchase process to recurring billing. Furthermore, it is worth noting that new customers and existing customers are subject to different billing methods, with variations in billing cycles and subscription tiers (Reunanen, 2020);
- Payment methods – requires a system that is both convenient and straightforward for customers. It needs to automate the system as much as possible to maximise collections and quickly correct inaccuracies (Reunanen, 2020; Zuora, 2014);

- Relationship with the customer - It is necessary to build deep bonds with customers. This can increase revenue from each customer, as well as listening to the customer's needs and improving service accordingly. As seen in Figure 2.7, the customer is at the centre of the model, interactions with the customer can enable subscription renewals, subscription extras, tier changes, suspensions, or cancellations. The customer must be able to manage their subscription intuitively and quickly (Reunanen, 2020; Zuora, 2014);
- Accounting - it is necessary to consider the complexity of the billing system and the changing needs of the customer. Therefore, an efficient billing system is required (Reunanen, 2020);
- Data and performance parameters - the efficiency and accuracy of decisions directly correlate with the quality of service. It is necessary to have various indicators that emanate from the data collected from the client. These indicators make it possible to better understand the customer's needs and keep the accounts balanced (Reunanen, 2020);
- Iteration and dynamic price response - there are numerous pricing hypotheses for a service, initially a simple pricing scheme is more favourable, but as data is collected on customer behaviour, this pricing system must be dynamic and flexible enough to keep up with customer needs and accompany the company's strategy toward those same customers (Reunanen, 2020);
- Scale - it is necessary to ensure that systems are resilient and scalable to keep pace with new customer needs and an increasing number of customers (Reunanen, 2020).

## **2.6 Airline Revenue Management**

One of the major problems in transportation is the existence of a fixed capacity that cannot be reduced or increased and must be sold within a limited time horizon. Since there will always be a fixed number of seats available, it is crucial to maximise the number of passengers accommodated. Once the trip happens, seats cannot be sold; they are not commodities that accumulate.

The transportation market can be characterised by consumers willing to pay different prices for the same product, the trip. Therefore, it is possible to use product differentiation to attract different customer segments. Although the product is the same, distinct levels of service can match the price sensitivity of the consumer. It is therefore necessary to decide about price and how the product is presented to different customer segments. This type of decision is called revenue management (Pak & Piersma, 2002)

Revenue management can be defined as the aim of maximising the profit generated with a limited product capacity over a finite time horizon (Pak & Piersma, 2002). There are two types of practice for maximising revenue (Belobaba et al., 2009):

- Differential pricing: different product categories are marketed at different prices, with different characteristics, for the same trip;
- Yield Management forecasts the number of seats to be allocated to each product category;

There are several strategies for obtaining a price for an origin-destination pair. The following principles are described:

- Cost-based pricing - Based on the microeconomic theory of "marginal cost pricing", this is the practice of setting the price based on the incremental cost of producing an additional unit of the same product. An airline's cost of operating a particular flight is assumed to be fixed. Operating costs, including aircraft depreciation, labour, and fuel costs, are assumed to be independent of the number of passengers carried. As a result, each additional passenger carried means a small increase in costs, so airlines can not cover all their operating costs with this pricing scheme. There is an alternative to this pricing, "average cost pricing", where the price is set based on the average operating costs per flight and available seat kilometre (ASK). This pricing system ignores the specificities of a market and imposes very favourable prices on niche markets at the expense of markets that allow greater economies of scale (Belobaba et al., 2009; The Editors of Encyclopaedia Britannica, n.d.);
- Demand-based pricing - This principle is based on willingness to pay and uses the price demand curve for each origin-destination pair. Thus, airlines charge different prices to different consumers based on each consumer's price sensitivity. This model does not consider the cost of different passenger experiences, i.e., the service does not discriminate between passengers. Only price sensitivity, demand elasticity, and willingness to pay are considered. This practice is called "price discrimination" (Belobaba et al., 2009);
- Service-based pricing - this principle takes advantage of differences in service quality so that each passenger has a very different unit cost. For example, the basis for the price is based on whether the passenger is travelling first class or economy (Belobaba et al., 2009).

The price of a particular ticket or trip cannot be based solely on a company's internal factors. It is necessary to assess the other competing forces in the market and the percentage of the market that is covered (Gillis, 2018). Currently, most systems cannot fully capture the effect of competition on pricing; they do so implicitly, i.e., they only observe their interaction with the customer, considering the demand itself, and then assume that the competition maintains supply and demand levels relative to the previous year. As such, the use of historical data has been the norm for calculating the market-influenced price component (Fiig, 2020). This influence can be seen as one of the price-forming elements in Figure 2.8 Component *1a*.

It is also necessary to consider the segmentation that may occur in the market. Although the purpose of the product is the same, travelling, and the way it is presented, can influence the price. Therefore, it is necessary to identify the type of customers to reach and their willingness to pay a certain price range. By identifying them, the Revenue Management system must be as effective as possible in preventing, for example, customers willing to pay a higher fare from ending up buying a ticket with a lower fare (Gillis, 2018). This factor is presented at *1b* in Figure 2.8.

The problem of Yield Management, or, as Gillis (2018) and Pak & Piersma (2002) call it - seat inventory control - is the problem of allocating a finite number of seats. Price differentiation alone is not enough to maximise revenue. For example, economy and business class passengers prefer to travel at the same peak times, competing for the same seats on the same flights, so without methods to control the number of passengers in economy class (booking limits) these travellers may take seats away from business passengers, and this can be further highlighted because economy passengers buy tickets further in advance. So, a good system should protect some of those seats for business-class travellers willing to pay a higher fare. Airlines have a final opportunity to optimise revenue from a flight, given that aircraft purchases are made years in advance and schedules are planned months ahead. There is also a balance to be struck between the possibility of a smaller load factor with more business passengers, or the opposite situation (Belobaba et al., 2009).

According to Gillis (2018), for these systems to keep up with the number of seats they need to allocate, they need to consider:

- Demand using models that allow them to predict future demand, so they can, for example, close the reservations for the cheapest seats when demand increases;
- As the booking window closes, certain lower-cost seats or classes will not be sold;

- Use hybrid strategies, decipher trends, and adjust the class of tickets sold accordingly.

The problem described above deals with inventory control, as seen in segment 2 of Figure 2.8. By implementing the three strategies listed, it is possible to manage the inventory of seats, which is one way of arriving at the ticket price.

It should be noted that these Yield Management and Revenue Management systems differ between Full-Service and Low-Cost Carriers, as the latter do not segment passengers by class (Gillis, 2018).

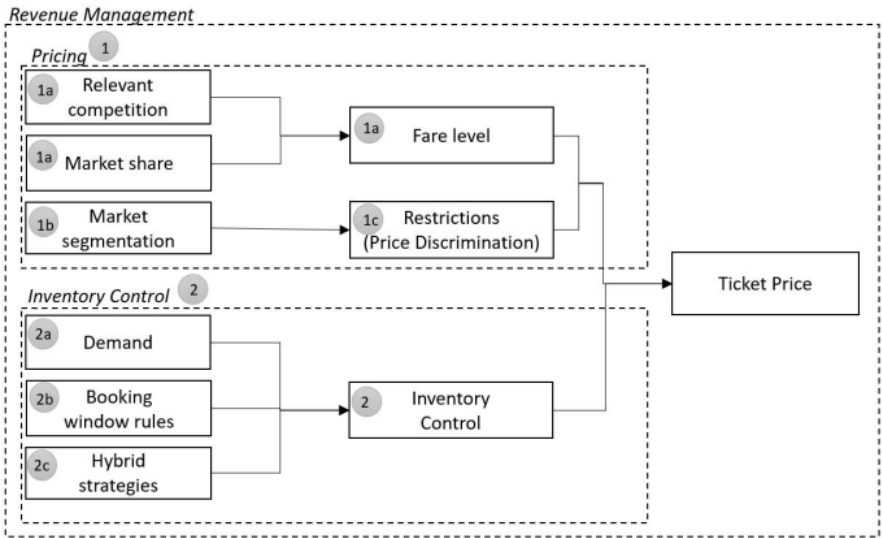


Figure 2.8 - Overview of revenue management and yield management, adapted from (Gillis, 2018)

While this is a competitive market and revenue management techniques are relatively well established, new management techniques have emerged in recent years that use artificial intelligence to predict passenger behaviour and maximise the revenue from each flight. The ability to analyse vast amounts of data in real time and deliver much more precise predictions enables real-time decision-making. These real-time decisions make it possible to move from a dynamic pricing paradigm, in which only certain times of day, days of the week and seasonal periods were considered, to a continuous pricing model, in which customer behaviour is analysed in real-time and market demand is analysed to adjust the price; factors such as time, click patterns on the booking site, the passenger's travel history can be included in the variables analysed (OAG, 2023). This can be seen in Figure 2.9, the evolution from fixed pricing, where the route has a fixed price due to current regulations, to dynamic pricing, where the price is set according to the characteristics of supply and demand, to today's system of continuous pricing.

Fiig (2020) argues that revenue management models have become more sophisticated in recent years. They make use of statistical models that can predict the customer's willingness to pay, maximising what the customer will pay for the ticket they want to buy. In addition, they can predict which class a customer might buy a journey in for the same itinerary. However, modern systems cannot predict the effect of competition on price formulation. While they can utilise historical data and estimates of direct demand, they cannot account for the potential market share they could acquire by monitoring real-time competition. The complexity of this system increases significantly, making implementation challenging. This is primarily due to the substantial amount of data that requires processing and the uncertainty surrounding the impact of price changes by other companies. Today, it is possible to make better forecasts using models that correlate with other airlines' prices, better estimate demand, or anticipate competitors' behaviour. This structure is included in the continuous pricing model shown below, in Figure 2.9.

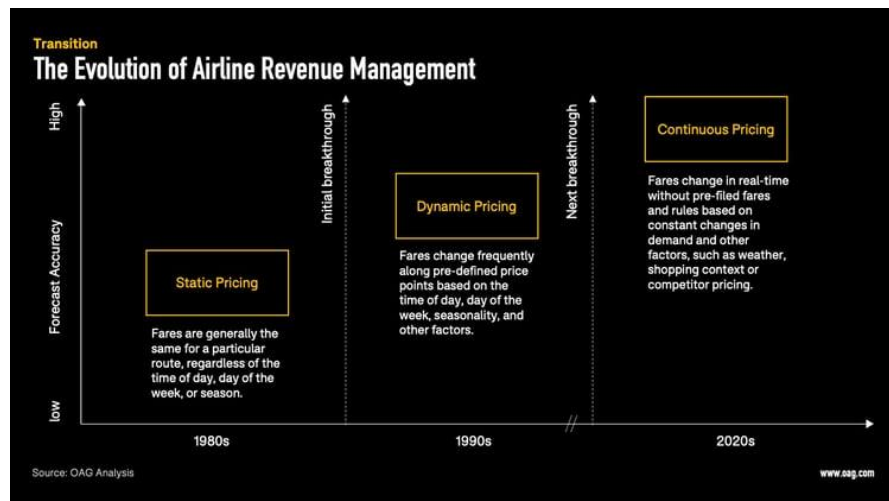


Figure 2.9 - Evolution of airline revenue management, adapted from (OAG, 2023)

However, there are new trends that should be explored in this work, including flight passes, which in their various commercial terminologies include pre-paid flight packages with exclusive advantages and unlimited flying. Indeed, OAG (2023) mentions the start-up Caravelo, which focuses on subscription solutions, as one of the new *tech players* providing revenue management services. This is, therefore, a promising trend to follow.

Gillis (2018) mentions precisely in his work, that he analyses ways of optimising the price of flight passes, and that flight passes, and forms of unlimited flying are part of the new forms of revenue and yield management. He also mentions frequent flyer programmes and corporate deals as precursors and similar products. The latter is seen from the

perspective of negotiating flight packages that companies make for their employees to travel with advantages and discounts, while sometimes they are negotiated individually.

### 2.6.1 Frequent Flyer Programme

The first frequent flyer programme (FFP) was introduced by American Airlines in 1981. Its success was decisive in spreading to other major companies in the United States shortly afterwards. However, in the rest of the world, its adoption was slower; this may have been due to tight regulation in other markets and also because of the costs, which were risky for some companies. This phase was then disrupted by the declining share of Pan Am and TWA on the North Atlantic route. American, United, and Delta took advantage of this and introduced frequent flyer programmes. Because of the forces of competition, European airlines quickly introduced their programmes, notably British Airways and Lufthansa. It then spread to the oriental airlines (Shaw, 2007).

A Frequent Flyer Programme is a form of loyalty programme that airlines offer to frequent flyers. To attract passengers, various airlines offer a system for awarding points that can be redeemed for other airline tickets or services. These points are awarded according to criteria defined by the airline, usually including the price and class of the flight or the distance of the flight. This programme rewards passengers who fly frequently and spend a significant amount of money to do so. Today, it is also common for these benefits to be tied to credit and debit cards, where spending is converted to points or miles. There may also be partnerships with hotels and car rental companies where points can be earned and exchanged between partners (Lee-Anant, 2022).

The main objective, apart from increasing repurchase intentions within the same company or group, is also to increase customer loyalty to the brand in question (Lee-Anant, 2022).

Shaw (2007) emphasises that a balance must be struck for FFP to be successful. These programs need to be competitive and attractive to customers and existing members, but they cannot be so attractive that airlines lose money. Customers need to feel that they are earning credits or miles quickly enough, so bonuses must be generous from the first flight, favouring business class and first-class travellers. Companies need to reach the broadest possible set of agreements. These agreements may include strategic alliances that allow passengers to earn miles for connecting flights to a particular hub operated by another airline. Partners outside of the airline industry, such as hotels and car rentals,

shopping stores, and credit card use, are part of these alliances to accelerate mileage accrual (Shaw, 2007).

These mileage-earning programs can be seen as a virtual money system, in which money from the real economy enters the airline's virtual money circuit in a one-way direction, i.e. real money is used to buy miles at a specific conversion rate, and this virtual money cannot be converted back into real money. Miles are a virtual currency that can be exchanged for specific goods and services. These programs have great economic value; in 2005, they were worth more than all the physical money in circulation, the monetary aggregate Mo (European Central Bank, 2012).

These programs are an integral part of an airline's business strategy and a powerful marketing tool. They can be used as a tool to manage customer demand (European Central Bank, 2012). FFP needs to be fully integrated into revenue management and yield management systems; as far as possible, customers should exchange miles for seats that would otherwise go empty, on flights with a lower load factor. A typical goal is that 95% of the time the programme is used, it should be for a seat that would otherwise be unoccupied (Shaw, 2007).

The advantages of these programmes, which vary from company to company, include the following (Gillis, 2018):

- Priority boarding, as well as priority check-in and baggage reclaim;
- Access to airport lounges;
- Additional hold luggage;
- Seat reservation, with a guaranteed seat in case of overbooking.

Gillis (2018) cites that customers in the higher executive segment are willing to pay up to 125 dollars more for a ticket that includes "elite frequent flyer account" benefits. The same author also cites that companies such as Air France-KLM, British Airways, and Lufthansa get 20-30% of their revenues from frequent flyer programmes.

### 2.6.2 Flight Pass

The term flight pass is a term with little expression in scientific production, with only one work standing out: "Optimising flight pass prices - A Kenya Airways case study" by Gillis (2018). However, a quick search on any search engine reveals the term on airline websites and various news sites, and it is a widely used commercial term. Most of the occurrences are recent.

Gillis (2018) defines a flight pass as the pre-purchase of a certain number of flights by a customer with a flat fee, i.e. the price of each journey is standardised for all flights and does not consider other factors such as the time or day, factors considered by modern revenue management systems. This price is, however, dependent on the class chosen and the number of flights, the period in which it can be used, so it is a highly customisable product. The same author diagrams it as follows, in Figure 2.10, the possible form of a flight pass.

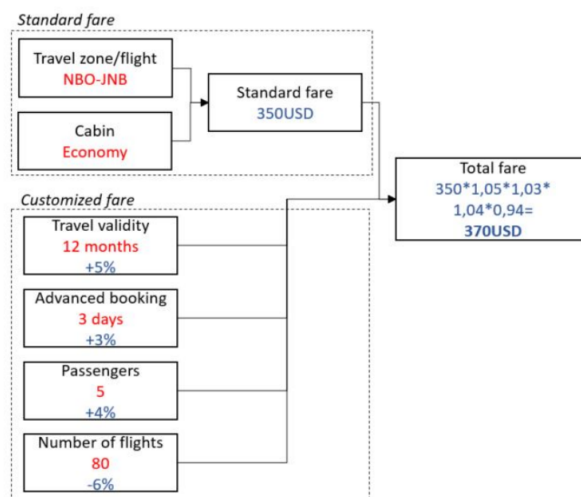


Figure 2.10 - Structure of the flight pass with the different options that influence the price, it can be additional or provide a discount according to the personalisation, adapted from (Gillis, 2018)

Figure 2.10 shows the main factors in flight pass pricing. The figures provided are merely examples. The chosen route and passenger class are predetermined. Once the base fare is determined, the price for this selection can be adjusted based on the number of flights requested; the greater the number of flights, the greater the potential discount. The flight pass can also be used by several passengers, and the image shows the maximum number of passengers who can book a flight using the same flight pass. Another factor is also how far in advance it is possible to book a seat. The penalty increases as the number of days in advance decreases. An extended duration of the pass will cause a rise in its cost.

The above is just one example of the pricing structure behind this new type of product. It is a recent practice, and the following companies can use this structure: British Airways, Air France, TAP, Air Asia, Azul, Air Canada, Qantas, and Kenya Airways (Dunn, 2020; Gillis, 2018).

Another perspective on the flight pass is widely used in the literature, particularly by Baldanza (2022); Carbonaro (2022); Dunn (2020); Hulme (2022); Lawler & Tara

(2023); Parsons (2023); Prieto (2023). These use the terminology of flight pass in what Gillis (2018) describes as "Netflix-style aviation". This is a different concept than the Flight Pass presented above. It is a subscription-based air travel model. Through a periodical subscription, customers can travel unlimitedly on a network under certain conditions.

American Airlines introduced a groundbreaking product in 1981 as a means of fundraising - a ticket offering unlimited first-class travel for \$250,000. The product was discontinued in 1994 after only 28 customers purchased it. In contrast to other businesses where customers face limitations on accessing available offerings, First Class customers were willing to travel further to fully utilise this product. For example, some customers took over 10.000 flights with this pass and others flew just to have lunch somewhere else and return on the same day (Asquith, 2019).

In the book *Subscribed*, Tzuo (2018) presents the concept of unlimited flight as an integral part of subscription business models. He presents the case of the airline Surf Air, which is presented as the Netflix or Uber of the skies. Besides the advantages of a model that favours the flexibility of passengers to book flights when they want and fly when they want, this concept also presents the niche of frequent flyers, estimated at 200 million passengers. This model is part of a platform that combines various means of transport. The same author believes that the entire travelling experience can be unified, including booking hotels and rent-a-car. The chief executive officer of Surf Air, as quoted in the same book, highlights consistent and predictable revenue as the primary advantage of this model in a fiercely competitive market that currently relies on low prices. It is then possible to realise whether a particular flight is going to be profitable before it even has to fly. Unlike the current model, which depends extremely on high load factors, it is possible to know the revenue at the beginning of each month.

The concept explained above can be categorised as mobility as a service.

### 2.6.3 Mobility-as-a-service

MAAS Aliance (2017), p.1, defines mobility as a service in the following terms " [...] constitutes the integration of various forms of transport services into a single mobility service accessible on demand". The main function is to create an ecosystem that can open and energise the market for the various players to create a user-centric ecosystem with a single interface.

The goal is to combine public and private transportation through a single platform that plans and manages the journey according to each customer's needs. Ideally, payment for these services is managed by the same platform. As such, the emergence of web-based and mobile systems is essential for the versatility and reach of these systems (Mola et al., 2020).

Mobility as a Service (MAAS) combines features of the sharing and subscription economy and is based on highly customisable services (Mola et al., 2020).

A MAAS system should include the following fundamental steps (MAAS Alliance, 2017):

- **Registration:** guaranteeing access for all individuals to the services covered;
- **Journey Planning:** It should display all available services and match the best possible transport arrangement to each user's needs according to a preference algorithm;
- **Booking:** the end user must choose the service they wish to use, the MAAS operator must manage all the documentation and arrange the booking with the transport operator, confirming the reservation and the existence of capacity;
- **Payment** can be divided into two schemes: pay-as-you-go or subscription. It must also bridge the gap between the service provider and the customer by handling the financial aspect of the transaction;
- **Journey:** the service must be delivered consistently, always informing the user of disruptions, and always providing customer support.

It is worth noting the work of Merkert & Beck (2020) which investigates the creation of an "air bus" service in regional aviation. The lack of literature that incorporates the air service into the Mobility as a Service framework gives rise to the need to study this area. Centred on the consumer, the air service can be integrated with public transport, offering various advantages. The authors therefore investigate the willingness to pay for such a service in New South Wales, Australia. They concluded that there is a strong willingness among consumers to see their airline ticket as part of a broader transportation service, i.e., the airline ticket could provide access to a series of transfers to city centres.

#### 2.6.4 Private Jet Card

A private jet card program, or just a jet card, is a subscription used by charter companies that operate private flights. It is a way to purchase a package of hours that can be used throughout the year and for all destinations covered by the charter company. It bears

similarities to the Flight Pass program and other forms of unrestricted flying. Typically, the companies that market this product do so by offering packages in multiples of 25 hours. They may also include partner benefits. It is a product aimed at companies or frequent travellers who travel a minimum of hours per year (Jettly, 2021; Private Jet Cards Comparisons, n.d.).

It is opposed to the older fractional ownership programmes in which the customer bought a fraction of the total number of hours an aircraft could fly per year. Typically, this program could extend over several years, often approximately 5 years. For example, by owning  $\frac{1}{4}$  of a fraction of a plane, it is possible to travel 200 hours if the plane flew an average of 800 hours. Typically, clients do not possess a portion of the aircraft itself. Instead, they own the flight hours associated with that aircraft. This arrangement allows them the flexibility to fly on the closest available aircraft, rather than being restricted to the one they own (Jettly, 2021).

The jet card compares favourably with fractional ownership and is cheaper. It is only necessary to pay for the flight hours plus some airport taxes, which can vary from programme to programme. Fractional ownership involves an initial investment and maintenance, catering, and fuel costs (Jettly, 2021).

## **2.7 Conclusion**

It is impossible to define the term business model unambiguously. It is used holistically in most of the literature and is usually associated with the strategy of a particular organisation. Therefore, in this work, and since it uses his framework for analysis, the definition of the Business Model is set by Osterwalder (2004). This basis will be the foundation for developing the following chapters. A detailed study of current and future business models can be conducted using the building blocks of the Business Model Canvas. The focus on revenue creation is essential for understanding the relationships between the various building blocks, both those that make up the organisational part and the technological component and, finally, the strategy segment. These three components, despite being detached from the concept of the Business Model, both influence and are influenced by it. Understanding these relationships makes it possible to understand the available infrastructure, the communication channels with customers, the product, and the financial aspects.

Next, the business models in the airline industry are presented with the most common terminologies in the literature. Although not all authors agree on classification,

systematisation, and analysis, the concepts of full-service airlines and low-cost airlines emerge. These can be contained within a spectrum in which certain characteristics bring them closer. This work attempts to use the perspective of this spectrum. Finally, the hybrid models contained within this spectrum and the regional and charter airline models were also mentioned. The latter can include private executive airlines, which will also be analysed in the following chapters.

Subscription business models, which reflect the new prospects for the aviation sector, were also examined. The main forms of these models were presented and described, along with their advantages and disadvantages, to apply this knowledge to the examination of new products in revenue management, especially those related to aviation, such as flight passes and subscriptions.

Finally, the concepts of revenue management were presented to understand the logic of maximising revenue when selling seats on a trip. Past paradigms were presented, as well as future ones. One option that stands out is the Flight Pass, in particular.

In brief, comprehending the subscription models employed in this research has become essential, both in the empirical investigation and in the case study conducted for the 2030 World Cup. In their various guises, subscription models can be new forms of revenue management for companies. This challenges the current paradigm of a single product purchase.

## Chapter 3

### Current Business Models and Flight Passes

#### 3.1 Introduction

This chapter aims to provide the empirical basis for analysing the 2030 World Cup case study. The information presented in this chapter provides a foundation for understanding the emergence of novel trends within the aviation industry, particularly regarding the development of subscription-based products. Therefore, it will be used the Business Model Canvas analysis tools that will serve as the basis for the case study to understand the market trends that lead to subscription models. The objective is to achieve this by selecting a number of companies, initially analysing their business model and then utilising a canvas-inspired tool to analyse the flight pass, which can assume different forms contingent on the company in question.

#### 3.2 Methodology

To understand business models in aviation, it is necessary to follow a method that allows us to analyse all the cases studied consistently. For this reason, the method used and explained by Osterwalder & Pigneur (2010) will be used. This form of analysis, the Business Model Canvas, is dissected in Chapter 2.

This concept of work was used by Kalakou & Macário (2013) to study the different airport business models: by being able to capture both the operational component and the external environment of a business, it was possible to apply it to a certain set of airports - categorised by traffic. Based on the Business Model Canvas, the authors propose a new working tool that attempts to cover niche markets, namely low-cost and cargo airports, by incorporating new factors into the model under study.

The paper by Fichert et al. (2020) examines Business Models in business aviation through an empirical study of charter airlines. Using cluster analysis in conjunction with the concept of Canvas, it is possible to identify groups of companies. Several charter companies answered a survey framed by each of the building blocks, using the Canvas method for its design.

In Sengur & Sengur (2017) the Canvas blocks are used to analyse how airlines define their business, i.e. through inductive research on the companies' websites, it was possible to clarify the companies' statements in the context of the Canvas.

Reis & Silva (2016) use the Business Model Canvas framework to characterise the business models of cargo airlines; as such, they use it twice, in the first phase, to identify the key variables of the air transport market. Subsequently, in the second phase of using the Canvas, a survey was organised with the 9 components of the Canvas to obtain the information that would be aggregated using an inductive approach.

Finally, the work of Urban et al. (2018) which questions the convergence of airline business models, explores whether it is possible to create clusters of different companies rather than the spectrum between full-service and low-cost companies. Considering this, to determine the factors facilitating the identification of patterns for cluster analysis, a set of 42 indicators was utilised under the Canvas building blocks.

In this work, to identify the evolution of business models and the rise of a new market segment, the Business Model Canvas is used with a restricted group of companies. Different companies were chosen from the full-service to low-cost spectrum, identifying those that currently have a flight pass. Table 3.1 showcases the selected airlines for the analysis.

Table 3.1 - Selected airlines

<b>Airline</b>	<b>Category</b>	<b>Flight Pass</b>
<b>Alaska Airlines</b>	FSC	Yes
<b>Frontier Airlines</b>	LCC	Yes
<b>Air Canada</b>	FSC	Yes
<b>TAP</b>	FSC	Yes
<b>Ryanair</b>	LCC	No

As a result, and as demonstrated by the aforementioned examples of work, it is necessary to acquire information that defines the selected airlines to analyse their business models.

To maintain homogeneity in the analysis, allow comparisons, and ensure that the data collected follows the same method, it is necessary to acquire metrics or information that can be fed into the Canvas blocks. For this reason, the work of Urban et al. (2018), Fichert

et al. (2020) and Sengur & Sengur (2017) will be used as a model to create a set of parameters for the business model canvas. Besides these references, it is important to focus on the comprehensive depiction of each block in the Business Model Canvas, as described by Osterwalder & Pigneur (2010). To clarify, when employing the Business Model Canvas in the commercial aviation sector, it becomes workable to assess certain parameters across multiple companies. For example, within the Key Resources category, one can analyse the fleet, considering factors like capacity or the average age of the aircraft. Nevertheless, there are certain areas where metrics are absent and one must rely on companies' statements to determine their placement, ensuring that criteria are upheld to enable comparisons among companies.

Thus, the following analysis framework emerges:

1. Customer Segments
  - Target Groups
2. Value Proposition
  - Connectivity
    - i. Number of connected countries
    - ii. Number of destinations
  - Service
    - i. Included services
    - ii. Crew members onboard
    - iii. Class differentiation
  - Fares
  - Safety
  - Service innovation
  - Service/operational quality and commitment
3. Channels
  - Distribution
    - i. Sales Channels
  - Awareness
    - i. Marketing
  - After Sales
    - i. Post-purchase experience
4. Customer Relationship
  - Long-term relationship
    - i. Loyalty programmes

- ii. Automated Services
    - Customer Satisfaction
      - i. Customer reviews
- 5. Revenue Streams
  - Revenue per Available Seat per km (RASK)
  - Fares
  - Cost Control
  - Revenue Management System
  - Yield Management
- 6. Key Resources
  - Aircraft
    - i. Fleet Diversity
    - ii. Age of Fleet
    - iii. Cabin configuration
  - Airports
    - i. Type of Airports
    - ii. Hub
    - iii. Hub Operating Hours
  - Human Resources
    - i. Number of passengers per employee
    - ii. Number of Pilots
- 7. Key Activities
  - Operations
    - i. Average flight range per aircraft
    - ii. Frequency
    - iii. Average flight hours per day
  - Network
    - i. Network System
    - ii. Geographical operation
    - iii. Connection
  - Core Business
  - Technical Services
    - i. Maintenance
    - ii. Ground Handling
    - iii. Aircraft Completion
  - Provide other sales or financial/administrative services

## 8. Key Partnerships

- Co-operation
  - i. Forms of cooperation (Codeshare; joint venture; Alliances)
  - ii. IT and goods providers
  - iii. Conglomerate Structure
  - iv. Regulatory Authorities
- Competitive Situation
  - i. Number of airports where aircraft are based
  - ii. Most important airports
  - iii. Number of countries where aircraft are based

## 9. Cost structure

- Operating Costs
  - i. Total operating costs per available seat per km
  - ii. Total operating costs per passenger
  - iii. Cost level of employees
  - iv. Aircraft
- Financial Costs

The necessary data for completing the Canvas can be sourced from airline websites, statistics aggregator websites, account reports, or other appropriate websites that are referenced correctly at the time of utilisation. The mentioned aspects and criteria will be filled according to statistical data; if it is not possible to obtain concrete data, the inductive method will be used, as recommended by Sengur & Sengur (2017) in their study in which they analysed the statements made by airlines on their websites, allowing them to characterise the Business Model.

The information gathered should be systematised in the Business Model Canvas following the principles described in Chapter 2.

Subsequently, the Flight Pass of each of the companies should be analysed.

The Flight Pass is a product with unique characteristics and depends on the company in question, which is why the heterogeneity of the product and its contemporaneity must be considered. Using the Business Model Canvas to identify the characteristics of the Flight Pass in each of the companies, treating it as an isolated case, would be unprecedented in the literature and might distort the functionalities of the Business Model Canvas, which makes it possible to identify and visualise all the elements of a business and capture their relationships. Given the existence of external relationships,

that method of characterising Flight Pass is invalid. Therefore, it is essential to develop an entire business model from scratch around Flight Pass.

This business model will be created using Canvas as a tool and applied to a case study in the next chapter.

Mason & Morrison (2008) suggest using the concept of Product and Organisational Architecture (POA) in the context of air transportation to compare the different low-cost business models, as this allows standardisation of criteria to determine metrics that can be compared between companies. In this work, Mason & Morrison (2008) create benchmark variables that enable them to effectively compare the different business models by using this comparison strategy. The notable aspect of this approach is the separation between the product and the environment. In the work of Osterwalder (2004), there is also a strong product component, but it is integrated from the perspective of interaction with the other business variables that comprise the external environment to the chain of processes that generate revenue.

The organisational part is not essential when comparing products and may be subject to the nuances of the business of each of the selected airlines, making it a problematic comparison. It is therefore necessary to create a tool that captures the key points of each flight pass and allows them to be compared. It is, therefore, proposed to use the POA philosophy, applied only to the product. To clarify, an analysis of the Product Architecture is necessary. This is shown in Figure 3.1, a general POA diagram.

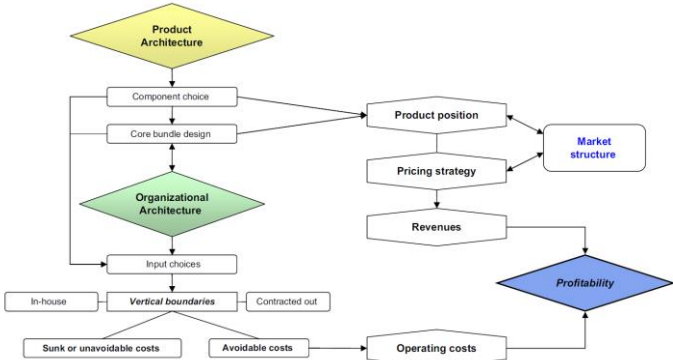


Figure 3.1 - General POA of an organisation, adapted from (Mason & Morrison, 2008)

Despite the organisation shown in Figure 3.1, it is expected only to capture the value of the Product Architecture, in this case, and the relationships that are essential to the organisation's overall business. Therefore, the part of the organisational architecture that directly affects the product must be captured. In addition, it is necessary to consider

the financial aspect, which affects both the product itself and the organisational part. Therefore, from Figure 3.1, the "component choice" will have all its parameters taken from the Business Model Canvas to capture and compare with the Business Canvas, which will then make it easier to create a business focused solely on the Flight Pass.

Conversely, it is imperative to give careful consideration to the Product Canvas method. This term has been used in the literature, mainly by Pichler (2012). According to the author's article, the Product Canvas is a tool that is derived from and complements the Business Model Canvas and is designed to facilitate the development of new products. Once again, the goal is to capture the product's objectives and establish the relationships between the various blocks, focusing on the feed that each block can provide to the others, always to generate revenue.

The concept of the Canvas, as a visual tool that allows the analysis of interactions between the various basic aspects of a business, has been exported to other areas to stimulate innovation and understand all the steps and interactions needed to generate revenue by appealing to consumer needs. In the work of Fruhwirth et al. (2020) based on the idea of the Business Model Canvas, a tool is developed, the Data Product Canvas, to connect the different data sources with the user needs. This model allowed the creation of a process that, according to the authors, favours innovation.

The Canvas concept can also apply to innovation. The work of Kline et al. (2013) captures possible issues related to technical, market, resource, and execution aspects associated with innovation. It is a multi-perspective analysis that allows all the above values to be examined and connected, creating a canvas that highlights these aspects and makes product development an iterative and multi-disciplinary process.

Another perspective that complements the product and business model canvas is the value proposition canvas. A tool developed by Osterwalder et al. (2014) where the goal is to create a product in a new or existing organisation. It focuses on the value proposition and the customer. A fundamental aspect of this philosophy involves comprehending the process of value creation for the customer, which causes an understanding of the benefits to be created and the constraints the customer may encounter. First, it is necessary to understand the added value of the product by measuring the value proposition itself; the benefits created by that proposition, and the benefits that can fulfil customers' needs or alleviate their problems. On the other hand, it is necessary to understand the customer segment, so it is essential to study the results that the customer wants to achieve and those that offer concrete benefits. However, it is also necessary to study the possible bad

results resulting from the risks and obstacles that the customer may face. Finally, it is necessary to understand what customers are seeking. Once a consensus is reached between the Value Proposition and the customer, the product can be obtained. Figure 3.2 shows the framework of the Value Proposition Canvas and its visual form integrated with the Business Model Canvas.

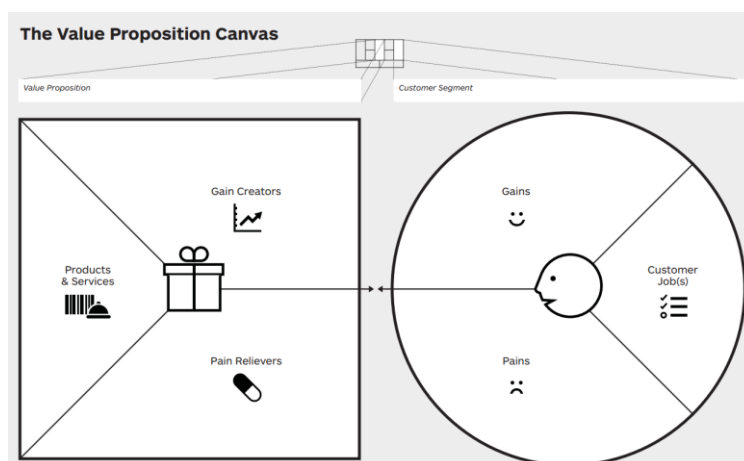


Figure 3.2 - Value Proposition Canvas to the Value Proposition and Customer Segments perspective in the Business Model Canvas, adapted from (Osterwalder et al., 2014)

An example of using the Value Proposition Canvas can be found in the Meng et al. (2020) paper, where the goal is to evaluate shared mobility modalities to align government policies and multimodal mobility platforms.

After conducting a comprehensive analysis of various product development tools, including the Canvas model in its various iterations, as well as product architecture, our objective is to develop a tool that is in line with the designated business model and enables efficient examination of Flight Passes. Consistent criteria should be used for comparisons. Thus, for a global method, used model proposed by Schuh et al. (2018) of four steps to create a product. However, only the first three steps will be used in this work, as the last step involves iteration and process improvement, and is unnecessary because the product has already been developed. The proposed methodological scheme is shown in Figure 3.3.

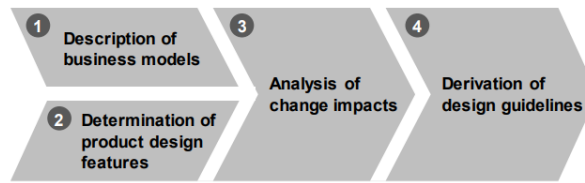


Figure 3.3 - Four-stage method for product design, adapted from (Schuh et al., 2018)

Again, Figure 3.1 refers to the architecture of an organisational structure and its interaction with the product architecture. Therefore, the aim of this work is to separate the organisational part from the product part, focusing almost exclusively on the product to allow specific product analysis for the different airline business models. By utilising this approach, it becomes feasible to mitigate the influence of a low-cost organisational framework in contrast to a full-service structure, thus enabling a meaningful comparison of the Flight Pass across different airlines.

It is known that Osterwalder (2004) defines a product as all aspects of what an organisation offers to its customers or customer segments. Thus, he describes the product as the interaction between Capability, part of a company's organisational capacity, and Target Customer, part of the Customer Interface. These interactions can be visualised in Figure 3.4.

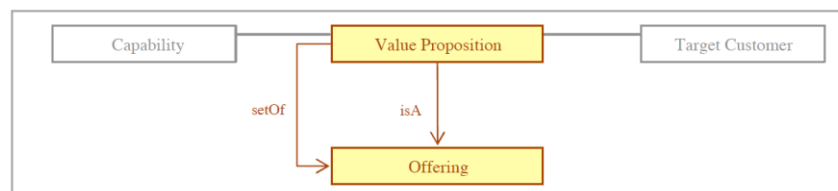


Figure 3.4 - Product definition according to Osterwalder (2004), adapted from (Osterwalder, 2004)

This perspective is consistent with the POA explained above. The product refers to the organisational component of the business. Here, Capability represents the ability to perform a set of procedures in a way that creates value for the customer.

Therefore, to examine Flight Pass, it is essential to understand the set of processes inherent in the business model that enable the creation of a value proposition. It is important to mention that our objective is not to develop a product, therefore relying solely on the Value Proposition Canvas would be impractical. This approach would disregard the comprehensive external framework already established, encompassing aspects ranging from distribution channels to customer relations that are integrated into the Business Model Canvas.

Besides the organisational, customer interaction and value proposition aspects, it is necessary to add the revenue generation logic associated with the Business Model which, according to Osterwalder (2004), must comprehend the relationships between its elements to generate revenue. Therefore, it is necessary to focus on how the product should generate revenue and what the associated costs are. Dissecting costs and revenues exclusively from the existing Flight Pass are an impossible process within the scope of this work. First, it should be noted that there is no such granularity in the companies' financial reports, making it difficult to determine the number of passengers using the program, the amount of revenue generated, and the importance of the program in capturing certain customer segments. Second, the general POA model presented introduces the concept of pricing strategy. Using the concept of strategy presented by Osterwalder (2004), it is possible to analyse the price, and thus the costs and revenues, within the framework of the Value Proposition, looking at the internal advantages and disadvantages that this price aims to achieve. Additionally, pricing strategy positions products and companies in the market, aligning with product vision.

Therefore, it is suggested that the study's method should comprise the Product Canvas shown in Table 3.2 below. This arises from the combination of POA philosophies by Mason & Morrison (2008) and Product, by Osterwalder (2004). The value proposition canvas is also captured to understand the benefits to the customer and the organisation. Elements common to the Business Model Canvas are used, particularly in the building blocks, allowing for future application to the case study. In this way, an in-depth analysis is achieved that provides a glimpse into the organisational part of the Business Model Canvas.

Table 3.2 - Product Canvas suggested for the analysis of the Flight Pass

Business Organisation	Product Architecture		
Key Activities	Value Proposition	Customer Interface	
		Channels	Customer Segments
		Customer Relationship	
Pricing Strategy			

The following blocks of the designed canvas should be analysed: Key Activities; Value Proposition; Channels; Customer Relationship; Customer Segments; and Pricing Strategy. Then, using the method shown in Figure 3.3, the Value Proposition Canvas is used to understand the impact this product has on customer needs.

### **3.3 Case 1 - Alaska Airlines**

#### **3.3.1 Characterisation**

Alaska Airlines is a North American airline based in SeaTac, Seattle, Washington state. It operates together with regional partners Horizon Air and SkyWest Airlines, with a network focused on connecting the cities of the American West Coast and over 100 destinations in the continental United States, as far as Canada, Costa Rica, Guatemala, and Mexico. It is part of the Oneworld Alliance (Wikipedia contributors, 2023b).

#### **3.3.2 Business Model Canvas**

##### **3.3.2.1 Customer Segment**

The airline covers all customer segments but offers different value propositions to each segment it reaches.

In the 2022 Annual Financial Report, they reinforce this comprehensiveness with: "In 2022, recovery of leisure demand continued to outpace recovery of business demand. Responding to these trends, we adapted our network to take our guests where they want to fly" (Alaska Air Group, 2023, p.4).

According to the website, they accommodate passengers in the luxury segment with their First Class offering, which includes generous seating, two checked bags, unlimited beverages, and a meal; Premium Class, in the general segment, for passengers who are willing to pay more, who are less price-sensitive customers than the Economy Class segment, they get seats with more legroom, free drinks on longer flights and priority access to boarding; The Economy Class segment, which is more comprehensive, does not have any ancillary services, except for the possibility of earning miles and unchecked baggage; finally, it is aimed at very price-sensitive customers who want to travel with no benefits (Alaska Airlines, 2023a).

It can therefore be concluded that they appeal to all customer segments, focusing particularly on the luxury, business, and leisure segments, covering the different price sensitivities.

### 3.3.2.2 Value Proposition

The company serves 115 destinations with nearly 1.200 daily flights. This includes the parent company and its regional affiliates. Alaska Airlines flies within the United States and to three other countries (Alaska Airlines, 2023a). Figure 3.5 shows the route network of Alaska Airlines, which mainly operates domestic flights, mostly on the West Coast, with frequent connections to the main East Coast destinations, as well as connecting the discontinuous North American territories.

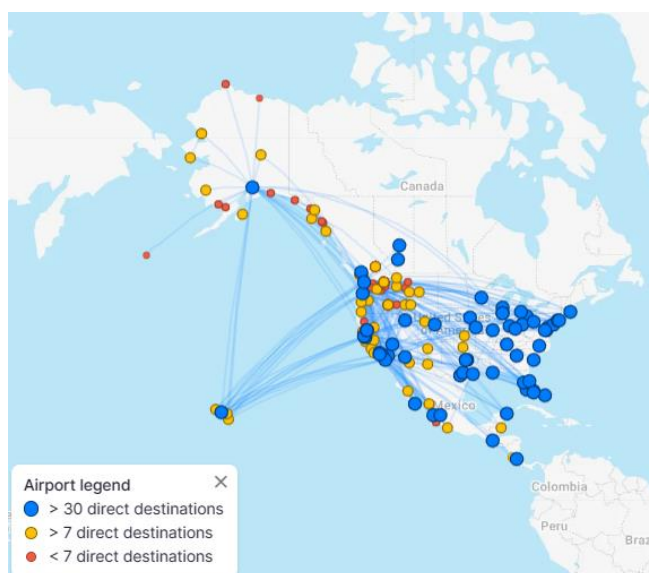


Figure 3.5 - Alaska Airlines' Network, adapted from (FlightConnections, 2023)

This system comprises six hubs and is supported by a regional company that supplies these hubs, besides offering point-to-point routes.

As already seen in the Customer Segments tab (3.3.2.1), the company has 4 classes to accommodate different price sensitivities. The highlights for the most luxurious segment include more legroom, personalised in-flight service, including food and beverages, and priority boarding and lounge access on long-haul flights. Down to the end of the price sensitivity spectrum, where they have their saver fare, which includes only one piece of unchecked baggage.

In terms of fares, Alaska Airlines positions itself in the market by offering "lower fares presenting a premium product" (Alaska Air Group, 2023, p.10). Another point that was mentioned both in Alaska Airlines (2023a) and Alaska Air Group (2023) is the FFP, known as the Alaska Airlines Mileage Plan, which awards miles based on distance flown and can be accumulated with partners, either on other airlines or through Alaska Airlines-branded credit card. Miles have no expiration date and can be used on partners or upgrades, as well as on airline or partner flights.

The company considers safety to be both a competitive advantage and a fundamental aspect of its value proposition. Highlighting the various distinctions from IATA in the IOSA report, or the group's FAA distinction for its dedication to training maintenance technicians (Alaska Air Group, 2023).

Alaska Airlines has a history of innovation that impacts the passenger experience, including being one of the first to sell tickets online, one of the first to offer online check-in, and one of the first to introduce self-check-in kiosks at airports (Cleverism, 2023). More recently, the company invested \$2,5 thousand million towards modernising the technology it offers passengers at the airport; the plan includes an automated check-in experience and baggage claim, to reduce the time it takes passengers to get from the lobby to the security checkpoint to 5 minutes or fewer. Another potential innovation underway through Alaska Star Ventures and Bagtag is electronic baggage tagging (Dawes, 2023). A significant advancement includes the capability of verifying passports via a mobile application, eliminating the need for manual verification (Alaska Airlines News, 2023).

Operational quality and sustainable initiatives, which can be an attractive point for various consumers, are another point that needs to be addressed. The first point, highlighted in the 2022 Financial Report, relates to increasing operational efficiency: the use of Required Navigational Performance (RNP), which allows a more direct and efficient route, leading to a reduction in fuel consumption and greenhouse gas emissions; using artificial intelligence, with the introduction of Flyways AI, which allows routes to be optimised, considering air traffic and more efficient routes in terms of fuel consumption. In addition, the commitment to the use of a modern fleet and efficient aircraft, improving safety and sustainability standards and increasing passenger comfort. Using Sustainable Aviation Fuel allows Alaska Airlines to meet its carbon neutrality goals (Alaska Air Group, 2023).

### 3.3.2.3 Channels

Ticket distribution is based on 3 main channels (Alaska Air Group, 2023):

- Direct to the customer - through the website, which is the most cost-effective channel. According to the company, this is one of the most important ways to interact with the customer and strengthen the brand position. From a customer relationship perspective, it allows for a direct approach and a more personalised experience. In this way, direct sales via the website are prioritised. In 2022, this segment accounted for 64 per cent of sales;
- Traditional and online travel agencies - use the Global Distribution System to obtain fares and inventory. This distribution system involves a higher number of fees that are passed on to the airline. Many corporate customers use these agencies to purchase Alaska Airlines tickets. Traditional agencies accounted for 18 per cent of sales in 2022 figures, while online agencies accounted for only 7 per cent;
- Reservation Call Centres - this is a form of direct sales through a human agent, but the customer is charged \$15 for the reservation. This segment accounts for 11% of sales.

With a focus on innovation, Alaska Airlines is embracing new trends in targeted advertising and personalised digital marketing for consumers. Here, they are combining this marketing with more powerful data analysis capabilities in the revenue management system. Working with Google, they can measure the number of interactions a particular route has on the Google Flights platform and combine that data to compare it with the number of impressions of an ad on that same route. This level of interaction allows the company to understand where to focus its marketing resources and whether it is using the right strategy across its network (Bickford, 2019).

### 3.3.2.4 Customer Relationship

To cultivate lasting relationships, airlines typically implement loyalty programs, specifically mileage programs. Alaska Airlines offers the Alaska Airlines Mileage Plan program. As already mentioned, this program awards miles to its members according to the distance travelled. They can also be accumulated and redeemed with partners using a credit card that the company collaborates with. The program follows a tiered structure, referred to as MVP status. Once it attained this milestone, it acquires extra privileges during regular journeys, including upgraded seating, complimentary checked baggage,

and priority boarding. Each level offers more and more benefits. The company operates under the brand of the Oneworld Alliance, which allows for more extensive benefits with partner airlines. It is reported that in 2022, 6,4 million award tickets were issued through the mileage program (Alaska Air Group, 2023).

Furthermore, it refers to the flight pass, a potential automated form of a long-term relationship. Through a flat fee, it is possible to offer the customer a service for a limited number of trips per year. This makes it possible to strengthen a long-term customer relationship (Cleverism, 2023).

Finally, it is important to mention the customer support channels, both online and by phone, as well as the importance given to the collection of passenger experiences on the company's website. Using newsletters to inform customers of promotions is mentioned (Cleverism, 2023). Alaska Airlines ranked highest in passenger experience and first in satisfaction in the ACSI Travel Study 2022-2023 (American Customer Satisfaction Index, 2023).

### 3.3.2.5 Revenue Streams

The main sources of operating income are 3 segments (Alaska Air Group, 2023):

- Passenger Revenue: Stimulated demand from leisure travellers in 2022 led to an increase in revenue per passenger. This was due to an increase in demand and an inability to increase supply, resulting in higher fares. In 2022, it represented \$8.809 million;
- Mileage Plan and Other Revenue: This type of revenue is based on commissions charged by partner credit cards, as well as increased spending by passengers. It represents \$590 million in 2022;
- Cargo and other revenue: The main source of growth in this item is ancillary, in line with the increase in demand. The increase in cargo transportation is possible due to the increase in the number of flights and the cargo capacity for each flight. In 2022, it represented 248 million dollars.

In order to enhance the readability of specific metrics, the following explanations are provided. They are of utmost usefulness for comparing airlines. As such, the following are presented:

- RPM/RPK: represents the number of miles or kilometres travelled by paying passengers by multiplying the number of paying passengers by the distance travelled (Kenton, 2022);
- ASM/ASK: represents the number of seat-available miles or kilometres by multiplying the number of miles an aircraft can fly by the number of seats available on that flight (Kagan, 2020);
- Load factor: This is the indicator that represents the percentage of available seats occupied by paying passengers and is the ratio of RPM to ASM (Alaska Air Group, 2023; Beers, 2022);
- RASM/RASK: is a measure of a company's efficiency in generating revenue per passenger. It is obtained by dividing the operating revenue by the ASM. The higher the ratio, the more profitable the company is. Operating income considers non-ticket revenues, such as ancillary revenues (Kenton, 2021);
- Yield: represents revenue per passenger per RPM, which is the average revenue from flying one passenger per mile or kilometre (Alaska Air Group, 2023).

Table 3.3 presents the main statistical results associated with Alaska Airlines' operating revenues.

Table 3.3 - Key revenue figures for the Alaska Airlines Group, data source: (Alaska Air Group, 2023)

<b>RPM</b>	51.330 million
<b>ASM</b>	607.730 million
<b>Load Factor</b>	84,5%
<b>RASM</b>	15,87 cent \$
<b>Yield</b>	17,16 cent \$

**3.3.2.6 Key Resources**

Table 3.4, below, shows the Group's fleet and its characteristics for the year 2022.

Table 3.4 - Aircraft fleet and their average age, on December 31, 2022, data source: (Alaska Air Group, 2023)

<b>Aircraft Type</b>	<b>Seats</b>	<b>Owned</b>	<b>Leased</b>	<b>Total</b>	<b>Average Age in Years</b>
<b>B737 Freighters</b>	-	3	-	3	21,9
<b>B737 Next Gen</b>	124-178	153	10	163	11,9
<b>B737-9</b>	178	27	10	37	0,8
<b>A320</b>	150	-	12	12	13,2
<b>A321neo</b>	190	-	10	10	4,7
<b>Q400</b>	76	10	1	11	12,9
<b>E175</b>	76	33	42	75	4,5
<b>Total</b>	-	226	85	311	8,8

The fleet is characterised by its modernity and relatively low average age, primarily comprising the B737, a narrow-body aircraft. It allows for a tight network, i.e. While it is capable of flying up to 6.500 kilometres, it retains a distinct regional identity that enables transcontinental routes. By positioning itself regionally, Alaska Airlines can strengthen its position as one of the largest airlines on the West Coast. Furthermore, it is worth noting that the regional subsidiary encompasses the Q400 and E175 aircraft. The company also intends to eliminate its fleet of Airbus aircraft, further reinforcing the characteristics of a single fleet with an increase in the number of B737s, forecasting an increase of 26 aircraft of this type by 2025 (Alaska Air Group, 2023).

Alaska Airlines has hubs in Seattle, Los Angeles, San Francisco, Anchorage, and Portland, serving the major airports in these locations (Alaska Airlines, 2023a). The main hubs and the average number of daily departures are shown in Table 3.5.

Table 3.5 - Average daily departures on Alaska Airlines, data source: (Alaska Airlines, 2023a)

<b>Major Market</b>	<b>Average Daily Departures</b>
<b>Seattle</b>	307
<b>Portland, Oregon</b>	127
<b>San Francisco Bay Area (that includes San Francisco, San Jose, and Oakland)</b>	133
<b>Los Angeles Area (that includes Los Angeles, Burbank, Ontario, and Orange County)</b>	111
<b>Anchorage, Alaska</b>	42
<b>San Diego</b>	48

As seen in Table 3.5, airports are one of the most important resources for the operation of the network, also being one of the Key Partners and integrating the value proposition.

Finally, in terms of human resources, Alaska Airlines had 2.469 active employees as of December 31, 2022, distributed among the various companies of the Group. Most employees are unionised and covered by collective bargaining agreements. The main groups of employees include pilots; flight attendants; ramp service and warehouse workers; clerical, office, and passenger service workers; mechanics, inspectors, and cleaners; dispatchers, etc. (Alaska Air Group, 2023).

**3.3.2.7 Key Activities**

Alaska Airlines' core business is passenger transportation. Its hub-and-spoke system comprises multiple hubs. The focus is on a single type of aircraft that offers short routes, ranging from regional to international (few, short-haul). Furthermore, it highlights the significance of coast-to-coast flights and activities centred on West Coast states. The main routes or regions served by Alaska Airlines are shown in Table 3.6.

Table 3.6 - Capacity by region, in percentage, data source: (Alaska Air Group, 2023)

<b>West Coast</b>	27%
<b>Transcontinental/mid-continental</b>	43%
<b>Hawaii</b>	13%
<b>Alaska</b>	11%
<b>Latin America</b>	6%

The average distance covered by flights operated by the Alaska Airlines division is 1,347 miles, whereas the regional division covers an average distance of 488 miles.

### 3.3.2.8 Key Partnerships

The main forms of cooperation are the mileage program, which allows you to redeem mileage from other companies on Alaska Airlines or to redeem Alaska Airlines mileage with a partner company; code-share agreements, which allow several companies to sell Alaska Airlines seats to their passengers by operating the same flight under different numbers. The code-share agreement depends on how the sale of seats is organised: there may be a full agreement, which allows another company's distribution system to sell Alaska Airlines inventory without restrictions, or there may be partial agreements, which allow only a few seats to be sold. This type of partnership provides a great benefit to the customer by giving them access to a wider selection of flights from the same reservation or distribution system (Alaska Air Group, 2023).

Additionally, there exist interline agreements that facilitate the provision of a unified fare for an itinerary involving multiple airlines to reach the final destination (Alaska Air Group, 2023).

Alaska Airlines is a member of the OneWorld alliance, which provides frequent flyer program members with access to lounges at various alliance member airports around the world, priority boarding, and security, baggage claims benefits, dedicated check-in counters and complimentary upgrades (Alaska Air Group, 2023).

It is worth mentioning the partnerships established with the airports where it is implemented for the use of exclusive lounges. There is also an agreement with the US Postal Service for the transportation of packages and mail. There are also partners such

as hotels, travel insurance, car rentals, and other services needed by passengers that are offered in the Alaska Airlines booking system for a commission (Alaska Air Group, 2023).

**3.3.2.9 Cost Structure**

Alaska Airlines describes its main sources of operating costs, as shown in Table 3.7.

Table 3.7 - Significant operation expenses 2022, data source: (Alaska Air Group, 2023)

	<b>2022 (in millions of dollars)</b>
<b>Aircraft fuel</b>	2.668
<b>Non-fuel operating expenses</b>	6.238
<b>Special items - fleet transition and other</b>	496
<b>Special items - labour-related</b>	84
<b>Total Operating Expenses</b>	9.576

The fuel costs display significant volatility due to the inherent characteristics of this market and are frequently influenced by financial negotiations involving multi-year contracts. It is important to acknowledge that jet fuel is a byproduct of crude oil and that considerations for refining margins and the jet fuel market must be considered. Jet fuel is typically purchased at the airport where the aircraft is refuelled, so there are a variety of contracts in place (Alaska Air Group, 2023).

Among the non-fuel expenditures, the primary component is the allocation of salaries and benefits, amounting to \$2.640 million in the year 2022. This includes potential bonuses tied to productivity, adherence to safety protocols, and emissions reductions. The following costs are worth mentioning: aircraft maintenance costs; aircraft rental costs due to leasing contracts; and airport tax costs, including airport taxes and rents within the airport itself. Also included are service contracts related to aircraft operations; distribution costs, including credit and debit cards; in-flight catering; and other expenses related to employee training and travel. Finally, amortisation and depreciation. In addition to operating expenses, financial accounting related to financing lines and liabilities must also be considered (Alaska Air Group, 2023).

They are then presented in Table 3.8, the merged results that will be used for comparison with other companies, but first, it is important to define two terms (Alaska Air Group, 2023):

**New Business Models in Aviation** - Subscription-Based Aviation applied to the 2030 World Cup

- **CASM:** represents the operating cost per ASM, is called "unit cost" and represents all operating expenses, including fuel and special items;
- **CASMex:** represents operating costs, excluding fuel and special items, per ASM.

Table 3.8 - Statistical Operating Expenses as of December 31, 2022, for the Alaska Airlines Group, data source: (Alaska Air Group, 2023)

<b>Per ASM</b>		<b>2022 (in cents per dollar)</b>
<b>CASM</b>		15,76
<b>Less the following components:</b>		
Aircraft fuel		4,39
Special items - fleet transition and other		0,82
Special items - labour and related		0,14
<b>CASMex</b>		10,41

**3.3.2.10 Canvas**

Finally, section 3.3.2 is summarised in Figure 3.6 using the Business Model Canvas.

<b>Business Model Canvas</b>				
<b>Key Partners</b>	<b>Key Activities</b>	<b>Value Propositions</b>	<b>Customer Relationships</b>	<b>Customer Segments</b>
Frequent Flyer Program in partnership with other airlines Code-share agreements Interline agreements. Oneworld Alliance Partnership with Airports	Core Business: Passenger transport Hub-and-spoke network with multiple hubs. Transcontinental and Regional Network	115 destinations with over 1200 flights daily Strong network in West Coast and Trans-Continental flights 6 hubs for a hub-and-spoke network. Low tariffs for a premium product Leaders in Safety awards Innovative airline: self-check-in, drop in baggage, and other factors. Sustainability concerns	Alaska Airlines Mileage Plan Customer Tiers Flight Pass for long term relationship High Customer Satisfaction Index	Leisure and Business Client: From First Class to Saver Fare (low to high price sensitive)
	<b>Key Resources</b> Narrowbody fleet, B737 (on the mainline) Recent fleet Multiple Hubs on the West Coast Workers (pilots, flight attendants, ramp service, office and passenger service, dispatchers)		<b>Channels</b> Direct to customer Traditional and online travel agencies Reservations Call Centers New forms of Revenue Management using Google Flights	
<b>Cost Structure</b> Aircraft Fuel Non-Fuel Operating Expenses (Staff salaries; Airport Taxes; Maintenance Costs; Channels Costs; Catering; Third-Party Regional Carrier Expense; Aircraft Lease and Rent; Depreciations and Amortizations) Fleet Transition CASM=15,76 cent \$ CASMex=10,41 cent \$		<b>Revenue Streams</b> Passenger Revenue Ancillary Revenues Mileage Plan Revenue Cargo Revenues Partners Fees (Rent-a-Car; Hotels) RASM=15,87 cent \$ Yield=17,16 cent \$		

Figure 3.6 - Alaska Airlines Business Model Canvas

### 3.3.3 Flight Pass

#### 3.3.3.1 Key Activities

Alaska Airlines' primary business is transporting passengers through its hub-and-spoke network. In turn, the company's Flight Pass allows you to travel on part of this network with a focus on the West Coast and, in particular, the State of California (Alaska Airlines, 2023b).

It allows travel between 15 destinations in the states of California, Nevada, Arizona, and Utah. Therefore, it utilises a portion of its operational network and through several of its hubs. However, the coverage is not global, being limited to a regional reality and some interstate flights (Alaska Airlines, 2023b).

#### 3.3.3.2 Value Proposition

The value proposition of the Alaska Airlines Flight Pass lies in its subscription structure. In other words, the mix of the front-of-the-line model, the consumables model, and the simplifier model, as explained in Chapter 2.5.

For the "front-of-the-line" model, the Flight Pass subscription provides a guaranteed seat on all flights and the flexibility to change reservations, if necessary, which is only available to non-Flight Pass holders who purchase this add-on or travel with FFP benefits (Alaska Airlines, 2023b).

The "consumables" model is guaranteed by providing a certain number of flights per year for a monthly fee. As an illustration, for \$49 per month, the passenger can enjoy 6 trips per year, equivalent to 1 round trip every 2 months. This can be extended to 24 trips per year. The continuous availability of flights enables customers to make bookings up to 14 hours before departure, with the option to extend the deadline up to 48 hours before the flight in "Pro" mode (Alaska Airlines, 2023b).

Ultimately, this can be considered a "simplification model" as it enables the purchase of multiple trips through a single subscription, eliminating the need to determine the destination and date within the imposed constraints. The customer can experience considerable savings in terms of both time and cost because of this.

The key value proposition of this product is the predictability of the cost of travel through the monthly fee. The passenger has the option to select a destination within a specified range and can book their flight up to 14 days in advance with no prior planning.

Furthermore, this flexibility offers customers an increased range of choices for selecting their destinations, regardless of whether they are travelling for business or pleasure, as this subscription can be utilised in either scenario (Alaska Airlines, 2023b).

### 3.3.3.3 Channels

The only distribution channel available is online with customer support via telephone lines. Travel bookings are also made online under the conditions of the chosen modality (Alaska Airlines, 2023a, 2023b).

The preferred methods for subscribing, booking, making changes, and cancelling are through online platforms and telephone lines.

### 3.3.3.4 Customer relationship

The Flight Pass itself is a form of customer relationship, as it is an automated service that allows the customer greater advantages in accessing the product and service. It is a service with an obligatory 12-month duration and the trips are credited according to the selected plan. Credits cannot be accumulated without redemption after the expiration date (Alaska Airlines, 2023b).

It should be noted, however, that the Flight Pass itself provides access to earning miles on the Alaska Airlines FFP and cannot be used on any of the partner airlines. It is possible to earn and redeem status miles (Alaska Airlines, 2023a, 2023b).

### 3.3.3.5 Customer Segments

Alaska Airlines offers this type of product to all passengers already travelling with the company, both for leisure and business. Depending on the type of travel, the Flight Pass may be more beneficial for business or leisure travellers.

The company suggests using it for leisure trips within its route since it is mandatory to take the return flight. This can be utilised for either holiday periods spanning 14 days or on weekends. Considering the company's restricted network and the absence of connecting flights, customers can opt for destinations that offer shorter travel durations, as advertised by the company (Alaska Airlines, 2023b).

It is also possible for business customers to make regular trips according to their needs. Whether it's weekend trips back home or trips to accompany or conduct business at a destination where their presence is required regularly (Alaska Airlines, 2023b).

**3.3.3.6 Pricing Strategy**

The Alaska Airlines Flight Pass requires a subscription with regular payments over 12 months. Customers are awarded credits for frequent travel that can be utilised within 90 days (Alaska Airlines, 2023b).

Subscriptions start at \$49 for one trip every 12 months, booked 14 days in advance, and range up to the most comprehensive version of the subscription, which allows for 24 trips per year, credited every two weeks and booked up to 48 hours in advance (Alaska Airlines, 2023b). The customer decides the modality based on their needs.

Additionally, there are taxes and fees for each flight reservation that are not covered by the monthly fee. Moreover, there is a nominal charge of 1 cent for booking the flight (Alaska Airlines, 2023b).

**3.3.3.7 Flight Pass Canvas**

Alaska Airlines Flight Pass Canvas is shown below, Table 3.9, derived from the statements described in chapter 3.3.3.

Table 3.9 - Flight Pass Canvas for Alaska Airlines

<b>Business Organisation</b>	<b>Product Architecture</b>		
<p><b>Key Activities</b></p> <p>Direct routes from the Hub and spoke network.</p> <p>15 destinations across California and neighbouring states</p>	<p><b>Value Proposition</b></p> <p>Subscription business model compatible with front-of-the-line, consumable, and simplifier model</p> <p>Fixed and lower prices for regular travellers</p>	<b>Customer Interface</b>	
		<b>Channels</b>	<b>Customer Segments</b>
		<p><b>Customer Relationship</b></p> <p>Automated service</p> <p>Accumulates with FFP benefits</p>	<p>Business and leisure clients</p> <p>Short holiday travellers</p> <p>Regular business clients</p>
<p><b>Pricing Strategy</b></p> <p>Fixed monthly fee.</p> <p>12-month mandatory subscription.</p> <p>Credits regular trips.</p> <p>It is necessary to pay taxes and fees.</p>			

### 3.3.3.8 Value Proposition Canvas

Based on the data described, it is possible to create a value proposition canvas to assess the value proposition and whether it can find its way into the customer segment. This canvas is shown in Figure 3.7.

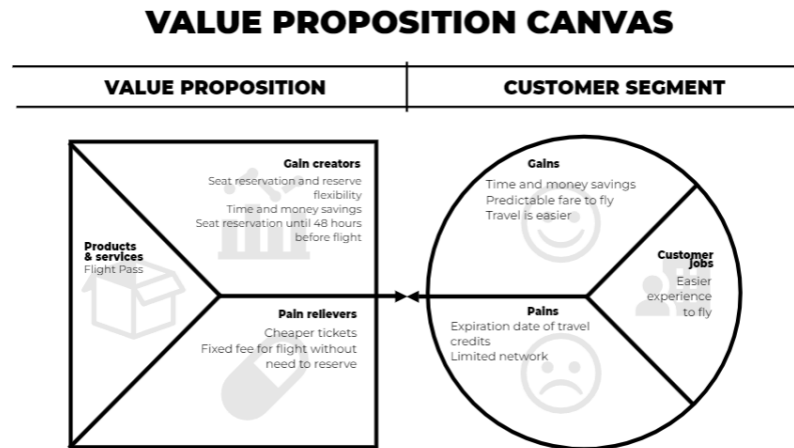


Figure 3.7 - Value Proposition Canvas of Alaska Airlines Canvas

## 3.4 Case 2- Frontier Airlines

### 3.4.1 Characterisation

Frontier Airlines is a North American ultra-low-cost airline. The headquarters are located in Denver, Colorado, USA. Its operations span across the United States and multiple international destinations. It is a subsidiary of Indigo Partners, a private equity firm that owns other airlines, including Wizz Air. The organisation was established in 1994 (Wikipedia contributors, 2023c).

### 3.4.2 Business Model Canvas

#### 3.4.2.1 Customer Segment

The target market for Frontier Airlines consists primarily of price-sensitive customers. The fundamental fare policy of Frontier Airlines is to provide customers with only the services they are willing to pay for, apart from the actual aeroplane seat. Services and other products are excluded from the basic fare, allowing for a much lower initial unit price compared to other companies in the market (Frontier Group Holdings Inc, 2023a).

Families are part of the company's strategy, so it is betting on ways to attract children as a targeted marketing tool (Frontier Group Holdings Inc, 2023a). The strategy to attract families culminates in the Kids Fly Free program; for customers with a Discount Den subscription, it is possible for a child up to 15 years of age to fly free on certain flights (Frontier Airlines, 2023). As such, the staff is trained to deal with this customer segment.

The value proposition aims to attract customers who prioritise low fares. For example, there is only one type of ticket, Standard; the aircraft has only one class; and any extras, such as unchecked baggage (above a certain size) and checked baggage, must be paid for separately, as must the choice of seat. Additionally, the company maintains the viewpoint that it can appeal to a specific group of business clients, particularly small businesses, who emphasize price sensitivity. Nevertheless, it is crucial to acknowledge that this is not the primary area of focus for the airline (Frontier Group Holdings Inc, 2023a).

### 3.4.2.2 Value Proposition

"Low Fares Done Right" stands as the foremost value proposition provided by Frontier Airlines to its customers. To achieve this, it is necessary to reach over 100 airports in the United States and neighbouring countries. Within a context of point-to-point routes that are primarily centred on a few key bases (Frontier Group Holdings Inc, 2023a). Figure 3.8 shows the network structure of the company.

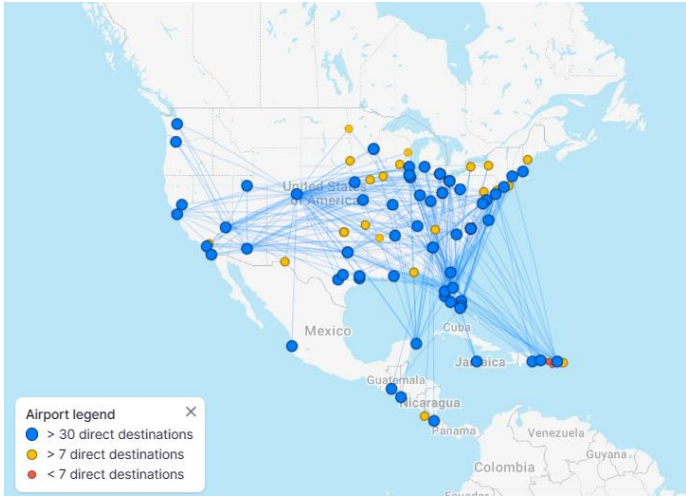


Figure 3.8 - Frontier Airlines network, adapted from (FlightConnections, 2023)

The low-fare strategy with the flexibility of optional services allows the company to differentiate its value proposition. It can therefore be categorised as an ultra-low-cost carrier within the airline business models. Passengers are provided with the opportunity to decide if they want to include checked baggage, choose their seats, enjoy larger seating

options, and have the flexibility to change, cancel, or receive a refund for their tickets. These options can be purchased in a package called "The Works" or "The Perks" at a more competitive price. Again, Frontier's offering is based on travelling at the lowest possible cost. This aligns with the philosophy of equal treatment across passenger classes (Frontier Group Holdings Inc, 2023a).

This concerns the inclusion of subscription services within Frontier's fundamental products: "The GoWild! All-You-Can-Fly Pass" and the "Discount Den". The former refers to the Flight Pass modality implemented; it is a subscription that gives access to unlimited travel for 1 cent \$. The latter is an annual subscription service that gives members access to the lowest fares ever, the "Kids Fly Free" program and the opportunity to earn miles (Frontier Group Holdings Inc, 2023a, 2023b).

The inclusion of a mileage program is a differentiating factor for Frontier Airlines from other companies in the same segment (low-cost), which, according to the literature reviewed in Chapter 2, does not offer this type of benefit. Frontier Miles is a loyalty program, where passengers can earn miles on all flights based on their status (Frontier Group Holdings Inc, 2023a).

Frontier Airlines' focus on innovation is more on refining the low-cost model. In other words, it is seeking service innovations that will further reduce the fare paid by the customer. The subscription models are innovative in the industry and allow to offer a value proposition based on the subscription economy, increasing loyalty and interaction with customers.

Frontier Airlines, for its part, uses digital media to present itself to customers with a focus on carbon sustainability. It presents itself as "America's Greenest Airline" and claims to use 43 per cent less fuel than its peers. As a result, it has lower carbon emissions and can appeal to customer segments that are more concerned about their carbon footprint. It is committed to reducing single-use plastics on board and to active carbon offsetting, such as planting new trees (Frontier Group Holdings Inc, 2023b).

### 3.4.2.3 Channels

In the low-cost airline segment, Frontier Airlines primarily uses direct distribution channels. The two main distribution segments are (Frontier Group Holdings Inc, 2023a):

- Direct to the customer - through the website, mobile application, and contact centre. In 2022, it will account for 70 per cent of sales. Website and app usage are the cheapest forms of distribution;
- Third parties - this includes travel agencies that have access to global distribution systems (through systems such as Amadeus, Galileo, ...) or online agencies (Priceline, Expedia, ...). In 2022, they represented 30% of sales. Frontier Airlines has a policy of not paying commissions to third parties unless required by local law. Global Distribution Systems allow you to access schedules and book your seat directly and electronically without having to contact the airline reservation centre.

Different forms of communication with the customer become prominent. First, differentiate the brand through marketing. The key message that differentiates the brand is its value proposition: "Low Fares Done Right," so the goal is to keep marketing costs as low as possible to keep fares low. The message serves as a form of marketing that consistently features limited promotional fares; in this way, it is possible to create prominence for the brand, giving a significant benefit to the customer, who will inevitably be more satisfied than with any other form of communication. In addition, newsletters and advertisements on the Internet, radio, and other communication channels stand out. The brand's implementation of mileage and subscription programs serves as a means to cultivate a devoted customer base, which can significantly enhance Frontier's reputation. There are alternative methods to accentuate the brand, such as incorporating unique animal artwork on the aircraft, effectively enhancing brand visibility, particularly among family-oriented customers. Marketing and sales expenses represent 5 per cent of annual revenue (Frontier Group Holdings Inc, 2023a).

#### 3.4.2.4 Customer Relationship

Within the long-term relationship, Frontier Airlines has two significant segments, the first of which is the loyalty program. Customers are drawn to FFP, Frontier Miles, because of the appealing benefits of family pooling and elite status. Miles can be accumulated through travel or by utilising the Frontier Miles World Elite MasterCard. Each mile travelled corresponds to one mile earned on the FFP, which does not have an expiration date. The Frontier credit card allows customers to earn miles by making purchases at partner establishments such as hotels, car rentals, and restaurants. These miles can be redeemed as rewards or used for any credit card purchase. It should be noted, however, that the credit card is part of an \$89 annual subscription. Consequently,

the card becomes a subscription service that grants access to various advantages for accumulating mileage (Frontier Group Holdings Inc, 2023a, 2023b).

In conjunction with the FFP, the elite status program incorporates three tiers of advantages. Customers can join the program after earning 20,000 miles and reach the final level after earning 100.000 miles. These tiers provide various advantages, including complimentary carry-on baggage, seat selection, the option for the entire family to earn mileage, and priority boarding. Upon reaching the highest tier, customers are automatically enrolled in the Discount Den program and gain access to complimentary checked baggage. The tiers provide access to mileage multipliers (Frontier Group Holdings Inc, 2023b).

Within the realm of subscription services, Discount Den can be classified as a type of membership. It is an automated service that provides customers with various benefits, as previously observed. This model aligns with the "front-of-the-line" approach, wherein customers receive the same product regardless of their subscription status, along with additional perks.

Finally, as mentioned above, there is another form of automated service, the "GoWild! All-You-Can-Fly Pass", which allows customers to travel unlimitedly by booking their flight the day before for domestic destinations and 10 days in advance for international flights. The customer is required to pay a nominal fee of \$0,01, along with the associated charges. The present work aims to provide a comprehensive analysis of a specific type of Flight Pass offered by Frontier Airlines (Frontier Group Holdings Inc, 2023b).

Additionally, the company offers multiple customer support channels, such as 24/7 chat and email, to promptly address inquiries. In other cases, they display forms for formal complaints (Frontier Group Holdings Inc, 2023b). It should be noted that in the "J.D. Power 2023 North American Airlines Satisfaction Study" Frontier has the lowest overall satisfaction score among companies operating in the economy segment (Troy, 2023).

#### 3.4.2.5 Revenue Streams

The main source of revenue comes from operating activities. In the 2022 financial statements, a comprehensive analysis is provided, outlining the division of operating revenues into passenger revenues and other revenues. Passenger revenue is divided into fare revenue and non-fare revenue. In 2022, Frontier Group Holdings Inc reported a total operating revenue of \$3.326 million (Frontier Group Holdings Inc, 2023a).

Ticket sales revenue is recorded as a liability and is not recognised as revenue until the flight is completed. These revenues total \$1.382 million in 2022, excluding amounts that passengers must pay for federal, state, and airport taxes (Frontier Group Holdings Inc, 2023a).

In contrast, certain passenger revenues are not derived from ticket sales; these are referred to as "non-fare passenger revenues" in the accounting report. It encompasses additional charges like service fees, baggage fees, and seat selection fees. Service-related fees include cancellation fees, non-refundable ticket expiration fees, and pre-departure itinerary change fees (Frontier Group Holdings Inc, 2023a).

Additional sources of revenue encompass advertising revenue, revenue from Frontier's credit card, and commissions derived from sales made through Frontier's hotel and car rental reservation system (Frontier Group Holdings Inc, 2023a).

The main items of operating revenue are shown in Table 3.10. The findings align with the expected outcomes of a budget airline, where most of the revenue is derived from supplementary services rather than ticket purchases. By adopting this method, fares can be maintained at a lower rate, making it a more appealing choice from a marketing standpoint. As a result, it is possible to attract more price-sensitive passengers, as advocated by the company's value proposition.

Table 3.10 - Principal figures of operational revenue, data source: (Frontier Group Holdings Inc, 2023a)

		<b>2022 (in millions of dollars)</b>
<b>Passenger Revenues:</b>		
	Fare	1.382
<b>Non-fare passenger:</b>		
	Service fees	817
	Baggage	741
	Seat selection	251
	Other	57
	Total non-fare passenger revenue	1.866
<b>Total passenger revenues</b>		<b>3.248</b>
<b>Other revenues</b>		<b>78</b>
<b>Total operating revenues</b>		<b>3.326</b>

Finally, the corresponding revenue statistics are displayed in Table 3.11.

Table 3.11 - Principal revenue figures of Frontier Airlines, data source: (Frontier Group Holdings Inc, 2023a)

<b>RPM</b>	25.669 millions
<b>ASM</b>	31.746 millions
<b>Load Factor</b>	80,9%
<b>RASM</b>	10.48 cent \$

### 3.4.2.6 Key Resources

Next, Table 3.12 shows the Group's fleet and its characteristics for the year 2022.

Table 3.12 - Aircraft fleet and their average age, as at December 31, 2022, data source: (Frontier Group Holdings Inc, 2023a)

<b>Aircraft Type</b>	<b>Seats</b>	<b>Owned</b>	<b>Leased</b>	<b>Total</b>	<b>Average Age in Years</b>
<b>A320ceo</b>	180 or 186	-	13	13	9
<b>A320neo</b>	186	-	82	82	3
<b>A321ceo</b>	230	-	21	21	6
<b>A321neo</b>	240	-	4	4	-
<b>Total</b>	-	-	120	120	4

Frontier Airlines exclusively operates aircraft from the A320 family, a decision that enables substantial cost efficiencies in line with its value proposition and low-cost business model. This contrasts with the utilisation of multiple aircraft families that are typically seen in FSNC companies. The uniformity allows for all crew members and pilots to operate any aircraft within the fleet; maintenance is simplified, procedures can be standardised, saving on specific training; and spare parts can be purchased in bulk. Consequently, there are cost savings that align with a reduced cost structure, thereby enabling a value proposition centred on affordable fares. Furthermore, it is worth mentioning that the company does not possess any aircraft of its own; instead, all aircraft are leased, facilitating more frequent fleet updates.

This is a fleet composed entirely of narrow bodies, which, despite the improvements of the neo generation, are limited in range. It does, however, allow for a lower number of

flight attendants per flight. This generation is also noteworthy for Frontier Airlines because of the fuel savings compared to the current engine option generation. The company plans to convert its entire fleet to neo aeroplanes by 2029, with the introduction of 67 A320neo and 154 A321s (Frontier Group Holdings Inc, 2023a).

Frontier Airlines operates primarily out of its main hub in Denver. However, it has significant bases at airports in Atlanta, Chicago-Midway, Cleveland, Las Vegas, Miami, Orlando, Philadelphia, Phoenix-Sky Harbor, Tampa, and Trenton. It operates primarily at major airports (Karki, 2023). This deviates from the norm, as low-cost airlines primarily operate out of secondary airports. It is worth mentioning that the responsibility for paying most of the taxes lies with the passengers.

Frontier has a workforce of 6.470 individuals. This includes 1.997 pilots, 3.350 flight attendants, 175 aircraft technicians, 45 aircraft appearance agents, 34 flight dispatchers, 24 material specialists, 19 maintenance controllers and 826 administrative personnel. The company focuses on employing a highly productive workforce with highly automated processes and the use of external labour when necessary (Frontier Group Holdings Inc, 2023a).

#### 3.4.2.7 Key Activities

The primary focus of Frontier Airlines is the transportation of passengers. The foundation of this system is rooted in a cost-effective approach, resulting in the establishment of a network of point-to-point routes. Nevertheless, it is important to acknowledge that the company operates multiple bases and hubs that cater to various destinations, thereby facilitating connections and expanding the potential customer pool. One strategy is to have routes in destinations served by few flights or in markets that are expensive for passengers (Frontier Group Holdings Inc, 2023a).

Due to the limitations posed by its aircraft type, Frontier Airlines strategically operates short- and medium-haul routes, prioritising high capacity per aircraft through a configuration that aligns closely with the manufacturer's maximum passenger limits.

It primarily operates transcontinental flights with some international destinations, as well as short-haul flights within and between states (Frontier Group Holdings Inc, 2023b). It should be noted that most maintenance activities are outsourced. As a result, the focus of activities is on passenger transportation (Frontier Group Holdings Inc, 2023a).

### 3.4.2.8 Key Partnerships

The code-share agreement is the most significant partnership that directly affects the core business of passenger transportation. Within the corporate hierarchy of Indigo Partners, the parent company of Frontier Airlines, Volaris has entered into a code-share agreement. With one ticket and reservation, passengers can travel on both airlines. However, it should be noted that this is the only code-share agreement that Frontier Airlines has. From the airline's perspective, these agreements are disadvantageous because it does not participate in any airline alliances. Thus, such an agreement would be at a competitive disadvantage in the market due to the lack of attractiveness it would have without being part of a large alliance (Frontier Group Holdings Inc, 2023a).

Another form of cooperation is the relationship established with suppliers of goods and technology. These partnerships are listed here: first, Airbus, and the purchase agreements for the new generation of aircraft, through direct lease agreements with the manufacturer; Pratt & Whitney for engine maintenance, through an agreement based on the number of hours of component failure; with other companies for the hiring of specialised technicians and other maintenance activities; numerous companies for the provision of services, including baggage handling, ramp services, catering, contact centres, etc. (Frontier Group Holdings Inc, 2023a).

### 3.4.2.9 Cost structure

The major sources of operating expenses for Frontier Airlines are detailed in Table 3.13.

Table 3.13 - Significant operation expenses 2022, data source: (Frontier Group Holdings Inc, 2023a)

	<b>2022 (in millions of dollars)</b>
<b>Aircraft fuel</b>	1.160
<b>Salaries, wages, and benefits</b>	715
<b>Aircraft Rent</b>	556
<b>Station operations</b>	422
<b>Sales and Marketing</b>	164
<b>Maintenance, materials, and repairs</b>	146
<b>Depreciation and amortisation</b>	45
<b>Transaction and merger-related costs</b>	10
<b>Other operating expenses</b>	153

<b>Total operating expenses</b>	3.371
---------------------------------	-------

Once again, fuel costs are the most significant for the company. In this particular scenario, it constitutes 34 per cent of the operating expenses in 2022. It depends highly on the volatility of oil prices in international markets and can also face local logistical constraints. A highly efficient fleet is therefore crucial in times of high kerosene prices. In this case, the Airbus neo fleet meets this risk. For a low-cost airline that relies on the affordability of tickets as its main selling point, minimising operating costs is crucial, particularly when fuel expenses account for a significant portion of the cost structure. Consequently, during periods of oil price uncertainty, the task of profit management becomes more challenging and may cause the escalation of ticket prices, subsequently diminishing the competitive advantage based on affordability (Frontier Group Holdings Inc, 2023a).

In the realm of business strategy, aircraft leasing is crucial for maintaining the flexibility required to deliver on the value proposition. Aircraft leasing has a significant and recurring impact on a company's cost structure. Nevertheless, it has the potential to decrease aircraft ownership expenses by avoiding the immediate outlay of substantial capital, thereby reducing the initial cost, and ultimately alleviating the burden on the residual value of the aircraft. Moreover, it allows for a fleet that is highly versatile in terms of both size and characteristics, adapting to various circumstances. Furthermore, this flexibility simplifies fleet renewal and facilitates staying up-to-date with technological advancements, particularly those that enhance fuel efficiency and decrease expenses. While it may not be the cheapest option in the long run, the aircraft leasing strategy allows for a lower cost structure over time (Frontier Group Holdings Inc, 2023a). The relevant cost statistics are shown in Table 3.14.

Table 3.14 - Statistical operating expenses as of December 31, 2022, data source: (Frontier Group Holdings Inc, 2023a)

<b>Per ASM</b>	<b>2022 (in cents per dollar)</b>
<b>CASM</b>	10,62
<b>Less the following component:</b>	
Aircraft fuel	3,66
<b>CASMex</b>	6,96

### 3.4.2.10 Canvas

Finally, Chapter 3.4.2 is summarised in Figure 3.9 using the Business Model Canvas.

<b>Business Model Canvas</b>				
<b>Key Partners</b>	<b>Key Activities</b>	<b>Value Propositions</b>	<b>Customer Relationships</b>	<b>Customer Segments</b>
Code-Share agreement with Volaris Aircraft lease partner: Airbus Engine Maintenance partner: Pratt & Whitney Third Party Maintenance agents Third party ground handling, catering, contact centers, engineering, passenger handling	Core Business: Passenger transport Point-to-point network with connection flights Short international routes Transcontinental routes  <b>Key Resources</b> Narrowbody fleet, A320 family Airports: Hun in Denver and other bases Human Resources (pilots, flight attendants, aircraft technicians, flight dispatchers, administrative workers)	“Low Fares Done Right” 100 destinations within the US and neighbouring countries Point-to-point routes with several bases No ancillaries associated. Ancillaries’ packs available Subscription services: Discount Den (for even lower tariffs) Flight Pass (GoWild! All-You-Can-Fly Pass): unlimited travel Kids Fly Free: for Discount Den members children do not pay for the ticket. FFP: Frontier Miles with credit card (for an annual fee)	FFP: Frontier Miles Tier Status in the FFP Automated services: subscription services (Discount Den, Flight Pass)  <b>Channels</b> Direct to customer: website, app and call center Travel agencies Marketing campaigns (discount campaigns and traditional publicity)	Leisure Clients Price sensitive Business Customers Families Price Sensitive customers
<b>Cost Structure</b> Aircraft Fuel Non-Fuel Operating Expenses (Staff salaries; Station Operations; Maintenance Costs; Sales and Marketing; Aircraft Lease and Rent; Depreciations and Amortizations) CASM=10,62 cent \$ CASMex=6,96 cent \$		<b>Revenue Streams</b> Passenger Revenue Ancillary Revenues Credit Cards Fees Publicity RASM= 10,48 cent \$		

Figure 3.9 - Frontier Airlines Business Model Canvas

## 3.4.3 Flight Pass

### 3.4.3.1 Key Activities

Frontier Airlines' primary business is transporting passengers, primarily leisure travellers. Considering this, Frontier Airlines' Flight Pass takes advantage of its extensive network structure, incorporating both domestic and international flights (Frontier Group Holdings Inc, 2023b). The scope of activities and the organisational nature of this aspect have been described in more detail in chapter 3.4.2.7.

### 3.4.3.2 Value Proposition

The value proposition of the Frontier Airlines Flight Pass lies in its subscription structure. It is based on the philosophy of the "All-you-can-eat" subscription model described in Chapter 2.5.

Despite certain intricacies and stipulations that have been presented, customers are provided with the opportunity for boundless travel, with only taxes and fees applicable for each journey (Frontier Group Holdings Inc, 2023b).

Flexibility is limited to seat bookings, i.e. it is only possible to book a seat from the day before the flight for domestic flights. International flights can be booked up to 10 days before departure (Frontier Group Holdings Inc, 2023b).

Flight Passes are available in different variations, including annual, seasonal, and monthly options. These are subject to sales windows, meaning that an annual pass can only be purchased in April, for example (as in 2023-2024). Season Passes, on the other hand, are available during the season itself and at an earlier date. These can only be used on the dates they are available, as described in the terms and conditions of each pass (Frontier Group Holdings Inc, 2023b).

It is a pass designed to increase the load factor of any aircraft, with benefits for both the customer and the company. On one hand, customers are provided with access to last-minute flights upon purchasing the pass, while on the other hand, the company can boost its revenue by selling passes and filling potentially vacant seats.

The Pass does not include any additional services, but the passenger may decide to add them for a fee. It is possible to take connecting flights as long as they are available and follow the above rules (Frontier Group Holdings Inc, 2023b).

The value proposition of this pass is based on the variety of routes and frequencies available to all passengers. It can be purchased for any seat, if available. It therefore fits into the "all-you-can-eat" model, as the variety of options is extremely large, and it is only up to the customer to choose what to consume.

### 3.4.3.3 Channels

The available distribution channel for both pass purchase and flight booking is exclusively online, through the Frontier Airlines website (Frontier Group Holdings Inc, 2023b).

#### 3.4.3.4 Customer relationship

The Flight Pass functions as a means of fostering customer relationships, offering automated services that enhance customer benefits in accessing products and services. The service adapts to the season and passenger availability.

In addition, the Pass service itself renews automatically, giving access to the benefits of the initial subscription, especially in terms of price. The customer can cancel at any time without having to renew more than once (Frontier Group Holdings Inc, 2023b).

It is not possible to earn FFP miles with the pass, but the pass extends their validity. In addition to enjoying tier status and all the benefits that come with it (Frontier Group Holdings Inc, 2023b).

#### 3.4.3.5 Customer Segments

Intended for leisure travellers, this product is tailored to meet the needs of those who are open to booking their travel spontaneously. Its design is specifically tailored to meet the requirements of seasonal travellers. The pricing varies for summer and winter, with separate sections. It is reserved for passengers who travel regularly to a wide variety of destinations.

#### 3.4.3.6 Pricing Strategy

It is a subscription product with automatic renewal and different subscription periods that can be seasonal, monthly, or yearly (Frontier Group Holdings Inc, 2023b).

There are limited promotions for new members, with the first fee being cheaper than subsequent fees. The Annual Pass is \$499, the Winter Pass is \$399, and the Monthly Pass is \$149. Customers have the flexibility to choose the most convenient travel time for them, at a suitable price. It should be noted that each booking costs 1 cent plus taxes and fees (Frontier Group Holdings Inc, 2023b).

#### 3.4.3.7 Flight Pass Canvas

Frontier Airlines Flight Pass Canvas is shown below, Table 3.15, derived from the statements described in Chapter 3.4.3.

Table 3.15 - Flight Pass Canvas for Frontier Airlines

Business Organisation	Product Architecture		
<b>Key Activities</b> Use of the full network of Frontier Airlines Transport passengers on regular flights	<b>Value Proposition</b> "All-you-can-eat subscription model" Unlimited travel Seasonal, monthly, and annual passes Last minute flying	Customer Interface	
		Channels	<b>Customer Segments</b> Last-minute travellers Seasonal travellers Leisure clients
		Customer Relationship	
<b>Pricing Strategy</b> Unlimited travel for a single fee with automatic renewal. Varies from 159 dollars per month to 499 dollars in a year			

3.4.3.8 Value Proposition Canvas

The described data serves as a foundation for constructing a value proposition canvas, enabling the assessment of the value proposition and its fit within the customer segment. This canvas is shown in Figure 3.10.

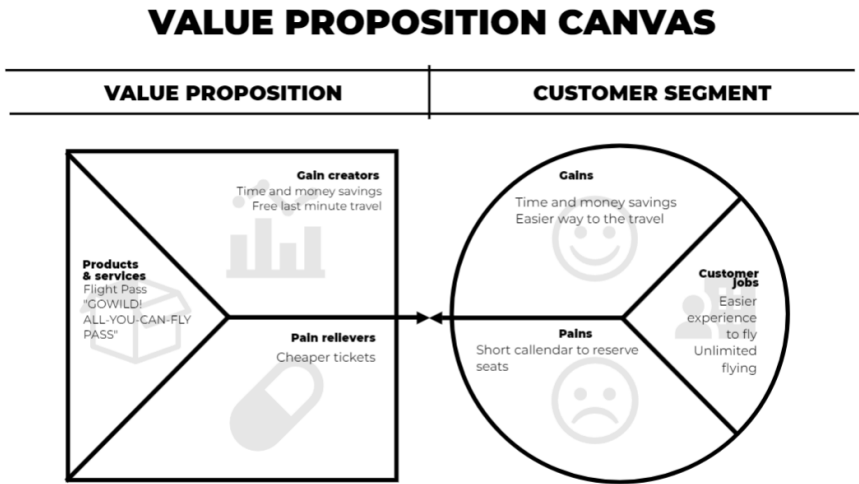


Figure 3.10 - Value Proposition Canvas of Frontier Airlines Flight Pass

## **3.5 Case 3- Air Canada**

### 3.5.1 Characterisation

Air Canada is Canada's largest airline in terms of both size and passengers carried. Founded in 1937, it offers scheduled and charter services. It serves over 222 destinations worldwide. It is a member of the Star Alliance (Wikipedia contributors, 2023c).

### 3.5.2 Business Model Canvas

#### 3.5.2.1 Customer Segment

Air Canada serves several customer segments. Among the most important are business, leisure, and cargo customers. The segmentation encompasses a wide range of customer types.

The main airline, Air Canada, offers its customers a service comprising Economy Class, Premium Economy, and Business. With these three cabin configurations, the airline tries to cover different price sensitivities and different customer needs. Within these classes, there is a differentiation based on the associated ancillary products. These can range from a more basic fare for the more price-sensitive customer to a fare with several associated extras for the less price-sensitive customer. The above works for any selected class. It follows that leisure customers are offered the widest range of options to suit their needs. Whether it is a standard fare experience, involving the mere purchase of the trip, or a premium economy experience featuring more spacious seats, for instance. So, it is an experience with these characteristics, designed for the leisure customer or the more price-sensitive business customer (Air Canada, 2023a).

Besides the parent company, there are subsidiaries: Air Canada Vacations and Air Canada Rouge. The former is a travel agency that develops, promotes, and distributes travel and holiday packages. It is therefore a company dedicated entirely to the leisure segment. Air Canada Rouge, on the other hand, is a low-cost subsidiary of the Air Canada group that leverages the competitive advantages of its parent company by using its extensive network and connectivity to differentiate itself in the leisure segment (Air Canada, 2023a). This is supported by the following statement: "Air Canada pursues a comprehensive strategy to improve its competitiveness and profitability in leisure markets" (Air Canada, 2023a, p. 9).

On the other hand, Air Canada also favours the business segment. This class is mainly characterised by superior comfort. However, it should be noted that the most basic fare in this class does not include free cancellation, so the price sensitivity of the customer is differentiated based on the associated ancillaries. It is of note that this segment contains a bonus FFP. Access to concierge services, inflight meals, and exclusive airport lounges is provided. Air Canada offers a premium experience for customers seeking luxury and convenience (Air Canada, 2023c).

Finally, there is Air Canada's business-to-business arm through its cargo division. This is the largest air cargo carrier in Canada in terms of capacity. It seeks customers who need to ship large loads in a tight time window. Consequently, it is actively searching for customers who prioritise time sensitivity over transportation costs. Although it can carry cargo on flights that also carry passengers, Air Canada has aircraft that are dedicated to carrying cargo (Air Canada, 2023a).

### 3.5.2.2 Value Proposition

Air Canada has a global network with 945 daily flights to 185 destinations on 6 continents. It has routes across the Atlantic and Pacific oceans (Air Canada, 2023b). With flights to 51 Canadian airports and 46 North American airports in the summer of 2022, the company offers its customers the largest network with the most destinations of any Canadian airline. It flies to 83 international destinations (Air Canada, 2023a). Figure 3.11 shows the company's network of destinations.



Figure 3.11 - Air Canada Network, adapted from (FlightConnections, 2023)

The strategy is to offer customers a strong global network covering all segments of air transportation. For this reason, it is necessary to have an active regional network that connects the various domestic destinations to the bases and then transfers them to the international network. Therefore, one of the implicit suggestions is to establish a network that allows passengers to reach their destinations with minimal effort. There are also

code-sharing agreements with other companies that allow the network to be expanded (Air Canada, 2023a).

Another key factor in the customer proposition is alliances. Here, there is membership in Star Alliance, which is the largest international airline alliance. This allows for a stronger network, access to lounges, and check-in services at multiple airports (Air Canada, 2023a).

Air Canada has three classes of service: Economy, Premium Economy, and Business Class. The main difference between them is the comfort associated with the space between the rows and the quality of the seats. However, there are other differences between them. For example, the Economy class has 5 different levels, ranging from no possibility to change the flight schedule to the possibility to accumulate FFP points, free ticket change, free seat selection and free checked baggage. On the other hand, the Premium Economy offers access to more spacious seats, an in-flight meal and priority airport services (check-in and boarding). Finally, Business Class offers fully reclining seats (on international flights), in-flight entertainment, meals, and access to airport lounges (Air Canada, 2023c).

The frequent flyer program, known as Aeroplan, enables members to accumulate points through travel on Air Canada and affiliated airlines, as well as by making purchases from specific merchants (Air Canada, 2023b).

As part of the FSNC model, Air Canada offers a service that fits this perspective, but the value proposition associated with Air Canada Rouge stands out. The low-cost subsidiary has a lower cost structure, both for the company itself and for customers. As a result, Air Canada has a value proposition at all price points that appeal to all types of customers. It should be noted that the low-cost subsidiary also provides access to FFP (Air Canada, 2023a).

One of Air Canada's core values is "Safety First, Always". The company's operational safety management system is a comprehensive set of processes and resources that ensure appropriate and effective safety. For example, all employees are trained in this safety culture; data analysis and the use of artificial intelligence are used to improve aspects of the safety management system (SMS); there is a reporting culture aimed at improving critical safety aspects (Air Canada, 2023a).

Another important aspect of Air Canada's value proposition is its sustainable initiatives, such as investments in Sustainable Aviation Fuels (SAF) technology, electrification of

ground support vehicles at airports and the ability for customers to pay to offset carbon emissions (Air Canada, 2023b).

### 3.5.2.3 Channels

Air Canada has three major distribution channels (Air Canada, 2023a):

- Direct to the customer: through their distribution channels, especially online, the main website, the FFP website, the mobile application, their travel agency and the small and medium business website;
- Third parties: in this modality, there are contact centres and agencies with access to the Global Network of General Sales Agents system and traditional travel agencies (both physical and online);
- Air Canada API: for corporate customers, it is possible to book the service themselves and through websites that redirect the customer to the company's website.

Other means of distribution worth mentioning are advertising, especially in the newsletter. It also has customer support tools, including a telephone helpline and support forms on its website (Air Canada, 2023c).

### 3.5.2.4 Customer Relationship

FFP Aeroplan serves as Air Canada's primary means of establishing long-term relationships with its customers. This program enables customers to accumulate points through their travels with Air Canada and selected partners. They can also purchase products and services from other partners and earn points. These points can then be used for travel, merchandising purchases, gift cards, or with select partners (Air Canada, 2023b).

The main aim of this FFP is to attract customers to Air Canada. Members of this program earn points when they fly with Air Canada or Star Alliance airlines. These points are determined by factors such as program status, distance travelled, class of travel, and fare amount. There are also partnerships with credit card companies, hotels, car rentals, and other partner agencies (Air Canada, 2023b).

JP Morgan Chase is the bank responsible for issuing the credit card. Companies such as Uber and Starbucks are included in the list of partnerships, going beyond the usual scope of partnerships implemented under FFP (Air Canada, 2023a).

Membership in the Aeroplan program grants access to various discounts on Air Canada services, including significant savings on Internet vouchers and complimentary in-flight messaging (Air Canada, 2023c).

The program attracts leisure travellers by offering a shared account that allows all family members to earn and redeem points. The focus on this segment is also clear in the Group's low-cost airline, which allows FFP points to be accumulated and redeemed on the same account (Air Canada, 2023c).

Aeroplan members can achieve elite status through various tiers, starting from 20,000 points and culminating in one million points, which grant exclusive lifetime benefits. The tiers provide benefits such as seat selection at check-in or when making reservations; priority booking and support services; priority check-in; priority at the airport; complimentary checked baggage on both Air Canada and Star Alliance member airlines; access to airport lounges; and class upgrades, subject to availability (Air Canada, 2023c).

Another form of Air Canada's long-term relationship is its highly customisable Flight Pass. It comprises a package of pre-purchased flights and will be analysed in this work (Air Canada, 2023c).

Air Canada has very low customer satisfaction scores, according to a J.D. Power study (Troy, 2023). According to the findings of this study, the satisfaction scores were significantly below average and ranked among the lowest across all flight classes and destinations (Troy, 2023).

### 3.5.2.5 Revenue Streams

Air Canada's principal sources of operating revenue are as follows (Air Canada, 2023b):

- **Passengers:** Air Canada breaks down its main sources of passenger revenue by the markets in which it operates. In the first place is the Canadian domestic market, which accounts for the largest share of revenue: C\$4.424 million. This is followed by the Atlantic market with C\$4.381 million. The US market accounted for C\$3.017 million. Other markets and the Pacific Rim account for C\$1.298 million and C\$1.118 million, respectively;
- **Cargo:** this component has revenues of C\$1.266 million;
- **Other:** revenue from things like Air Canada Vacations (the company's travel agency), lounges, and non-airline revenue, such as FFP and ancillaries. It represents C\$1.052 million in 2022.

The following table, Table 3.16, shows the key operating revenue statistics.

Table 3.16 - Key revenue figures for Air Canada, data source: (Air Canada, 2023b)

<b>RPM</b>	18,525 million
<b>ASM</b>	22,368 million
<b>Load Factor</b>	82,8%
<b>RASM</b>	17,2 cents C\$
<b>Yield</b>	21,4 cents C\$

### 3.5.2.6 Key Resources

Table 3.17 shows the Air Canada Group's fleet and its respective characteristics.

Table 3.17 - Aircraft fleet and average age on December 31, 2022, data source: (Air Canada, 2023b)

	<b>Aircraft Type</b>	<b>Seats</b>	<b>Owned</b>	<b>Leased</b>	<b>Total</b>	<b>Average Age in Years</b>
<b>Air Canada</b>						
<b>Wide-Body Aircraft</b>	Boeing 777-300ER	419	10	8	18	12,6
	Boeing 777-200LR	300	4	2	6	15,4
	Boeing 787-8	255	8	-	8	8,6
	Boeing 787-9	298	23	6	29	6,3
	Boeing 767-300 freighters	-	3	2	5	18
	Airbus A330-300	295	8	8	16	17,9
<b>Total Wide-body</b>		-	56	26	82	11,6
<b>Narrow-Body Aircraft</b>	Boeing 737 MAX 8	169	31	9	40	3,3
	Airbus A321	190	5	10	15	20
	Airbus A320	142	10	8	18	26,3
	Airbus A319	83	5	-	5	25,5
	Airbus A220-300	137	32	-	32	1,8
<b>Total narrow-body aircraft</b>		-	83	27	110	9,9
<b>Total Mainline</b>		-	139	53	192	10,6

<b>Air Canada Rouge</b>						
<b>Narrow-Body Aircraft</b>	Airbus A321	197	4	10	14	7,6
	Airbus A320	168	-	5	5	15,7
	Airbus A319	136	17	3	20	24,8
<b>Total Air Canada Rouge</b>		-	21	18	39	17,5
<b>Total Mainline and Rouge</b>		-	160	71	231	11,8

Considering the operations and value proposition of Air Canada, the fleet must align with this strategic direction. Consequently, in alignment with the customer's proposition, it is imperative to ensure maximum diversification of the fleet to encompass all service types. From intercontinental flights, which require wide-body aircraft with high capacity and range, to narrow-body aircraft for short transcontinental flights. The fleet comprises both owned and leased aircraft, providing the company with the ability to manage its finances and adapt the fleet to market changes. For its part, the Group's low-cost airline uses older aircraft, except for the B737 MAX, for its short-haul operations.

The Group's regional airline, Air Canada Express, consists of the following aircraft: Embraer 175, Mitsubishi CRJ-200, Mitsubishi CRJ-900, and De Havilland Dash 8-400. The combined number of aircraft, including narrow-body jets and turboprops, amounts to 114 (Air Canada, 2023b).

New aircraft are planned to enter service, namely the B777 and B767 freighters, as well as the B787 and A220 (Air Canada, 2023b).

Air Canada operates from its main hubs in Toronto, Montreal, and Vancouver. It flies primarily to major airports on an FSNC basis. Most have lounges, either on their own or through partnerships (Air Canada, 2023a, 2023b).

Moreover, it is worth noting human resources, the majority of whom are unionised and subject to collectively bargained contracts. These include management and administrative support staff (5.355), pilots (3.552), crew members (8.022), sales agents, service, and flight dispatchers (4.853), and technical, ramp and cargo services (8.313). Thus, the focus is on an internal labour force rather than relying on external parties for labour acquisition (Air Canada, 2023a).

**3.5.2.7 Key Activities**

Air Canada's main activity, its core business, is passenger transportation, with a very significant component in cargo transportation. The company has a dedicated fleet solely for cargo transportation, which generates a substantial amount of revenue.

Air Canada operates 945 daily flights to 185 destinations. The company's geographic coverage spans globally, with particular emphasis on the Canadian and North American markets. Among the routes for flights, there are variations between regional, domestic, and international, with some connecting the Americas while others reaching Asia, Oceania, and Europe. The network structure is based on hub-to-hub and hub-and-spoke coverage, as is the low-cost airline. The latter is driven by passengers at the main Canadian hubs. It serves 46 US destinations and carries more passengers between the two countries than any other airline (Air Canada, 2023a).

The percentage of operating revenues derived from each market is shown in Table 3.18.

Table 3.18 - Percentage of passenger revenue for each market, data source: (Air Canada, 2023a)

<b>2022</b>	
<b>Domestic</b>	31%
<b>US transborder</b>	21%
<b>International</b>	48%

The primary focus of Air Canada's Cargo Division is the transportation of sensitive business-to-business goods, providing personalised solutions for customers through the implementation of dynamic pricing strategies and technology-driven solutions. It operates in 50 countries with hubs in Montreal, Toronto, Vancouver, Chicago, London, and Frankfurt. The division can also use passenger aircraft to carry some cargo to even more destinations. In 2022, the airline operated over 3.600 cargo-only flights, moving 39 million kilograms of cargo, including 11 million kilograms of perishables such as fruits, vegetables, and fish (Air Canada, 2023a).

Finally, Air Canada performs most of its technical services in-house, so handling and maintenance services are performed by the organisation itself (Air Canada, 2023b, 2023a; Air Canada, 2023c).

### 3.5.2.8 Key Partnerships

The Air Canada group of companies includes the following subsidiaries: Touram Limited Partnership (doing business as Air Canada Vacations), a tour operator that develops, promotes, and distributes travel packages; Air Canada Rouge, the company responsible for transporting leisure travellers; and Aeroplan, which operates Air Canada's FFP (Air Canada, 2023a, 2023b).

The regional carrier, Air Canada Express, is a brand operated on behalf of Jazz CPA, which is owned by Chorus Aviation Inc. (in which Air Canada has an ownership interest). In 2021, Air Canada and Chorus reached an agreement to make Jazz the exclusive operator of the regional fleet and to transfer the regional fleet still operated by Air Canada to Jazz (Air Canada, 2023a).

Air Canada also engages in collaboration through its membership in Star Alliance. The company was one of the founding members of the Star Alliance network, the largest airline alliance in the world, which currently includes 26 other companies. Through this collaboration, it is possible to combine each airline's different networks, airport lounges, check-in counters, ticketing systems and other related services. Air Canada has established code-share agreements with all member airlines of the alliance, thereby enabling the expansion of its network and providing passengers with the opportunity to reach multiple destinations on a single ticket (Air Canada, 2023a).

The alliances also extend to specific carriers on particular routes. For example, the A++ alliance is a partnership on transatlantic flights with United Airlines and the Lufthansa Group that allows revenue sharing in this market so that prices and schedules are coordinated among the participants, giving passengers greater choice. These agreements are subject to the laws imposed by the competition authorities in each country where the agreement is in effect. In addition, alliances of this type exist on cross-border routes between Canada and the United States with United Airlines and on routes between China and Canada with Air China (Air Canada, 2023a).

Besides the Star Alliance, Air Canada has code-share agreements with 14 other non-member carriers: "Aer Lingus, Air Dolomiti, Azul Linhas Aéreas Brasileiras, Cathay Pacific, Central Mountain Air, Emirates, Etihad Airways, Eurowings, Eurowings Discover, GOL Linhas Aereas Inteligentes, Middle East Airlines, Sri Lankan Airlines, Virgin Australia, and Vistara" (Air Canada, 2023a, p. 9).

There are other cooperative agreements to develop technology for Air Canada. These include an agreement with Heart Aerospace of Sweden, in which Air Canada has an equity interest, to purchase electric aircraft (Air Canada, 2023a).

Aeroplan serves as FFP and serves as a significant avenue for collaboration with partners across multiple industries, particularly within the travel sector. Notably, partnerships extend beyond the travel sector and include notable companies like Uber and Starbucks (Air Canada, 2023a).

**3.5.2.9 Cost structure**

Air Canada's major operating expense items are shown in Table 3.19 below.

Table 3.19 - Significant operating expenses in 2022, data source: (Air Canada, 2023b)

<b>2022 (in millions of Canadian dollars)</b>	
<b>Aircraft fuel</b>	5,276
<b>Salaries, wages, and benefits</b>	3,260
<b>Depreciation and amortisation</b>	1,640
<b>Airport and navigation fees</b>	1,213
<b>Sales and distribution costs</b>	797
<b>Capacity purchase fees</b>	763
<b>Aircraft maintenance</b>	706
<b>Ground package costs</b>	474
<b>Communications and information technology</b>	468
<b>Catering and onboard services</b>	425
<b>Impairment of assets</b>	4
<b>Total operating expenses</b>	16,743

Once again, fuel represents the largest portion of an airline's costs. Here, it is necessary to look beyond the volatility of the price of crude oil on international markets, the cost of storage and the duration of contracts with suppliers. Air Canada, being a multinational airline operating across multiple international locations, is susceptible to contractual prices in those regions and is required to adapt its pricing strategy in response to fluctuations in the exchange rate of the Canadian dollar (Air Canada, 2023b).

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Conversely, one must consider the considerable importance of depreciation and amortisation due to aircraft ownership instead of leasing. The global presence of Air Canada, spanning over 85 airports, influences the expenses incurred for slots and airport taxes (Air Canada, 2023b).

The main operating cost statistics are shown in Table 3.20.

Table 3.20 - Statistical operating expenses as of December 31, 2022, data source: (Air Canada, 2023b)

Per ASM		2022 (in cents of Canadian dollars)
<b>CASM</b>		20,38
<b>Less the following component:</b>		
	Aircraft fuel	7,07
<b>CASMex</b>		13,21

### 3.5.2.10 Canvas

Finally, the information from Chapter 3.5.2 is summarised using the Business Model Canvas in Figure 3.12.

Business Model Canvas				
Key Partners	Key Activities	Value Propositions	Customer Relationships	Customer Segments
Multiple subsidiaries: Air Canada Vacations, Air Canada Rouge, Aeroplan Partnership with Jazz CPA to perform regional flights Star Alliance with code-share agreement Codeshare agreements with other airlines Alliances with revenue sharing with other airlines in strategic markets Technological partnerships for innovation Aeroplan (FFP)	Core Business: Passenger transport and cargo transport Hub-to-hub and hub-and-spoke network Regional, Domestic, US transborder and International routes  <b>Key Resources</b> Narrowbody fleet: B737, A320 family, A220 (main carrier); A320 family (low-cost carrier) Widebody fleet: B777, B787, A330 (main carrier) Regional Fleet Main Hubs in Toronto, Montréal, and Vancouver Strong Human Resources	945 daily flights to 185 destinations, in 6 continents Strong global network Offer From regional flights to international and intercontinental flights. Member of Star Alliance Three different classes onboard (Premium, Premium Economy, Business) FFP (Aeroplan) Low-Cost subsidiary (Air Canada Rouge) “Safety First, Always” (strong bet on safety)	FFP: Aeroplan Multi-tier status program with Aeroplan Credit Card from Aeroplan Flight Pass  <b>Channels</b> Direct to customer: website, Aeroplan website, mobile app, Air Canada Vacations (own travel agency), website to small and medium business clients Third parties: contact centres, travel agencies (online and physical) Air Canada API (for enterprise customers)	All kind of clients Leisure Clients with Air Canada Rouge and Air Canada Vacations Business Clients Various classes (from economy to business class) Business to Business segment (with cargo transportation)
<b>Cost Structure</b> Aircraft Fuel Non-Fuel Operating Expenses (Aircraft fuel; Salaries, wages and benefits; Depreciation and amortization; Airport and navigation fees; Sales and distribution costs; Capacity purchase fees; Aircraft maintenance; Ground package costs; Communications and information technology; Catering and onboard services; Impairment of assets) CASM=20,38 cent \$ (Canadian) CASMex=13,21 cent \$ (Canadian)		<b>Revenue Streams</b> Passenger Revenue Cargo Revenues Ancillaries RASM= 17,2 cent \$ (Canadian)		

Figure 3.12 - Air Canada Business Model Canvas

### 3.5.3 Flight Pass

#### 3.5.3.1 Key Activities

Air Canada's Flight Pass utilises the entire network, including those of its affiliates. As such, the structure of the Pass allows a passenger to travel within the network to the set of destinations included in each Flight Pass modality (Air Canada, 2023d).

The aim is therefore to cover the various customer segments and, as such, the network of destinations must be adapted to the specific needs of each customer. The routes covered by each Flight Pass modality are subject to this constraint (Air Canada, 2023d).

Flight Pass passengers travel on normal and scheduled Air Canada routes (Air Canada, 2023d). The goal is to adapt each Flight Pass modality to the value proposition of each route in its network.

#### 3.5.3.2 Value Proposition

The Air Canada Flight Pass is highly customisable and can be used according to the customer's needs, and the price is adjusted accordingly.

The basic principle is that travel credits are purchased at a fixed price and are not subject to the price change trends imposed by modern revenue management systems.

This purchase of credits is based on a subscription model, as described in Chapter 2.5, the "consumables model". With this model, customers have the option to replenish products periodically or at their convenience. The convenience of this modality lies in its ability to keep prices stable during the subscription period, while also allowing flexibility in seat reservations for flights.

The main customisation options are by customer segment, such as student, leisure, business and corporate, or by geographic coverage. In the latter case, customers can choose to travel regionally, hub-to-hub or internationally. Within these options, customers can also choose the class in which they want to travel and enjoy the benefits associated with this type of differentiation (Air Canada, 2023d).

It is therefore a highly customisable pass tailored to the specific needs of each client. Perfect for clients who consistently need to travel to predetermined locations.

Moreover, there are Flight Pass variants available that are specifically designed for unlimited travel on regional flights and to meet the requirements of small and medium-sized enterprises. They can be used by multiple travellers, subject to conditions. This model is part of the "all-you-can-eat library" model, which allows customers to travel as often as they like, subject to seat availability (Air Canada, 2023d).

Offerings vary depending on Air Canada's destination, whether it is a vacationer with the number of trips and attributes suitable for a leisure customer, or a student who needs regularity at a fixed price. They are generally valid for 12 months and can be extended for a fee (Air Canada, 2023d).

### 3.5.3.3 Channels

The flight pass can be purchased online or by travel agents through the website. In turn, the entire process of managing seat reservations can be done on the website or in the app (Air Canada, 2023d).

### 3.5.3.4 Customer relationship

The Flight Pass itself is a form of customer relationship, as it is an automated service that gives the customer greater benefits in accessing the product and service.

The Air Canada Flight Pass gives access to FFP, and Aeroplan, which allows the accumulation of points according to the distance travelled. These points can be rewarded according to the passenger's segmentation and choice of class. Purchasing credits for a particular class also gives access to the benefits of that class (Air Canada, 2023d).

Another benefit is the ability to use purchased flight credits on some code-share flights. There is also the chance to use the benefits of status miles and accumulate them as well (Air Canada, 2023d).

Depending on the customisation made, payment can be made in a single instalment or quarterly or monthly. On the other hand, Air Canada has a partnership with an online credit payment company that allows a single fare to be paid in instalments at no cost to the passenger (Air Canada, 2023d).

### 3.5.3.5 Customer Segments

Implementing a highly customisable Flight Pass strategy enables Air Canada to target the same customer segments, both with and without the Flight Pass. The strategy for the

Flight Pass is framed to cover all possible customer segments on the various routes served (Air Canada, 2023d).

First, there are the regular leisure travellers. There are weekend passes that can only be used on those days in the various destinations selected. This appeals to regular weekend travellers, who may also be business travellers. There are also passes for holiday destinations that can be customised by the number of travellers, destination, number of travel credits, and class segmentation (Air Canada, 2023d).

The choice of passes to serve a region, whether for tourism, industrial, or economic activity, is clear in the variety of options available. There are sections of the pass aimed at Canadian mining and power generation sites to cover their workers and their travel. There are regional, transcontinental, cross-border, intercity commuter, and international options. These are primarily for business travellers (Air Canada, 2023d). Within each modality, there is class segmentation.

#### 3.5.3.6 Pricing Strategy

Due to the high customisation of the product, the price is variable. It has the advantage that all flight taxes are included in the price. The primary benefit lies in the acquisition of flight credits at a fixed rate, unaffected by market fluctuations resulting from supply and demand. Payment can be a one-time, monthly, or quarterly fee (Air Canada, 2023d).

Price is based on class, geographic area, number of credits and number of travellers included in the Pass (Air Canada, 2023d).

#### 3.5.3.7 Flight Pass Canvas

Air Canada's Flight Pass Canvas is shown in Table 3.21, based on the statements described in Chapter 3.5.3.

Table 3.21 - Flight Pass Canvas for Air Canada

<b>Business Organisation</b>	<b>Product Architecture</b>		
<p><b>Key Activities</b></p> <p>Use of Air Canada and subsidiaries' network</p> <p>Multiple destinations according to the flight pass modality chosen</p>	<p><b>Value Proposition</b></p> <p>Highly customisable</p> <p>Buy travel credits at a fixed rate</p> <p>Consumables model with travel credits</p> <p>"All-you-can-eat" subscription model in some modalities.</p> <p>Multiple travellers with the same pass in some modalities</p>	<b>Customer Interface</b>	
		<p><b>Channels</b></p> <p>Online website and app</p> <p>Travel agents for buying the flight pass</p>	<p><b>Customer Segments</b></p> <p>Leisure and Business Clients</p> <p>Regional, domestic, commuter, and international clients</p>
		<p><b>Customer Relationship</b></p> <p>Automated service</p> <p>Cumulative with FFP</p> <p>Tier Status Miles can be used</p>	
<p><b>Pricing Strategy</b></p> <p>Varies according to the modality chosen.</p> <p>Fixed-rate travel credits</p> <p>According to the number of credits, travellers, and region prices can vary</p>			

### 3.5.3.8 Value Proposition Canvas

Based on the above, it is possible to create a Value Proposition Canvas to assess the value proposition and whether it can find its way into your customer segment. This canvas is shown in Figure 3.13.

## VALUE PROPOSITION CANVAS

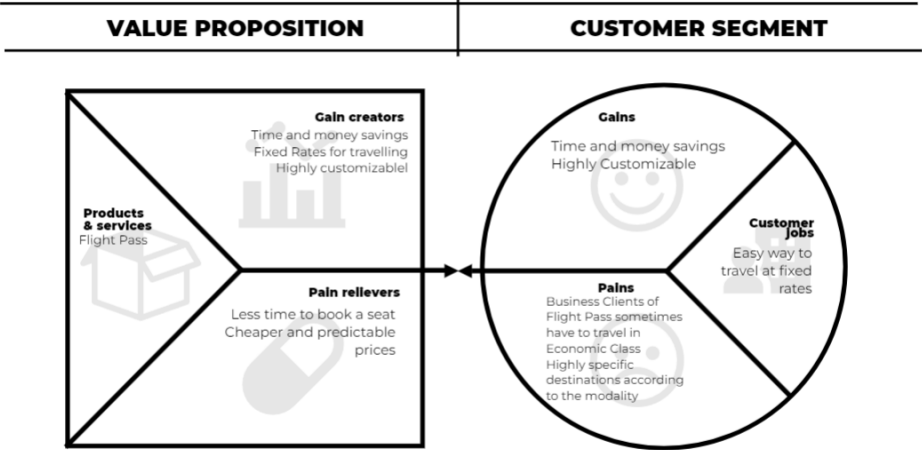


Figure 3.13 - Air Canada Flight Pass value proposition canvas

### 3.6 Case 4 - TAP Air Portugal

#### 3.6.1 Characterisation

TAP Air Portugal is the flagship airline of Portugal. Founded in 1945, it was originally named "Transportes Aéreos Portugueses". Its extensive network spans the globe, prioritising destinations in Africa and South America. It is a member of the Star Alliance (Wikipedia contributors, 2023f).

#### 3.6.2 Business Model Canvas

##### 3.6.2.1 Customer Segment

TAP Group's target customers are passengers and the business-to-business segment, through cargo transportation and aircraft maintenance (Transportes Aéreos Portugueses S.A., 2023a).

In the passenger segment, TAP covers all types of travellers, from leisure to business. As such, its route structure strikes a balance between leisure and business destinations (Transportes Aéreos Portugueses S.A., 2023a).

Initially, it focuses on the family demographic, emphasising on its website the opportunities and benefits of travelling as a family with the organisation. For the business segment, it offers deals for companies through the TAP Corporate program, which allows travel costs to be reduced through loyalty; another possibility is special

tickets for congresses, which allow flexible booking and discounted fares (Transportes Aéreos Portugueses S.A., 2023e).

TAP structures its fares to appeal to both leisure and business customers, favouring business customers by offering better seats with benefits such as flexible booking, in-flight meals, access to lounges and checked baggage. Conversely, in the economy segment, it endeavours to target diverse price sensitivities by correlating ancillaries and advantages with each of its fares. This allows customers to choose the fare that best suits their needs and appeals to all passenger segments (Transportes Aéreos Portugueses S.A., 2023e).

In the business-to-business segment, cargo, and mail are operated together on passenger-carrying aircraft and two dedicated aircraft (Transportes Aéreos Portugueses S.A., 2023a). This segment is dedicated to the transportation of temperature-sensitive cargo, pharmaceuticals, perishables, mail, valuable and dangerous cargo, and animals (Transportes Aéreos Portugueses S.A., 2023d).

Finally, the Maintenance segment maintains TAP's aircraft and those of other companies. It provides airframe maintenance, engine repair and overhaul, continuing airworthiness management and engineering services (Transportes Aéreos Portugueses S.A., 2023f).

### 3.6.2.2 Value Proposition

TAP connects over 80 destinations worldwide. A total of 47 in Europe to 21 countries, 14 in Africa to 10 countries, 1 in the Middle East to 1 country and 21 in the Americas to 5 countries (Transportes Aéreos Portugueses S.A., 2023e). It is therefore a global network that serves as a bridge between Europe, Africa, and the Americas. The value proposition of TAP is built on the strength of its network, and its core strategy revolves around fortifying the capabilities of destinations across these three continents, focusing on leisure travellers (Transportes Aéreos Portugueses S.A., 2023a).

Figure 3.14 shows TAP's network, especially its hub, whose purpose is to redirect passengers between Europe, Africa, and America.



Figure 3.14 - Network of TAP Air Portugal, adapted from (FlightConnections, 2023)

TAP's value proposition is also based on passenger segmentation to reach as numerous customers as possible. Consequently, they focus on differentiating between classes and services/ancillaries included in the ticket. This can range from an economy class ticket with only one piece of unchecked carry-on baggage to a business class seat with the ability to change reservations without penalty, checked baggage, lounge access, priority boarding, priority check-in, in-flight meals, and award miles (Transportes Aéreos Portugueses S.A., 2023e).

The company is committed to the continuous renewal of its fleet. This aspect is included in its value proposition due to the fleet's enhanced fuel efficiency, which can be appealing to environmentally conscious customers (Transportes Aéreos Portugueses S.A., 2023c). It also means increased safety, comfort, and passenger satisfaction through quieter and less polluting engines (Transportes Aéreos Portugueses S.A., 2023b).

### 3.6.2.3 Channels

TAP's main distribution channels can be divided into (Transportes Aéreos Portugueses S.A., 2023b, 2023c, 2023e):

- Direct sales: which includes sales through the website, contact centre, mobile application and, for business customers, through platforms created for this purpose (TAP Corporate);
- Indirect sales: sales through travel agents, tour operators, and other companies (through code-share agreements).

One of the company's strategies is to develop marketing policies to attract and retain customers, whether through advertising, loyalty programs (such as TAP Miles and Go, an FFP) or events. This enables the brand to establish a favourable position among customers. Newsletters, a substantial presence at trade shows and events, as well as effective utilisation of social media platforms, are employed (Transportes Aéreos Portugueses S.A., 2023b).

TAP has contact lines and forms on the website to make the customer experience easier before, during and after the sale (Transportes Aéreos Portugueses S.A., 2023e).

#### 3.6.2.4 Customer Relationship

The most important long-term relationship with customers is the FFP "Miles and Go". Miles are earned based on the customer's history and the fare paid. Miles in the TAP group are usually valid for 3 years (Transportes Aéreos Portugueses S.A., 2023c).

The TAP program offers the opportunity to accumulate miles on all flights and fares, with each fare category granting a unique mileage bonus. In addition to accruing miles with the airline directly, it is also possible to earn miles with Star Alliance member airlines and other affiliated partners (Transportes Aéreos Portugueses S.A., 2023e).

The TAP credit card offers the opportunity to accumulate miles, with three distinct cards each offering unique advantages. However, the common feature among all cards is the ability to earn miles through purchases at partner establishments and other retail outlets. This type of card also gives access to TAP lounges and priority boarding (Transportes Aéreos Portugueses S.A., 2023e).

Another type of operation available is the ability to extend validity, convert and transfer miles at a cost. Through the utilisation of FFP benefits, one can potentially upgrade, buy associated flight services (ancillaries), convert for travel, make merchandising purchases, and donate miles to charitable movements/institutions (Transportes Aéreos Portugueses S.A., 2023e).

Segmentation of users is present within FFP. Status levels range from 5.000 to 125.000 miles. This gives access to a variety of benefits, including priority check-in and boarding, lounge access, complimentary checked baggage, seat reservation, free on-board Wi-Fi, free upgrades, and mileage bonuses (Transportes Aéreos Portugueses S.A., 2023e).

Finally, the TAP Flight Pass is a form of automated service. It makes it possible to purchase package tours with more competitive prices and benefits. The Flight Pass will be analysed later (Transportes Aéreos Portugueses S.A., 2023e).

Following its self-governance standards, TAP is dedicated to assessing customer satisfaction using suitable metrics. Consequently, it conducts satisfaction studies with samples of customers and generalised online surveys. This concern is part of the company's strategy (Transportes Aéreos Portugueses S.A., 2023b).

**3.6.2.5 Revenue Streams**

Given the diversity of the segments covered by the TAP Group, the main sources of operating income are as follows in Table 3.22.

Table 3.22 - Key operating revenue figures, data source: (Transportes Aéreos Portugueses S.A., 2023a)

<b>2022 (in millions of euros)</b>	
<b>Passenger</b>	3.072
<b>Maintenance</b>	132
<b>Cargo and Mail</b>	258
<b>Other</b>	22
<b>Total</b>	3.485

The value proposition is therefore compatible with the revenue structure. First, the predominance of the passenger segment drives most of the company's operating results. After all, passenger transportation is the company's core business.

The passenger segment can be analysed by region to evaluate the value proposition of functioning as a connecting point between the European, American, and African continents through the Lisbon hub. Transportation on the European continent accounted for the largest share, with 1.000 million euros. This was followed by the South American market with 876 million euros, the North American market with 557 million euros and the African market with 360 million euros. This indicates that the company's value proposition is upheld through its main revenue stream, which is passenger transport between the three continents. Also noteworthy is the importance of freight transportation to North and South America, with 135 million euros and 65 million euros

respectively, like domestic passenger transportation (Transportes Aéreos Portugueses S.A., 2023a).

Finally, the main revenue statistics are presented in Table 3.23. This table uses the terminology PRASK, which represents only passenger revenue per ASK, similar to RASK due to the strong operating revenue components of the business-to-business segment.

Table 3.23 - Main revenue figures of TAP Air Portugal, data source: (Transportes Aéreos Portugueses S.A., 2023a)

<b>RPK</b>	36.782 million
<b>ASK</b>	45.960 million
<b>Load Factor</b>	80%
<b>PRASK</b>	6,68 cents €

### 3.6.2.6 Key Resources

Next, Table 3.24 shows, for the year 2022, the Group's fleet and its characteristics.

Table 3.24 - Aircraft fleet and average age on December 31, 2022, data source: (TAP Air Portugal, 2023b; TAP AIR PORTUGAL FLEET DETAILS, 2023; Transportes Aéreos Portugueses S.A., 2023a).

<b>Aircraft Type</b>	<b>Seats</b>	<b>Owned</b>	<b>Leased</b>	<b>Total</b>	<b>Average Age in Years</b>
<b>TAP Air Portugal</b>					
Airbus A330neo	298	-	19	19	4,6
Airbus A330ceo	263/269	-	3	3	15,7
<b>Total Wide-body</b>	-	-	22	22	6,1
Airbus A321neo	168/216	-	11	11	3,6
Airbus A320neo	174	-	11	11	3,7
Airbus A321ceo	216	-	3	3	21,9
Airbus A320ceo	174	-	15	15	18
Airbus A319ceo	144	-	5	5	23
Embraer 190	106	-	10	10	12,8
Embraer 195	118	-	6	6	12,6
<b>Total narrow-body aircraft</b>	-	-	71	71	7,47
<b>Total</b>	-	-	93	93	9,6

TAP utilises a primarily narrow-body fleet, employing wide-body aircraft for extended routes. It is worth mentioning the utilisation of the A321 neo-LR on select transatlantic routes, which facilitates cost savings and enhances the aircraft's load factor. The fleet is relatively recent and primarily comprises highly efficient aircraft, resulting in reduced fuel consumption and emissions, and ultimately a more sustainable value proposition. The fleet is compatible with short-haul, continental, and domestic flights. From the Lisbon hub, these passengers can be transferred to connecting flights to Africa and the Americas. Wide-body aircraft can be used in these cases, or narrow-body aircraft when possible and demand justifies it (Transportes Aéreos Portugueses S.A., 2023a).

TAP flies mainly to the main airports, in line with its FSNC typology. It operates mainly from its Lisboa hub, with some flights from its Porto base (Transportes Aéreos Portugueses S.A., 2023e).

Finally, there are the company's human resources. TAP has over 7.100 employees in its various business areas. The following departments stand out: 2.651 flight attendants, 1.438 maintenance and technical staff, 1.516 ground staff and 11.227 flight technical staff; besides the human resources in the representations, distributed in the different countries where TAP operates (Transportes Aéreos Portugueses S.A., 2023a).

### 3.6.2.7 Key Activities

While passenger transportation remains TAP's primary focus, the company also operates in the fields of mail, cargo, engineering, and maintenance.

In the summer of 2022, TAP had over 1.250 weekly flights. With routes based on a hub-and-spoke model. Moreover, a hub-to-hub route model is employed for the air bridge that links Lisbon and Porto. Once again, the company's value proposition lies in its Lisbon hub, so the hub-and-spoke model is of paramount importance, providing geographical coverage between Europe, Africa, and the Americas. Considering the importance of the South American market for the company's competitive edge, it is essential to concentrate efforts on Brazil. Therefore, the strategy is to offer high frequencies to this country, either with narrow-bodies or wide-bodies (Transportes Aéreos Portugueses S.A., 2023b). Additionally, it is important to note the existence of the Portugal Stopover Program. This program permits passengers who have layovers in Lisboa or Porto to extend their stay in these cities for a maximum of 10 days without incurring any additional expenses. This initiative serves to reinforce the connectivity

between Europe, the Americas, and Africa (Transportes Aéreos Portugueses S.A., 2023e).

In 2022, 13,7 million passengers were transported to over 80 destinations around the world (Transportes Aéreos Portugueses S.A., 2023a).

It is also important to mention the maintenance and engineering activities conducted for TAP itself and other companies. This activity is currently suffering from labour shortages and supply chain disruptions. In addition, Lisboa Airport is constrained by congestion. These same constraints affect both passenger and cargo activities. Finally, it should be mentioned that TAP Maintenance is a CAMO organisation, so it is part of the strategy to retain human resources to further develop the maintenance side of the business (Transportes Aéreos Portugueses S.A., 2023a).

In the cargo business, the main challenges are the optimisation of the transportation network and yield management. In 2022, TAP started to use an A330-200 passenger aircraft exclusively for cargo flights. A total of 109 flights to 22 different destinations were operated in 2022 (Transportes Aéreos Portugueses S.A., 2023a).

#### 3.6.2.8 Key Partnerships

TAP has been a member of the Star Alliance since 2005. This allows integration into a network of airlines through digital services, FFP, among others. Code-share agreements are also possible through this alliance. Other carriers like Emirates or SATA, not in Star Alliance, can also be included. It is also possible to earn and redeem miles through this alliance, both with TAP and with other airlines. There are also FFP partners such as credit card issuing banks, hotels, car rentals, and restaurants (Transportes Aéreos Portugueses S.A., 2023e).

TAP has partnerships with IATA for safety improvements, including IOSA standards and guidance materials, as well as joint identification of safety risks (Transportes Aéreos Portugueses S.A., 2023b).

Finally, it is worth mentioning the structure of the Group. First, the group is wholly owned by the Portuguese Republic. TAP SGPS owns handling, catering and Portugália companies. TAP Air Portugal has established collaborative relationships with all these companies (Transportes Aéreos Portugueses S.A., 2023e).

### 3.6.2.9 Cost structure

Table 3.25 shows the main operating costs of the TAP, S.A. Group.

Table 3.25 - Significant operating expenses in 2022, data source: (Transportes Aéreos Portugueses S.A., 2023a)

	<b>2022 (in millions of euros)</b>
<b>Aircraft fuel</b>	1.096,7
<b>Traffic operating costs</b>	699,1
<b>Employee costs</b>	416,7
<b>Aircraft maintenance costs</b>	33,4
<b>Costs of materials consumed</b>	101,9
<b>Commercial, communication, and marketing costs</b>	181
<b>Impairment losses in inventories, receivables, and provisions</b>	56,1
<b>Other operating expenses</b>	141,9
<b>Depreciation, amortisation, and impairment losses</b>	509,5
<b>Total operating expenses</b>	3.216,8

Fuel is the most significant operating cost and is subject to price fluctuations in the international market. In this particular instance, the cost of carbon dioxide emission licenses is incorporated into the fuel cost. Traffic operating costs include all services related to passenger handling, navigation fees, airport taxes, operational irregularities, airport facilities costs, baggage, mail and cargo handling, air traffic control costs, stopover program costs, business passenger costs, and charter flights. Additionally, it is important to mention that commercial and advertising expenses encompass payments made for travel agency commissions, booking fees, and advertising. It is important to note the item "Depreciation and amortisation", which includes the depreciation of basic equipment such as aircraft, which represents a significant expense due to the expansion of the fleet under lease agreements. These leases are recorded in the financial statements as the depreciation of leased assets (Transportes Aéreos Portugueses S.A., 2023a).

Finally, the operating statistics related to the cost structure are displayed in Table 3.26.

## New Business Models in Aviation - Subscription-Based Aviation applied to the 2030 World Cup

Table 3.26 - Statistical operating expenses as of December 31, 2022, data source: (Transportes Aéreos Portugueses S.A., 2023a)

Per ASK		2022 (in cents of euro)
<b>CASK</b>		7,04
<b>Less the following component:</b>		
	Aircraft fuel	2,38
<b>CASKex</b>		4,66

### 3.6.2.10 Canvas

Finally, the statements in Section 3.6.2 are summarised using the Business Model Canvas in Figure 3.15.

Business Model Canvas				
Key Partners	Key Activities	Value Propositions	Customer Relationships	Customer Segments
Star Alliance Code-share agreements FFP partners Other subsidiaries of TAP SGPS (Portugália, handling, and catering)	Core Business: Passenger transport; cargo transport; maintenance and engineering Hub-and-spoke model and some transatlantic routes with narrowbody planes. High frequency routes across the Atlantic CAMO operator Diversified cargo transport	80 destinations around the world Strong presence in Europe, America (specially in Brazil) and Africa Strong network with Hub in Lisbon Connections between Europe, America and Africa New fleet, environmentally friendly	FFP: TAP Miles and Go FFP available to other companies within the alliance Tier FFP Flight Pass	All kind of clients Leisure Clients Business Clients Corporate Clients Various classes (from economy to executive class) Business to Business segment (with cargo transportation and maintenance division)
	<b>Key Resources</b>  Narrowbody fleet: A320 family (neo and ceo), Embraer 190 and 195 Widebody fleet: A330 family (neo and ceo) Lisboa Hub Human Resources		<b>Channels</b>  Direct to customer: website, contact centre, and for corporate clients a special platform. Third Party: travel agencies and other air operators TAP Miles and Go as marketing tool	
<b>Cost Structure</b>  Aircraft Fuel Non-Fuel Operating Expenses (Aircraft fuel; Traffic operating costs; Employee costs; Aircraft maintenance costs; Costs of materials consumed; Commercial, communication and marketing costs; Impairment losses in inventories, receiv. and provisions; Other operating expenses; Depreciation amortisation and impairment losses) CASK= 7,04 cent € CASKex=4,66 cent €		<b>Revenue Streams</b>  Passenger Revenue (with strong importance to the Lisbon Hub) Maintenance Revenue Cargo Revenues Ancillaries PRASK= 6,68 cent €		

Figure 3.15 - TAP Air Portugal Business Model Canvas

### 3.6.3 Flight Pass

#### 3.6.3.1 Key Activities

The TAP Flight Pass partially uses its network. As such, due to the structure of the Pass, a passenger can travel within the network, in the set of destinations that each Flight Pass modality includes (TAP Air Portugal, 2023).

These destinations are part of TAP's regular and scheduled operations. It includes all direct flights within Portugal and between Portugal and over 50 destinations in Europe and North Africa (Transportes Aéreos Portugueses S.A., 2023e).

#### 3.6.3.2 Value Proposition

The primary benefit of the TAP Flight Pass lies in its personalised features, enabling travellers to select multiple destinations at fixed prices.

The following can be customised: the class, the destination (or all of them), the number of passengers, the number of trips (from 4 to unlimited), the duration and departure date, the fare type (which affects the ancillary services included), how early to book the seat (from 60 days to 4 hours before the flight), and whether taxes and fees are included (TAP Air Portugal, 2023).

By using fixed fares for each flight, this type of product can deliver average savings of up to 40 per cent to the passenger, according to the company. This allows customers to travel at a fixed price without being subject to price fluctuations dictated by the revenue management system (TAP Air Portugal, 2023).

It is therefore a subscription model, specifically the "consumables" model, where the number of trips is exchanged according to a pre-agreed tariff. With unlimited trips, there is the "all-you-can-eat library" model, as described in Chapter 2.5, where it is possible to get an unlimited number of trips to specific destinations, to be used at the customer's discretion.

The validity of the flight pass can vary from 1 month to 2 years (TAP Air Portugal, 2023).

#### 3.6.3.3 Channels

The pass can be purchased online, and travel is booked via the same route (TAP Air Portugal, 2023; Transportes Aéreos Portugueses S.A., 2023e).

#### 3.6.3.4 Customer relationship

The flight pass itself is a form of customer relationship, as it is an automated service that gives the customer greater benefits in accessing the product and service.

The TAP Flight Pass provides the opportunity to experience the advantages of the FFP. It is possible to earn miles according to the fare purchased when personalising the Flight Pass (TAP Air Portugal, 2023).

Renewal of the flight pass depends on the customer's action to purchase the product again.

#### 3.6.3.5 Customer Segments

The strategy of a highly customisable Flight Pass allows TAP to reach the same customer segments with a Flight Pass as without one. The Flight Pass strategy covers all customer segments on the different routes it serves (TAP Air Portugal, 2023).

It should be highlighted that leisure customers can select from an array of destinations that align with their individual travel preferences. Multiple passengers can be included on the same flight pass, making it ideal for families (TAP Air Portugal, 2023).

On the other hand, the most significant benefits are for commuter customers who travel regularly and can personalise the Flight Pass based on the destination pair and how far in advance they book. These customers may travel for business or leisure. In addition, business travellers who regularly travel to certain destinations may also be eligible for this program (TAP Air Portugal, 2023).

Within each Flight Pass, it is still possible to choose a class and a fare (with the inclusion of ancillaries), increasing passenger segmentation (TAP Air Portugal, 2023).

#### 3.6.3.6 Pricing Strategy

Due to high customisation, the price varies widely. Flight taxes may or may not be included. The value proposition is the ability to purchase trips at a fixed price, and on average, at a lower price than buying them individually.

Payment is made through a single fee. The price is determined by the class, geographical area, number of trips and number of travellers included (TAP Air Portugal, 2023).

3.6.3.7 Flight Pass Canvas

TAP's Flight Pass Canvas is shown in Table 3.27, derived from the statements in Section 3.6.3.

Table 3.27 - Flight Pass Canvas for TAP Air Portugal

Business Organisation	Product Architecture		
<p><b>Key Activities</b></p> <p>Use of European TAP network</p> <p>Multiple destinations according to the flight pass modality chosen</p>	<p><b>Value Proposition</b></p> <p>Highly customisable</p> <p>Buy trips at a fixed rate</p> <p>Consumables model with travel credits</p> <p>"All-you-can-eat" subscription model for unlimited travel modality</p> <p>Multiple travellers with the same pass in some modalities</p>	Customer Interface	
		<p><b>Channels</b></p> <p>Online website and app</p>	<p><b>Customer Segments</b></p> <p>Leisure and Business Clients</p> <p>Regional, domestic, commuter, and international clients</p>
		<p><b>Customer Relationship</b></p> <p>Automated service</p> <p>Cumulative with FFP</p>	
<p><b>Pricing Strategy</b></p> <p>Varies according to the modality selected.</p> <p>Fixed rates</p> <p>Prices may vary based on the number of credits, travellers, and region.</p>			

3.6.3.8 Value Proposition Canvas

Based on the data described above, it is possible to create a value proposition canvas to assess the value proposition and whether it can find its way into the customer segment. This canvas is shown in Figure 3.16.

## VALUE PROPOSITION CANVAS

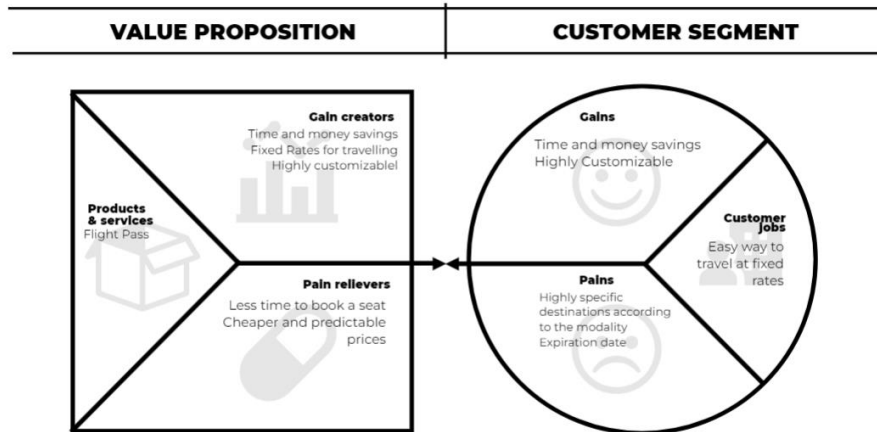


Figure 3.16 - TAP Flight Pass value proposition canvas

### 3.7 Case 5- Ryanair

#### 3.7.1 Characterisation

Ryanair Holdings Plc is a group of low-cost airlines based in Ireland. It includes Ryanair DAC, Malta Air, Buzz, Lauda Europe, and Ryanair UK. It expanded rapidly in the wake of European deregulation in the 90s (Wikipedia contributors, 2023e).

#### 3.7.2 Business Model Canvas

##### 3.7.2.1 Customer Segment

Ryanair's main customer segment is price-sensitive customers. Whether they are a leisure or business, customer. The aim is to target customer segments who do not consider travelling or prefer alternative modes of transportation (Ryanair Group, 2023b).

Through the implementation of a unified fare system devoid of any class distinctions, the aim is to provide the most affordable fare possible to appeal to passengers across all segments, focusing on those who prioritise price sensitivity. This includes families and vacationers for whom the mode of travel is not the most important consideration. By operating within the European Union and for customers in the Schengen area, there are benefits in terms of ease of travel and it is therefore possible to encourage tourists to travel between countries (Ryanair Group, 2023b, 2023c).

Another segment is the more price-sensitive business traveller. The point-to-point route system is highly appealing as it facilitates connections between destination pairs that would otherwise require a hub of an FNSC airline. Connections are costly in terms of time, especially within Europe, where distances are short. The value of the route system applies to leisure customers (Ryanair Group, 2023b).

### 3.7.2.2 Value Proposition

Ryanair's key value proposition is its low-fare system. Designed to stimulate demand from price-sensitive leisure and business customers alike (Ryanair Group, 2023b).

Ryanair has a network of over 200 destinations in 34 countries. The system follows a point-to-point route system, allowing for efficient and direct transportation between specific points. Figure 3.17 shows the Ryanair network, which covers the European continent, some destinations in North Africa and the Middle East (Ryanair Group, 2023c).

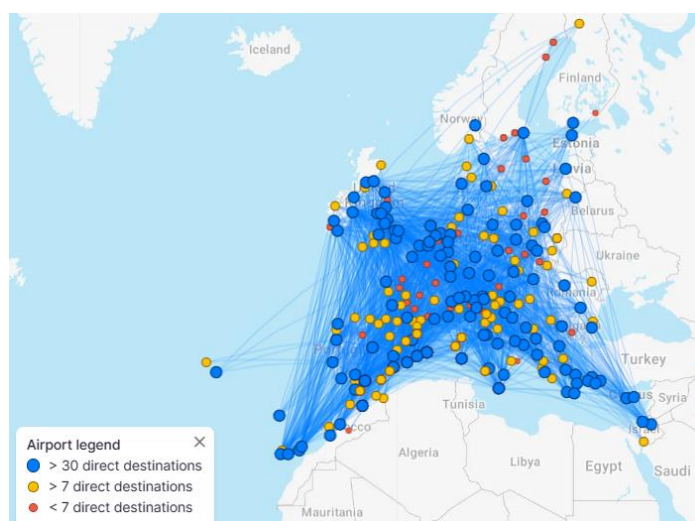


Figure 3.17 - Ryanair network, adapted from (FlightConnections, 2023)

To offer the lowest possible fare, Ryanair does not include ancillary services at the ticket price. Carry-on baggage, checked baggage, priority access, seat reservations, and meals on board must be purchased separately. Online check-in is required to avoid incurring separate charges for airport check-in. To enhance the product's appeal, Ryanair provides the option of bundling different ancillary services, resulting in a more favourable price for customers compared to purchasing them individually (Ryanair Group, 2023c).

The company consistently includes safety as a key component of its value proposition in its reports to investors. This is expressed through a focus on accident prevention, through the documentation of the Safety Management System, which promotes a culture of safety within the company. This factor is therefore decisive in the proposal presented to the customer (Ryanair Group, 2023b).

Another determinant is having higher on-time performance than its competitors (excluding factors external to the company) and having lower lost baggage indicators. Thus, the consumer may prefer the company because of these factors, thus integrating one of the value proposition factors (Ryanair Group, 2023b).

Finally, the ongoing fleet replacement program is aimed at making the fleet more efficient and thus reducing CO<sub>2</sub> emissions compared to European FSNCs (Ryanair Group, 2023b).

### 3.7.2.3 Channels

Unlike most of the market, which has partnerships with travel agencies, Ryanair requires its customers to book and purchase tickets on its website. Customers also have the option of using the mobile app. As a result, the company does not rely on third-party agents to contact customers at the time of booking (Ryanair Group, 2023b).

However, it should be noted that the booking system is based on the Global Distribution System (GDS). Therefore, it has partnerships with several companies that have these systems, which means that the company pays transaction fees based on the number of seats sold through the system (Ryanair Group, 2023b).

The value proposition based on low fares is the foundation of the brand's marketing strategy. To reach customers through awareness channels, campaigns are developed in partnership with Ryanair by collaborating with local tourism organisations. There is also a focus on direct interaction with consumers on social networks (Ryanair Group, 2023b).

### 3.7.2.4 Customer Relationship

Due to its low-cost nature, Ryanair does not have any form of long-term relationship, either through loyalty programs or automated services. Therefore, it does not have FFP.

The customer relationship is based solely on the value proposition. In other words, customer relationships are those that are explicit in the value proposition, such as low

fares. It is, therefore, possible to establish the relationship based on the inherent attractiveness of the designated business model, without a loyalty or benefits program.

Finally, there is the commitment to improve and monitor the customer. Ryanair gathers information through satisfaction surveys and market analysis, which, together with other metrics, allows it to calculate a customer satisfaction index. This index must be continuously improved and customer relations must be integrated into the company's strategy (Ryanair Group, 2023a).

**3.7.2.5 Revenue Streams**

The revenue of the Ryanair Group is essentially divided into two categories: ticket sales and ancillary revenue. The former is directly related to the price of the flight and includes baggage fees and reservation changes. Scheduled revenue, as it is called in the financial statements, represents revenue that has not been collected. It is treated as a liability until the service is provided, after which it is recognised as revenue. The second, ancillary revenue, includes the services that the passenger purchases for his or her flight, such as priority boarding, seat reservations and in-flight sales (Ryanair Group, 2023b).

It is necessary to mention the revenues related to the sale of car rental services, hotels, insurance, transfers, and airport parking provided by third parties and sold through the Ryanair website (Ryanair Group, 2023b).

The following table, Table 3.28, shows the breakdown of Ryanair's revenues.

Table 3.28 - Key Operating Revenue Figures, data source: (Ryanair Holdings plc, 2023)

<b>(in millions of euros)</b>	<b>The fiscal year ended March 31, 2023</b>
<b>Scheduled Revenues</b>	6.930,3
<b>Ancillary Revenues</b>	3.844,9
<b>Total operating revenues</b>	10.775,2

Table 3.28 shows that ancillary revenues are an important part of the operating revenues, in line with the strategy of low-cost airlines, which sell ancillary services related to the flight as an important part of their revenues.

Key operating revenue statistics are shown in Table 3.29.

Table 3.29 - Main revenue figures of the Ryanair Group for the financial year ending March 31, 2023, data source: (Ryanair Holdings plc, 2023)

<b>RPM</b>	129.000 million
<b>ASM</b>	138.000 million
<b>Load Factor</b>	93%
<b>RASM</b>	7,81 cent €

### 3.7.2.6 Key Resources

Table 3.30 shows the Group's fleet and its characteristics in December 2023.

Table 3.30 - Aircraft fleet and its average age as of December 1, 2023, data source: (Airfleets.net, 2023a; Planespotters.net, 2023; Ryanair Holdings plc, 2023)

<b>Aircraft Type</b>	<b>Seats</b>	<b>Owned</b>	<b>Leased</b>	<b>Total</b>	<b>Average Age in Years</b>
<b>Airbus A320-200</b>		-	28	28	16,6
<b>Boeing 737-800</b>	189	410	-	410	11,4
<b>Boeing 737-8200 (MAX 8)</b>	197	131	-	131	1,8
<b>Total</b>	-	542	28	570	9,5

As a low-cost airline, Ryanair develops its business model around a fleet of a single type of aircraft. This can be attributed to the economies of scale that are inherent in using a single aircraft type. Simplification of pilot and crew training, streamlining of maintenance procedures, and bulk purchasing are all key aspects to consider. Furthermore, it aligns with the strategy of point-to-point routes, which have a limited continental reach over a short distance.

Ryanair plans to grow its fleet to 640 narrow-body aircraft by 2026 with the new generation of Boeing MAX aircraft. This fleet is configured in a high-density seating configuration that allows for significant savings per passenger, especially in fuel and emissions (Ryanair Holdings plc, 2023).

As part of its low-cost strategy, it flies mainly to secondary airports and has 91 bases in Europe and North Africa. Ryanair consistently prioritises airports that offer the greatest economic benefits and facilitate seamless slot coordination (Ryanair Holdings plc, 2023).

Finally, the human resources of the Ryanair Group are presented: there are 125 managers, 1.028 administrative and IT technicians, 506 maintenance workers, 655 ramp operators, 6.582 pilots and 13.365 cabin crew members (Ryanair Holdings plc, 2023).

### 3.7.2.7 Key Activities

Ryanair's core business is passenger transportation. It also includes transportation at the lowest possible cost for both the company and the customer.

Ryanair has 91 bases in Europe and North Africa. With: More than 3.000 flights a day to 36 countries are operated by it. On average, it covers a distance of 766 miles and utilises its aircraft for approximately 9,4 hours per day. Additionally, there is an average allocation of 41 employees per aircraft (Ryanair Holdings plc, 2023).

It operates with great frequency on point-to-point and short-haul routes. The average flight time is 2,2 hours. This eliminates the need to connect passengers at a hub, further reducing costs (Ryanair Holdings plc, 2023).

Heavy maintenance is usually outsourced to third parties. However, Ryanair is a Part-145 EASA organisation, so it performs routine maintenance and repairs on its aircraft and has several facilities in Europe for this purpose (Ryanair Group, 2023b).

Finally, it should be noted that, apart from the markets of Poland, Portugal, and Spain, handling services are outsourced to third parties (Ryanair Holdings plc, 2023).

### 3.7.2.8 Key Partnerships

Due to its low-cost business model, Ryanair does not have any type of FFP, code-share agreement or alliance participation (Ryanair Holdings plc, 2023).

However, it is necessary to focus on the structure of the group. It is within the group that the most important relationships between companies are established. The Ryanair Group includes Ryanair Sun, Lauda Europe Limited, Malta Air Limited, Ryanair DAC, and Ryanair UK (Ryanair Group, 2023b).

Regarding Ryanair's competitive situation, the company is the largest passenger airline in several European countries. It has 91 bases throughout the continent and has a very strong presence in the UK, Italy, Spain, and Ireland (Ryanair Group, 2023b).

It is worth mentioning the crucial collaboration with Boeing for the delivery of innovative aircraft featuring high-density seating configurations. When considering this situation, it is of utmost importance to highlight the arrangement for the new MAX-10 and 737-8200 (MAX-8) aircraft. Worth mentioning are the contracts the company has secured with regional and secondary airports across Europe. These partnerships hold the potential to bring significant advantages to the company through the development of these aerodromes. There are also partnerships with fuel supply companies for the development and supply of SAF (Ryanair Holdings plc, 2023).

### 3.7.2.9 Cost structure

The Ryanair Group's main sources of operating costs are as shown in Table 3.31 below.

Table 3.31 - Significant Operating Expenses Year Ended March 31, 2023, data source: (Ryanair Holdings plc, 2023)

<b>2023 (in millions of euros)</b>	
<b>Fuel and Oil</b>	4.025,7
<b>Airport and handling charges</b>	1.240,5
<b>Staff costs</b>	1.191,4
<b>Depreciation</b>	923,2
<b>Route Charges</b>	903,7
<b>Marketing, distribution and other</b>	674,4
<b>Maintenance, materials, and repairs</b>	373,7
<b>Total operating expenses</b>	9.332,6

In a previous year (2022), fuel costs accounted for 43 per cent of operating expenses, and the ability to provide affordable fares to customers relies on the fluctuation of oil prices in global markets. While it is feasible to forecast market price trends to a certain degree, its influence on the company's revenue management systems is significant. It is crucial to acknowledge the significance of currency markets, as the purchase of crude oil is conducted in dollars, while Ryanair acquires jet fuel using euros. To effectively handle these fluctuations, the company enters into long-term contracts to buy jet fuel, resulting in a liability (Ryanair Holdings plc, 2023).

Due to the heightened utilisation and greater number of aircraft in service, the depreciation expense has become noteworthy (Ryanair Holdings plc, 2023).

Table 3.32 and Table 3.33 show the operating cost per passenger and the operating cost statistics.

Table 3.32 - Operating expenses as of March 31, 2023, per passenger, data source: (Ryanair Holdings plc, 2023)

<b>Per passenger</b>	<b>2023 (in euros)</b>
<b>Fuel and Oil</b>	23,88
<b>Airport and handling charges</b>	7,36
<b>Staff costs</b>	7,07
<b>Depreciation</b>	5,36
<b>Route Charges</b>	5,48
<b>Marketing, distribution and other</b>	4,00
<b>Maintenance, materials, and repairs</b>	2,22
<b>Total operating expenses</b>	55,37

Table 3.33 - Statistical Operating Expenses as of March 31, 2023, data source: (Ryanair Holdings plc, 2023)

<b>Per ASM</b>	<b>2023 (in cents of euro)</b>
<b>CASM</b>	6,76

**3.7.2.10 Canvas**

Finally, Section 3.7.2 is summarised in Figure 3.18 using the Business Model Canvas.

<b>Business Model Canvas</b>				
<b>Key Partners</b>	<b>Key Activities</b>	<b>Value Propositions</b>	<b>Customer Relationships</b>	<b>Customer Segments</b>
Group structure: Ryanair Sun, Lauda Europe, Malta Air, Ryanair DAC, Ryanair UK. All the 91 bases through Europe Boeing partnership to high density capacity planes	Core Business: Passenger transport 3000 daily flights for 36 countries 91 bases across Europe and North Africa Point-to-point network	Low-cost tariffs Point-to-point network Numerous European destinations Safety record High punctuality indexes Fleet in transition for a greener one	Customer service metrics for improving	Leisure and Business clients High price sensitive customers
	<b>Key Resources</b> Narrowbody fleet: A320 (Malta Air); B737 (737-800 and MAX 8) Secondary airports Human resources (pilots, cabin crew, ground handling; administrative technicians; maintenance staff)		<b>Channels</b> Direct to customer: website and app Agreements with local tourists' councils	
<b>Cost Structure</b> Aircraft Fuel Non-Fuel Operating Expenses (Airport and handling charges; Staff costs; Depreciation; Route Charges; Marketing, distribution and other; Maintenance, materials, and repairs) CASM= 6,76 cent €		<b>Revenue Streams</b> Passenger Revenue Ancillaries Revenue Third party revenues (hotel, rent-a-car, and insurance sales) RASM= 7,81 cent €		

Figure 3.18 - Ryanair Business Model Canvas

### 3.8 Results Analysis

The overall picture of this analysis shows that Flight Pass does not dominate the overall business of the companies studied.

Airlines operate on a spectrum between low-cost and full-service models, with a tendency to adopt innovations that allow them to reduce costs and optimise revenues.

Although Alaska Airlines has a full-service model with multiple classes ranging from first class to economy, it also has a single-model fleet besides the regional company models. This introduces business variables characteristic of a low-cost carrier. By positioning itself as a regional carrier with transcontinental routes between hubs, it can utilise a narrow-body fleet, resulting in lower costs in terms of operational efficiency. By committing to service innovation, it is able to lower fares for customers, thus making its value proposition more attractive. With the Flight Pass, it becomes possible to develop a commuter system that spans multiple states, but with a limited number of available routes. Despite introducing a subscription system that allows for monthly renewals and payments, the pass form solely facilitates the purchase of travel credits at fixed rates and obligates users to adhere to specific periods of permanence. This can create a barrier to entry for customers; although the monthly fee lowers the initial cost of purchasing the

trip, it requires the customer to commit to flying only the routes available during the defined period. Despite maintaining the subscription, it is not possible to condense these trips into a shorter timeframe. It is therefore a limited model with low coverage of customer segments. However, it is advantageous for the company, which receives a recurring and secure source of income. It is also worth mentioning the possibility of earning miles with this program, which is an additional loyalty mechanism for the company.

Frontier Airlines, for its part, presents a low-cost model designed to appeal to price-sensitive customers. This allows them to attract very regular travellers, increase customer loyalty to low fares or attract very price-sensitive customers. This loyalty is also the basis of the mileage program and the various subscription programs that the company has in place. The existence of loyalty makes it possible to increase total revenue even with lower revenue per mile flown. Customers return more often because of this loyalty model. The utilisation of subscription services incentivises customers to book flights with the company, as the frequency of usage directly correlates to increased savings. FFP integrates the subscription model with the advantages commonly linked to these initiatives, such as customer retention. It also offers a low-cost structure, using the same aircraft model for short- and medium-haul routes within the United States, using a multi-base route model to reach the greatest number of customers. It is therefore a model based on carrying the maximum number of customers and keeping them loyal to the company. This is accomplished using Flight Pass incentives, which are temporary promotions that allow unlimited travel under certain conditions. These incentives are designed to increase the load factor of each flight, allowing Frontier Airlines to increase the number of passengers on the flight in the 48 hours before departure when the number of bookings through the revenue management system is lower. This provides a fixed and anticipated revenue stream for a product that Frontier Airlines would likely not sell. While the customer may find the price appealing, the primary beneficiary of the Flight Pass is undoubtedly the company.

Air Canada serves as an exemplar within the FSNC spectrum. The organisation operates diverse businesses and aims to cater to a broad spectrum of customer segments. Its product is hyper-segmented to reach all price sensitivities and customer preferences. The route system has been strategically designed to maximise accessibility to various destinations, either through code-share agreements or alliances. Becoming a global carrier of both cargo and passengers is their top priority. With a larger offer, the system becomes more complex, requiring additional human resources and aircraft, including various families of aircraft. It is crucial to be present on all distribution channels and

multiple airports. Considering that passenger segmentation creates the need to satisfy passenger needs with various other services. Whether it is the high-end segment that travels in business class, with multiple lounges at the various hubs and ensuring that the alliance lounges meet the standards of that segment, or the more price-sensitive segment and leisure travellers who use the company to travel to their holiday destinations, there is a response from the Air Canada Rouge and Air Canada Vacations divisions. There is also a domestic and regional segment with another company, Air Canada Express. The cargo segment has its division with its aircraft and is part of the business-to-business segment. This segmentation and complexity imply a larger resource structure with much higher unit costs, which are offset by charges to customers depending on the structure. This makes the company less flexible to restructure and respond to market changes, yet Air Canada has a Flight Pass on its product list that is highly customisable but curated by the company itself. It offers a wide range of choices for a pre-purchased, fixed-price travel pass. It offers payment options and scheduling flexibility to reach multiple customer segments and best meet their needs. This enables Air Canada to attract customers to less popular routes by carefully curating the flight pass.

As far as TAP is concerned, it has a model that is close to the full-service model, with the peculiarity of choosing passengers and business-to-business as its segments. It also fragments its business model to reach as numerous customers as possible. In the passenger segment, TAP divides its passengers into several classes, with the inclusion of ancillaries, according to the fare paid and the revenue and yield management systems. Like Air Canada, it wants to reach all passenger segments in the same way, so it has a structure that has to support all of those segments. It has a global route structure focusing on Europe, the Americas, and Africa. The main value proposition is to establish a presence in these three continents and facilitate their connection through the Lisboa hub. This requires an infrastructure and resources capable of supporting the value proposition. Here, TAP has an entirely leased fleet, which allows for flexibility, more frequent renewals, and lower operating costs (due to technological innovations). Despite the use of wide-bodied aircraft on intercontinental routes, TAP is introducing the use of narrow-bodied aircraft on transatlantic routes as a novelty, which is a significant innovation in the market, as it allows for significant operational savings. As a case in point, it responds to routes necessitating a high frequency or those with lower demand (which would otherwise be unsuitable for wide-body aircraft), thereby facilitating the ability to impose higher fares on passengers. Therefore, despite having a structure that wants to cover all types of customers, it operates in a niche market with little competition, with inherent advantages. Another significant difference between TAP and the other

companies studied is its strong focus on the maintenance of its aircraft while acting as a CAMO organisation for other companies. This allows it to reduce operating costs related to maintenance and to use its technological expertise to generate revenue in this area. It is also worth mentioning the freight side, which uses the Lisboa hub to capitalise on the niche connection between the three continents. TAP's Flight Pass is aimed at regular passengers who want to use it within Europe and can choose the route or region on which they want to use it. It is characterised by high personalisation and is part of the subscription business model, although it is not renewable over time, but part of the "consumables" model. The ongoing replacement of trips and the option to book flexibly are notable developments in the sector, granting customers the ability to pay fixed prices for their journeys to ensure predictability in their purchases, unaffected by the revenue management system.

Finally, Ryanair is Europe's largest low-cost airline. It presents an ultra-low-cost model based on various service innovations that allow it to maintain low prices for customers through a lower-cost structure. Ryanair's value proposition is based on the combination of several factors to keep costs low: flying to secondary airports, a single model fleet (negotiated in large contracts), aircraft with high seating density, a modern fleet with high fuel efficiency, only own ticket distribution channels, no FFP, and a focus on internalising all maintenance and operational tasks as much as possible. It is only by combining all these factors that it is possible to maintain this low-cost structure, and it is also necessary to reinforce the existence of a highly advanced revenue management system to achieve all price sensitivities for the same service. This same system is based on the collection of all ancillary fees, which are a major source of revenue for the company. Ryanair's business model succeeds in attracting price-sensitive customers by offering a point-to-point route structure that allows it to connect niche markets where competition is scarce, with inherent advantages for the company.

The presentation of the Business Canvas for each business, besides the Product Canvas, was essential to systematise and present the results of each of the analyses performed on the companies' financial reports. The interconnections among the distinct blocks facilitate comprehension of the logical basis governing the cost and revenue structure. Companies operating within the low-cost range must establish a value proposition and align their product and organisational components accordingly to maintain a low-cost structure. Here, Ryanair and Frontier, despite the differences in how they operate, have the same means of reducing costs by using the same family of aircraft and focusing on leisure travellers on niche routes. On the other hand, Alaska Airlines, Air Canada, and TAP orient their business to cover as many customer segments as possible, either by

focusing on geographical niches or niche needs, which increases the cost structure and requires more resources.

### **3.9 Conclusion**

This chapter outlines the Business Model Canvas for each of the selected businesses being analysed, while also delving into an analysis of the corresponding Flight Pass.

The companies are structured to deliver on their value proposition in all the cases studied. Whether they operate globally, regionally, or in a niche market. As the value proposition and customer segments become more extensive, the cost structure rises as a result of increased resource requirements and a more extensive and dispersed network of activities. It is necessary to internalise all the needs or to resort to partnerships to fulfil the value proposition or to attract customer segments.

The Flight Pass is, therefore, a business innovation tool. It has different orientations and concepts depending on the initial business model and the objective it is intended to fulfil. In the case of the low-cost airline studied, it is used to increase the load factor, reduce the cost per passenger, and increase fixed revenues through the value of the subscription. FSNCs implement Flight Pass models which enable their loyal customers to travel with greater convenience. This can be achieved through a monthly subscription or a single payment, granting access to a predetermined network or a network of the customer's preference. They introduce predictability for both the customer and the company. The company gets more predictable occupancy and expected revenue, while the customer gets competitive, fixed pricing.



## Chapter 4

# World Cup 2030: A New Business Model with Flight Pass

### 4.1 Introduction

This chapter discusses the results of the previous chapter (3), and then applies them to a case study: the 2030 World Cup, to be held between Portugal, Spain, and Morocco. It can be used as a foundation for developing a Flight Pass that caters to a specific group of customers seeking air travel between different destinations, particularly during matches.

Based on the empirical results and the scientific foundations presented in this work, the aspects of this Flight Pass will be discussed using the method to be defined below.

### 4.2 Methodology

Based on the information explained in Chapter 3, it is possible to get a picture of the outlook for the industry and current trends. Consequently, this section will apply this knowledge to a case study.

The case study involves studying the locations where the 2030 World Cup will be held. From there, a route system must be designed to move visitors between the different cities and stadiums. Once this route system is in place, it can be integrated into Key Activities.

The Business Model Canvas is used as a base system for designing a business around the sports event. Each of the nine building blocks is described in detail. For each block, a synthesis is made of the canvas components of each company mentioned in the previous chapter, weighing the critical factors of the case study in the lessons learned. From each group in the canvas, an idea should emerge that focuses on the initial value proposition and what needs to be included in the network of key activities.

So, the two assumptions are the value proposition and the key activities. They will inevitably be used as the basis for designing both the product, the Flight Pass, and the surrounding business.

To create the Flight Pass plan, and before introducing the logic of generating money, as shown in the Business Model Canvas by Osterwalder & Pigneur (2010) the framework developed in Chapter 3.2 will be used.

First, the flight pass is drawn using the framework developed in Table 3.2. Using this framework, it is possible to draw the essentials of the Business Model Canvas because of the similarity between the building blocks of the Business Model Canvas and the Product Canvas mentioned above. It is intended that the business plan to be drawn will integrate only the Flight Pass.

The initial blocks mentioned earlier, Value Proposition and Key Activities, are the first factor to define. As a starting point, the value proposition must offer the customer or a group of customers an airline pass. This may or may not be part of the mobility-as-a-service concept that allows travel between the various matches and destinations of the 2030 World Cup.

In turn, the Key Activities in this chapter will be defined based on the network of cities that will host the 2030 World Cup, designing a network that allows all destinations to be reached easily and quickly. This network should be analysed from a hub-and-spoke or point-to-point perspective. It is also necessary to define economic logic at an early stage, i.e. the set of activities should be designed in such a way as to generate profit.

Finally, the results will be discussed through a survey with some subject matter specialists.

### **4.3 Characterising the problem**

Next up is a possible list of cities that will host matches in the 2030 World Cup. The locations mentioned are not yet confirmed.

The FIFA Bidding Rules require a minimum of 14 stadiums, which can be extended to 20 stadiums (FIFA, 2023).

These stadiums must comply with FIFA's bidding rules, and although the locations have not yet been confirmed, both Spain and Morocco have already identified their candidates. Portugal, on the other hand, has already confirmed its venues. Some stadiums require construction, while others require renovation. Finally, the inaugural matches, the first three, will be played in South America to celebrate the centennial edition.

Next, Table 4.1 shows the possible locations.

Table 4.1 - Possible venues for the 2030 World Cup, data source: (LUSA, 2023; Reuters, 2023; RFEF, 2022)

<b>Country</b>	<b>City</b>	<b>Stadium</b>
<b>Portugal</b>	Lisbon	Stadium of Light
		José Alvalade Stadium
	Porto	Dragão Stadium
<b>Morocco</b>	Rabat	Prince Moulay Abdellah Stadium
	Casablanca	Casablanca Grand Stadium
	Tangier	Ibn Batouta Stadium
	Agadir	Agadir's Grand Stadium
	Marrakech	Marrakech Stadium
	Fez	Fez Sports Complex
<b>Spain</b>	Vigo	Balaídos Stadium
	La Coruña	Riazor Stadium
	Gijón	El Molinón Enrique Castro Quini Stadium
	Bilbao	San Mamés Stadium
	San Sebastián	Anoeta Stadium
	Zaragoza	La Romareda Stadium
	Barcelona	Camp Nou Stadium
	Cornellá-El Prat	RCDE Stadium
	Madrid	Santiago Bernabéu Stadium
		Metropolitan Stadium
	Valencia	Nuevo Mestalla Stadium
	Murcia	Nueca Condomina Stadium
	Sevilla-Santiponce	La Cartuja Stadium
	Malaga	La Rosadela Stadium
	Las Palmas de Gran Canaria	Gran Canaria Stadium
<b>Uruguay</b>	Montevideo	Centenario Stadium
<b>Argentina</b>	Buenos Aires	Antonio Vespucio Liberti Stadium
<b>Paraguay</b>	Asunción	CONMEBOL Stadium

Below is a map of these locations, only for the Portugal, Spain, and Morocco bids (Figure 4.1).



Figure 4.1 - 2030 World Cup Potential Locations

All the above cities have an airport structure. These are listed in the following table, Table 4.2.

Table 4.2 - List of airports for the 2030 World Cup possible destinations

Location	Airport	Number of passengers (2022)
Lisbon	Humberto Delgado Airport	28 261 883 (FFMS, 2023)
Porto	Francisco Sá Carneiro Airport	12 637 645 (FFMS, 2023)
Rabat	Rabat-Salé Airport	873 305 (ONDA, 2023)
Casablanca	Mohammed V International Airport	7 637 643 (ONDA, 2023)
Tangier	Tangier-Ibn Batouta Airport	1 432 175 (ONDA, 2023)
Agadir	Agadir Al Massira Airport	1 774 605 (ONDA, 2023)
Marrakech	Marrakech-Menara Airport	4 903 681 (ONDA, 2023)
Fez	Fez-Saïss Airport	1 319 192 (ONDA, 2023)
Vigo	Vigo Airport	953 170 (Dirección de Operaciones y Red de Aeropuertos, 2023)

<b>Location</b>	<b>Airport</b>	<b>Number of passengers (2022)</b>
<b>La Coruña</b>	A Coruña Airport	963 953 (Directorate of Operations and Airport Network, 2023)
<b>Gijón</b>	Asturias Airport	1 454 917 (Dirección de Operaciones y Red de Aeropuertos, 2023)
<b>Bilbao</b>	Bilbao Airport	5 129 584 (Dirección de Operaciones y Red de Aeropuertos, 2023)
<b>San Sebastián</b>	San Sebastián Airport	383 579 (Dirección de Operaciones y Red de Aeropuertos, 2023)
<b>Zaragoza</b>	Zaragoza Airport	627 837 (Dirección de Operaciones y Red de Aeropuertos, 2023)
<b>Barcelona</b>	Josep Tarradellas Barcelona-El Prat Airport	41 641 444 (Directorate of Operations and Airport Network, 2023)
<b>Cornellá-El Prat</b>		
<b>Madrid</b>	Adolfo Suárez/Madrid-Barajas International Airport	50 633 759 (Dirección de Operaciones y Red de Aeropuertos, 2023)
<b>Valencia</b>	Valencia Airport	8 114 821 (Dirección de Operaciones y Red de Aeropuertos, 2023)
<b>Murcia</b>	Murcia Region International Airport	839 166 (Dirección de Operaciones y Red de Aeropuertos, 2023)
<b>Sevilla-Santiponce</b>	Seville Airport	6 779 453 (Dirección de Operaciones y Red de Aeropuertos, 2023)
<b>Malaga</b>	Málaga-Costa del Sol Airport	18 458 006 (Directorate of Operations and Airport Network, 2023)
<b>Las Palmas de Gran Canaria</b>	Gran Canaria Airport	12 417 604 (Dirección de Operaciones y Red de Aeropuertos, 2023)

<b>Location</b>	<b>Airport</b>	<b>Number of passengers (2022)</b>
<b>Montevideo</b>	Carrasco International Airport - General Cesareo L. Berisso	1 221 151 (DINACIA, 2023)
<b>Buenos Aires</b>	Buenos Aires-Ezeiza International Airport	7 459 288 (Hutin, 2023)
<b>Asunción</b>	Silvio Pettrossi International Airport	876 625 (DINAC, 2023)

**4.3.1 Value Proposition**

The value proposition of the business plan to be implemented is now presented. The initial step involves an examination of the benefits and value propositions associated with each of the Flight Pass options that have been studied.

Two main Flight Pass subscription models have been explored.

First, there is the "all-you-can-eat library" model, which is based on unlimited access to a set of routes. In the case of the 2030 World Cup, customers would be assured unrestricted access to all flights within the network, with no travel limitations. This model makes it possible to increase the load factor on an existing transport network. It is worth mentioning, though, that a well-established transportation network with limited utilisation is essential.

Given the objective of linking all airports in the 2030 World Cup host cities, whether through hub or point-to-point connections, it is crucial to guarantee a sufficiently extensive network that can cater to their needs and align with the match schedule. Consequently, this model will be meaningful solely if it capitalises on an already established network with minimal demand. It is important to highlight that the transportation network is typically overwhelmed during sporting events, thus negating the necessity of encouraging demand in this manner.

It should be added that this solution is not very predictable for the consumer in the way it has been applied (in the cases studied), since the period for booking a seat is restrictive. It should be noted that this immediacy can be advantageous in the final stages of a World Cup, as the team calendar is decided in periods of 4/5 days in the knockout stages. However, the demand will not change much because the number of spectators for games and trips does not depend on it. In other words, as an individual travel decision, the demand for a transportation seat is not very predictable; however, as group behaviour,

this demand changes little because there will always be teams and games, with only the players changing. As a result, the Flight Pass model used by Frontier Airlines is not advantageous in this case study.

Another model to consider is the "consumables" model, which will now delve into. This type of subscription aims to provide a regular supply of a consumer good. It is therefore a travel substitute service that can take different forms, such as credits or flight hours. Airlines can reorganise their model according to the personalisation they offer to the customer. It is therefore a system of pre-purchased trips that can ultimately be an unlimited and regular supply. The main advantages are the predictability of supply and demand, both for the consumer and the company.

The Alaska Airlines model allows travel credits to be recharged regularly. This option is highly recommended for passengers who frequently travel, whether it is for business or pleasure. However, Alaska Airlines' model is not as customisable as Air Canada's and TAP's.

Air Canada and TAP, on the other hand, have the same model for the regular replenishment of trips, based on the principles of personalising the number of trips, the network of destinations and the purpose of the trip, as well as allowing passengers to be segmented into different classes according to the service desired. This particular model is known for its ability to save substantial time and money, as the trips are not affected by price fluctuations from the revenue management system and are purchased only once.

In this case, saving time and money should be the factor that attracts customers who need to travel in a short period and decide on their destination only a few days before the trip. Thus, by guaranteeing fixed fares, airlines have a better guarantee of demand and can better adjust their inventory forecasts. Passengers also have access to predictable fares that are not affected by current demand. They can also personalise their network of destinations, adjust the number of trips they need, and travel according to the most appropriate segment (whether economy or business and the ancillaries they want to add). The Air Canada and TAP models are very similar in principle and differ only in terms of personalisation since Air Canada offers a wide range of pre-designed products that are likely to meet the passenger's needs; on the other hand, TAP allows to personalise the network, the number of trips, the booking period, and other factors already showed, according to the passenger's preferences. TAP's model is therefore the most advantageous to implement for an event with the characteristics of the 2030 World Cup, as it allows for personalisation and fixed fares.

As a result, the value proposition needs to be based on a "consumables" subscription model. Additionally, it is addressed the need for a more appealing value proposition to consumers. In essence, the "front-of-the-line" model could complement the "consumables" model in certain ways. By offering a different kind of personalisation, it would be possible to provide the customer with ancillary services that enhance their experience to a more comfortable and luxurious one. Tying together in this model could be lounge access, priority boarding, and checked baggage. This add-on could appeal to passengers who are less price-sensitive and willing to pay for better service, providing the airline with a greater revenue stream by differentiating by class.

This entire system can be coordinated with other modes of transportation and partners (hotels, car rentals, restaurants) to provide the most simplified experience possible for the consumer. Through a higher Flight Pass price, or as a monthly subscription, it would be possible to offer the consumer a complete package, including, for example, accommodation and entertainment services, thus simplifying their experience. Among these possibilities is the possibility of offering a MAAS platform, mobility-as-a-service; in addition to airline tickets, other means of transportation could be included for travelling between cities or between the airport and the city. This could include a partnership with local tourist boards. It expands the visit beyond just watching the game to include a tourist element. Thus, customers may need to be transported and have the option to utilise public transportation systems, rental cars, and taxis.

This value proposition is in line with the "simplifier" model described in Chapter 2.5. This assumes that the consumer's task is made easier by a particular service. Buying the trips as a package eliminates the need to buy multiple trips in the future, with the inconvenience of different ticket prices and the time-consuming process.

Systematise: The value proposition of the Flight Pass and the company that will implement it should include a "consumables" model similar to that of TAP. In other words, for a fixed fare, it should be possible to personalize the number of trips and how far in advance they are booked. The network will cover all World Cup 2030 destinations, either by air or, if necessary, in a MAAS model together with road and heavy rail. It should be possible to add a "front-of-the-line" aspect to this model, allowing greater customisation of the services to be included in exchange for the subscription.

#### 4.3.2 Key Activities

The primary focal point of this value proposition should be centred on the transportation of passengers within a yet-to-be-determined segment.

The structure of the transportation network must be defined. It is necessary to choose a hub-and-spoke model or a point-to-point model. The utilisation of the pre-established value proposition is essential for identifying the most effective activities that deliver the value proposition and establish a connection between the organisational aspect and the value proposition.

The establishment of the transport network hinges upon the pre-defined destinations, thereby necessitating the identification of routes and optimal passenger movement strategies. It is important to note that the final network for the 2030 World Cup has not yet been determined and is currently being adjusted to meet the requirements set by FIFA regarding the number of stadiums and locations.

As seen in Chapter 3, point-to-point networks are typically associated with low-cost business models that focus on niche markets and a network that serves secondary airports, avoiding the costs associated with a hub. Therefore, in this case, it would be interesting to invest in a point-to-point network based on the following factors: convenience for travellers, ability to serve under-served routes (i.e. niche markets), reduction of some costs associated with being in a hub, and reduction of turnaround times.

However, it is necessary to consider the scale of the variety of destinations and the essential connectivity between all destinations. In an ideal point-to-point model, each airport must have direct connections to every other airport in the network. However, this approach leads to a network that is excessively large and demands resources that do not align with the number of passengers to be transported. As an illustration, the link between San Sebastian and Bilbao airports lacks justification based on the present demand for San Sebastian airport and is additionally unnecessary, given their close geographical proximity.

Therefore, a hub must redirect passengers. The cost savings achieved through a smaller fleet allow for an increase in frequencies across all routes with no resource expansion. This is consistent with the value proposition, which capitalises on a significant number of flights to attract and cater to the ever-changing demand associated with a sporting event.

Various airports in the Iberian Peninsula, such as Madrid Airport, are being evaluated as potential hub locations. At present, it serves as a connecting point for all destinations within the Iberian region (FlightConnections, 2023). The first matches on the South American continent could be connected to this central hub. Nevertheless, considering the exceptional circumstances, the limited number of matches, and the specific target audience, these destinations could be incorporated into the pass without necessitating a significant allocation of resources. Consequently, their representation in the list of activities is diminished. In contrast, Portugal, Spain, and Morocco's geographical proximity allows for efficient connectivity, warranting the proposal of a hub in each country. Subsequently, the hubs that will be suggested are the most significant airports in terms of passenger volume in each country. Thus, Lisbon, Madrid and Casablanca are the proposed solutions. The selection of Barcelona Airport as a potential option considers the presence of two stadiums in the city, the size of the airport, and its capacity to effectively handle the large number of passengers associated with the metropolitan area.

The chosen hubs are not required to have connections to all other destinations; it suffices that air transportation remains competitive with alternative modes of transport. In the absence of competition, Flight Pass must provide alternative transportation options for these routes, specifically collective means such as road or rail, with a preference for rail due to its higher capacity for passengers. However, it is essential to have high-frequency connections between hubs to place passengers in each hub at the most appropriate time for the desired connection. This condition is currently guaranteed in 2023 and is expected to continue in the future, especially during periods of high demand. Except for regulatory uncertainties that could potentially restrict short-haul flights.

The following tables (Table 4.3; Table 4.4; Table 4.5; Table 4.6) show the connections that currently have daily, non-seasonal flights from each hub and their duration. Routes are chosen based on the current market supply, specifically those with at least one daily frequency. This criterion ensures that the routes have enough demand during non-peak periods to warrant regular commercial operation. As a result, it is possible to generate the network of destinations in Figure 4.2 from this data, without adjusting for seasonality or demand factors related to the 2030 World Cup. The current market supply serves as the basis for the routes, based on those with at least one daily frequency, thus representing routes that have a sufficient demand in non-peak periods to justify regular commercial operation.

Table 4.3 - Set of destinations originating in the Lisboa hub (in January 2024), with daily frequency indicated, those that do not have the daily frequency indicated have at least one weekly flight, data source: (FLIGHTSFROM.COM, 2024)

<b>Destination</b>	<b>Duration</b>	<b>Frequency</b>
<b>Lisbon</b>	-	
<b>Porto</b>	1h	X (10-11/day)
<b>Rabat</b>		
<b>Casablanca</b>	1h20min	X (2-4/day)
<b>Tangier</b>	1h10min	
<b>Agadir</b>	1h45min	
<b>Marrakech</b>	1h35min	X (1-4/day)
<b>Fez</b>		
<b>Vigo</b>		
<b>La Coruña</b>		
<b>Gijón</b>	1h30min	
<b>Bilbao</b>	1h30min	X (1-2/day)
<b>San Sebastián</b>		
<b>Zaragoza</b>		
<b>Barcelona</b>	1h50min	X (8-13/day)
<b>Madrid</b>	1h20min	X (16-21/day)
<b>Valencia</b>	1h30min	X (1-3/day)
<b>Murcia</b>		
<b>Sevilla-Santiponce</b>	1h5min	X (2-4/day)
<b>Malaga</b>	1h15min	X (2-4/day)
<b>Las Palmas de Gran Canaria</b>	2h20min	

Table 4.4 - Set of destinations originating in the Madrid hub (in January 2024), with daily frequency indicated, those that do not have the daily frequency indicated have at least one weekly flight, data source: (FLIGHTSFROM.COM, 2024)

<b>Destination</b>	<b>Duration</b>	<b>Frequency</b>
<b>Lisbon</b>	1h20min	X (15-19/day)
<b>Porto</b>	1h15min	X (10-11/day)

<b>Destination</b>	<b>Duration</b>	<b>Frequency</b>
<b>Rabat</b>	1h40min	X (1-2/day)
<b>Casablanca</b>	1h45min	X (3-4/day)
<b>Tangier</b>	1h30min	X (2-4/day)
<b>Agadir</b>	2h15min	
<b>Marrakech</b>	2h5min	X (3-4/day)
<b>Fez</b>	1h35min	X (1/day)
<b>Vigo</b>	1h10min	X (7-8/day)
<b>La Coruña</b>	1h20min	X (7-9/day)
<b>Gijón</b>	1h15min	X (4-5/day)
<b>Bilbao</b>	1h	X (7-10/day)
<b>San Sebastián</b>	1h10min	X (3/day)
<b>Zaragoza</b>		
<b>Barcelona</b>	1h20min	X (13-20/day)
<b>Madrid</b>	-	
<b>Valencia</b>	1h	X (5/day)
<b>Murcia</b>	1h15min	
<b>Sevilla-Santiponce</b>	1h10min	X (3-4/day)
<b>Malaga</b>	1h15min	X (7/day)
<b>Las Palmas de Gran Canaria</b>	2h55min	X (12-18/day)

Table 4.5 - Set of destinations originating from the Casablanca hub (in January 2024), with daily frequency indicated, those that do not have the daily frequency indicated have at least one weekly flight, data source: (FLIGHTSFROM.COM, 2024)

<b>Destination</b>	<b>Duration</b>	<b>Frequency</b>
<b>Lisbon</b>	1h25min	X (2-4/day)
<b>Porto</b>	1h45min	
<b>Rabat</b>		
<b>Casablanca</b>	-	
<b>Tangier</b>	1h20min	
<b>Agadir</b>	1h	X (3-4/day)
<b>Marrakech</b>	0h50min	X (4-5/day)

<b>Destination</b>	<b>Duration</b>	<b>Frequency</b>
<b>Fez</b>	1h10min	X (8-12/day)
<b>Vigo</b>		
<b>La Coruña</b>		
<b>Gijón</b>		
<b>Bilbao</b>		
<b>San Sebastián</b>		
<b>Zaragoza</b>		
<b>Barcelona</b>	2h10min	X (2-3/day)
<b>Madrid</b>	1h45min	X (3-4/day)
<b>Valencia</b>	2h30min	X (1/day)
<b>Murcia</b>	2h5min	
<b>Sevilla-Santiponce</b>	1h35min	
<b>Malaga</b>	1h40min	X (1-3/day)
<b>Las Palmas de Gran Canaria</b>	2h50min	

Table 4.6 - Set of destinations originating in the Barcelona hub (in January 2024), with daily frequency indicated, those that do not have the daily frequency indicated have at least one weekly flight, data source: (FLIGHTSFROM.COM, 2024)

<b>Destination</b>	<b>Duration</b>	<b>Frequency</b>
<b>Lisbon</b>	2h	X (8-12/day)
<b>Porto</b>	1h55min	X (4-6/DAY)
<b>Rabat</b>	2h10min	
<b>Casablanca</b>	2h10min	X (2-3/DAY)
<b>Tangier</b>	1h55min	X (1-2/DAY)
<b>Agadir</b>		
<b>Marrakech</b>	2h30min	X (1-3/DAY)
<b>Fez</b>	1h55min	
<b>Vigo</b>	1h50min	X (1-3/DAY)
<b>La Coruña</b>	1h50min	X (2/DAY)
<b>Gijón</b>	1h35min	X (2-4/DAY)

Destination	Duration	Frequency
Bilbao	1h15min	X (4-6/DAY)
San Sebastián	1h15min	X (2/DAY)
Zaragoza		
Barcelona	-	
Madrid	1h25min	X (12-19/DAY)
Valencia	1h	
Murcia	1h25min	
Sevilla-Santiponce	1h40min	X (8-10/DAY)
Malaga	1h40min	X (8-10/DAY)
Las Palmas de Gran Canaria	3h30min	X (4-5/DAY)

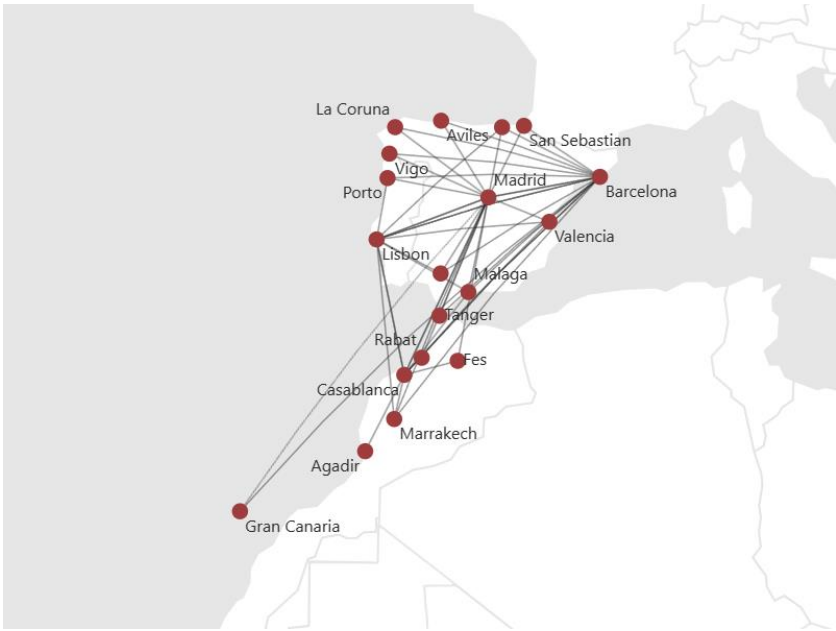


Figure 4.2 - Destination network for the 2030 World Cup Flight Pass

Once again, the network is established according to the present destination network of the multiple airlines operating within the market. Only routes departing from hubs to destinations with at least one daily flight were selected. There are routes not mentioned, however, in Table 4.3, Table 4.4, Table 4.5, and Table 4.6, the routes listed, along with their corresponding durations, have a minimum weekly frequency; while the demand may be lower, these routes can still maintain satisfactory occupancy rates during the expected increase in visitors for the 2030 World Cup. It is crucial to emphasise that these operations are exclusively regular and can be modified through charter operations if

there is sufficient demand. With the predictability of demand in the value proposition, it becomes feasible to anticipate demand to a certain extent and allocate resources to an unscheduled operation, if one is present.

The network lacks a connection to Zaragoza, which could be reached by non-regular service if needed. On the other hand, the latter does not align with the value proposition; however, it can be implemented through partnership. This partnership has the potential to be implemented within the MAAS framework, utilising the Spanish high-speed line, which currently operates this route in a manner that competes with airplanes in terms of travel time. The aforementioned aspect will be specifically addressed within the Key Partnerships section. For its part, Murcia has air connections with the hubs, although not daily. This offer should be strengthened if the city hosts the World Cup in 2030. Furthermore, it is worth noting that there is a high-speed rail network in place, providing a viable alternative to air travel (Trainline, 2024).

There are some dysfunctions in Morocco's internal connections. The Casablanca hub does not connect to all possible cities that will host World Cup matches. However, some may still be excluded. As a result of the growing demand from foreign tourists, air transport will be deployed, if needed, to serve these routes in Morocco, potentially through non-scheduled operations. Demand during these sporting events is always very high, so it is possible to operate regularly, at least during the World Cup. During the 2022 World Cup in Qatar, there were 1,4 million visitors, even though it was unnecessary to provide internal air connections (Lusa & SIC Notícias, 2022).

Additionally, alternative means of transportation can be utilised to transport passengers, preferably in a redundant manner, in situations where securing a seat on air transportation is not feasible. In the event that all seats are occupied and all pass holders wish to travel, rail transport is offered as a viable alternative due to the competitive nature of high-speed rail within a radius of approximately 500 km (Prussi & Lonza, 2018). The establishment of the high-speed rail network in Spain facilitates intermodality through collaboration with other transportation stakeholders within the framework of MAAS.

#### **4.4 Product Model Canvas**

Given the two blocks constructed so far as part of the characterisation of the problem, and assuming the main limiting factors, it is now discussed the other blocks of the product model canvas developed in Chapter 3.2.

#### 4.4.1 Customer Segments

The event will primarily cater to leisure travellers, specifically those attending the event in the stadiums and spectator areas of the host cities.

Those passengers who will derive the most benefit from this product are individuals who travel to support their teams and follow their team's schedule. Moreover, this product will prove to be of great interest to consumers residing in Portugal, Spain, and Morocco, as it offers a convenient means of travel within the country to attend different matches.

Hence, it aims to attract passengers who are more budget-conscious and do not value the flexibility of seat modifications and cancellations. Nevertheless, it targets a less price-sensitive segment by offering services with class differentiation.

The customers attracted value the ease of travelling and the ability to book a seat at short notice, even though the trip has already been purchased in advance. The fixed price of the trip is therefore seen as an attractive factor that encourages travel.

Nonetheless, this product may have the ability to attract business customers, even if their travel is for leisure. Corporate customers may be enticed by the offering of Flight Passes through an event-associated company. The company has the ability to curate the pass by arranging the appropriate seat reservations, resulting in fixed prices and a more versatile travel option compared to booking through a travel agency. The result is a product that meets standardised specifications.

The type of product idealised by the value proposition in the cases studied in Chapter 3 is usually aimed at a segment of passengers who travel regularly, such as business and professional travellers. While not the focus, the Flight Pass design can be framed without altering other blocks on the Product Canvas, in this case. Although companies already negotiate travel packages for their employees directly with the companies, this product can also be used for this type of service. In other words, employees of service providers for the 2030 World Cup event can travel with the Flight Pass. This will allow them to take advantage of the fixed and aggregated fares they would have negotiated with the airline, with greater flexibility in booking seats. It is important to remember that the TAP and Air Canada Flight Passes, which form the foundation of our current value proposition, offer the flexibility to be used by multiple users.

#### 4.4.2 Channels

The companies surveyed primarily utilise their distribution channels, particularly online, to sell the Flight Pass to consumers.

Furthermore, the surveyed airlines rely on other third parties, like travel agencies through the GDS, to distribute their seats. The goal is to establish cooperative partnerships with third parties only for the distribution of flight passes. The entire seat reservation structure should be internalised within the internal distribution structure. However, it should be possible to consult the inventory through the GDS, with the prospect of targeted advertising for flights with low occupancy rates.

The Flight Pass distribution system must take the following two forms:

- Direct to the customer: the pass should be customised to the customer's preferences within the available parameters, either through the company's website or mobile application. The utilization of the direct online system necessitates the provision of customer support, whether through online means or via a call centre, to offer explanations and guidance to customers as needed. The preferred use of the call centre system is strictly for customer support, with the added capability to facilitate Flight Pass sales when required;
- Third parties: Pre-defined Flight Passes are sold by third parties through travel agencies, as well as online and traditional travel distributors. These passes are specifically tailored to cater to the preferences of customers who utilise this specific channel. No personalisation is permitted on this channel. The products intended for sale via this channel should be those that offer a higher margin, sufficient to compensate for the distribution expenses.

Seat inventory management is solely handled by the GDS. Similar to all the companies that were analysed, seat reservations and bookings are exclusively done online or through a dedicated application. In order to guarantee seat availability, even in the absence of airline seats, these distribution channels must incorporate the capability to access or sell seats from partner carriers within the framework of MAAS collaborations.

#### 4.4.3 Customer Relationship

The Flight Pass is a form of automated relationship. It creates a customer base that uses the service frequently for a fee. However, this product results from the personalisation offered to the customer by the company.

This form of personalisation places the responsibility on the customer to create their own travel itinerary, without the need to select the destination and specific date immediately upon initial interaction. In order to promptly solve problems, it is needed a new interaction that is as fluid as possible, accompanied by efficient customer support. Online channels are used for this interaction. Each time the customer books a seat, a new interaction occurs.

There is also no associated mileage program. This aims to simplify the product, and it presents itself as an exceptional example of an application in this case. Despite the absence of a mileage program, gains in customer interaction are achieved through product simplification. In essence, the act of earning and redeeming miles does not imply an increase in travel or the expectation of future benefits derived from their usage. For example, Ryanair's low-cost model recognises that its customer segment does not need this product. This results from their sensitivity to prices, their limited frequency of travel, and their primary identity as leisure travellers. The same scenario holds here, as it appeals to a significant leisure segment that specifically travels for sporting events. It is not expected that they will form a regular association with the company for future travel purposes. Furthermore, despite the regularity of the trips, the short distance does not offer substantial advantages to consumers in terms of mileage accrual.

In short, this is a product that aims to simplify the relationship with the customer by allowing them to purchase trips in advance without having to choose a specific date and location, so a mileage program that creates an obstacle to this simplification is unnecessary given the time frame of the sporting event (1 month) and the short distances. In addition, it is possible to achieve savings (in the cost structure) with the non-existence of the FFP, since it will not attract more customers at that time, and the Flight Pass itself is a customer relationship that promises recurrence.

#### 4.4.4 Price Strategy

The fundamental aspect of this point can be found in the analysis proposition of the product's value. Once this point has been considered, a pricing strategy has been defined, albeit only conceptually, in Section 4.3.1.

Defining the travel pre-sales model through a customisable system requires a system in which each variable is given a certain weight. Whether it is the time to book the seat, the number of flights, the class, or the group of destinations (all, Portugal, Spain, or

Morocco). It is suggested to include MAAS services such as public transport by rail and road, taxis, and car rentals, and the options to be included are also customisable.

Despite the defined purpose, the revenue management system could define the price of the Flight Pass, with the prospect of obtaining fixed prices in advance for trips without a specific destination and date at the time of purchase. This creates a win-win situation for both the consumer and the company. The price of the Flight Pass varies based on demand, proximity to the event, and traffic and location analytics. This is in line with the latest airline ticketing management systems.

The pricing models of the companies studied are based on fixed monthly fees for access, one-time purchases with renewals, or one-time purchases. However, among the one-time purchase models, Air Canada has a model that allows one to buy the pass in instalments, in partnership with credit companies, with advantageous conditions. The same company also has some instalment models that require the pass to be renewed. This model does not include such a possibility, since it is a one-time event. However, it is important to use an instalment model in partnership with a credit company with the most advantageous interest rates for the customer. This can make it easier for the customer, as they do not have to spend the full amount initially and is an incentive for certain price-sensitive leisure customers.

In contrast to the model implemented by the American companies studied here, the goal is to include all taxes and fees in the price of the flight pass to fulfil the value proposition advocated by the "simplifier" model. Thus, the payment system is simplified as much as possible, and the customer only interacts with the purchasing platform once, with no surprises.

#### 4.4.5 Canvas

The product canvas for the 2030 World Cup Flight Pass, developed using the method described above, is shown in Table 4.7 below.

Table 4.7 - 2030 World Cup Flight Pass Canvas

<b>Business Organisation</b>	<b>Product Architecture</b>		
<p><b>Key Activities</b></p> <p>Defined destinations based on the demand</p> <p>Hub-and-spoke network, with hubs at Casablanca, Madrid, Barcelona, and Lisboa</p> <p>Multiple destinations according to the flight pass modality chosen</p>	<p><b>Value Proposition</b></p> <p>Highly customisable</p> <p>Buy trips at a fixed rate</p> <p>Consumables model</p> <p>For corporate purposes, there are multiple travellers with the same pass in some modalities.</p>	<b>Customer Interface</b>	
		<b>Channels</b>	<b>Customer Segments</b>
		<p>Online website and app</p> <p>Travel agencies only with a popular flight pass</p>	<p>Leisure Clients</p> <p>Corporate clients</p> <p>2030 World Cup workforce</p>
<p><b>Pricing Strategy</b></p> <p>Varies according to the modality chosen.</p> <p>The price of the Flight Pass varies according to revenue management techniques, considering demand and other factors.</p> <p>According to the number of credits, class, and region prices can vary</p>			

### 4.5 Business Model Canvas

After describing the Flight Pass Product Canvas and given that Flight Pass is intended to be the sole business object of this model, it follows the logic of the unbundling concept described by Osterwalder & Pigneur (2010) from an existing business.

The concept of unbundling is based on the principle that there are three types of businesses: "customer relationship businesses, product innovation businesses, and infrastructure businesses" (Osterwalder & Pigneur, 2010, p. 57). These models can coexist within a single organisation, in this case, a product innovation model.

The goal is to share resources, but in a new business model that allows for product innovation. The building blocks are therefore used in their entirety for the business model canvas, with only the organisational blocks remaining to be completed besides the financial blocks, thus completing the logic of generating revenue to satisfy the business.

#### 4.5.1 Key Partnerships

Generally, the companies mentioned in this document establish cooperative partnerships with one another, the airports in which they operate, tourism regions, technology partners, and tourism service providers.

From an operational point of view, it is essential for the company operating the Flight Pass to establish cooperation agreements with the airports where it is implemented, to accommodate all the ground support infrastructure and sufficient slots to achieve satisfactory frequencies.

The existing research on agreements between companies can be categorised into alliances, code-sharing agreements, and partnerships, which enable the mutually agreed sharing of a market. Given the geographic limitation of the market in question and the limited period in which the pass is to be applied, there are two hypotheses: the company is already established in the market and already has alliance agreements in place; or no alliance or code-share agreement is necessary.

Code-sharing is interesting only for long-haul flights, where the goal is to reach numerous destinations, but not to serve them all. It requires a hub to redirect passengers and is operationally complex, involving baggage and passenger transfers, a revenue-sharing agreement and access to each other's sales and inventory systems. This is not intended to be utilised with the Flight Pass. It is a limited geographic operation. With code sharing, the system for booking seats after the purchase of the Flight Pass becomes too complex. This does not invalidate an agreement between multiple carriers to better optimise resources and reach multiple destinations with adequate frequency and service.

Hence, the proposal is to implement a market-sharing agreement, akin to Air Canada's transatlantic operations, to ensure non-competition and adequate frequencies for all destinations within the activity network.

As envisioned in the Value Proposition and Key Activities, the Flight Pass should be part of or integrated into a MAAS system. The goal is therefore to establish collaborative partnerships with access to the seat inventory of road and heavy rail transportation.

The high-speed rail network competes with air travel for destinations up to about 500 kilometres (Prussi & Lonza, 2018). Those unable to secure aeroplane seats can explore other travel options. The first solution is rail transportation, followed by road transportation as a last resort.

It is therefore necessary for the rail and road booking systems to be fully integrated with the airline seat reservation platform. For this reason, cooperation agreements must be established. The rail market in Spain is currently liberalised (Calle, 2022) and is expected to remain so until 2030. As a result, it is easier to reach agreements with any of the operators. On the other hand, in Portugal and Morocco, the network operators are unique and form a monopoly (Wikipedia contributors, 2023d, 2024) with the prospect of opening to competition in Portugal (ECO, 2023). Portugal does not yet have a high-speed line, but Morocco has a high-speed line between Casablanca and Tangier (Wikipedia contributors, 2023d) both cities that could host World Cup matches.

Hence, it is imperative to establish a partnership that enables the company to sell excess high-speed seats in instances where the aeroplane fails to accommodate the Flight Pass demand, ensuring continuous passenger movement. However, train fares must be considered compared to airfares. Currently, most routes in Spain are more expensive than flying, according to a report by Greenpeace (2023). However, ongoing liberalisation has allowed prices to fall, making high-speed rail competitive with air travel (Tennant, 2023). This agreement, if cost-effective, could limit rail competition by integrating part of the service, in this case, the Flight Pass, into the same system.

Furthermore, it is crucial to engage car rental agencies and hotels in utilising the seat reservation platform as a marketplace, accompanied by a commission fee. The integration of rent-a-car into the MAAS network should be evaluated on a case-by-case basis, considering the conditions and relevance.

It is imperative to integrate local public transportation providers in every host city into the platform in order to offer users convenient travel options between the airport, the city, and the stadium. At present, the integration of the public transport network into a MAAS system is non-existent. However, there is an optimistic outlook for establishing a partnership agreement that would allow for integrating a transportation mode, facilitating customer mobility into Flight Pass.

Lastly, when a business emerges as a result of the unbundling of a parent company, it is imperative to establish a cooperative relationship within the group.

#### 4.5.2 Key Resources

Based on the analysis of the companies' business models in the study, it was observed that the companies typically opt for narrow-body aircraft, specifically the Airbus A320 and Boeing 737, for short-haul journeys. There are even cases where these aircraft are

used on long-haul transatlantic flights. As an illustration, US airlines rely on regional carriers operating regional jets to cater to the demands of intrastate markets due to the vast geographic size of the market.

In this case, given the geographical proximity of the countries in question, the same philosophy should apply. Put simply, narrow-body jets are utilised for flying between destinations due to their range and seating capacity, enabling efficient and cost-effective operations. Among the companies studied that operate in the Iberian market, TAP mainly uses narrow-body jets, Embraer 190 and Airbus A320 family, within Europe, even on routes with Spain and Morocco. Therefore, it is necessary to have enough aircraft to guarantee high frequencies on all routes, even if it is necessary to lease new aircraft for a short period to meet the increase in demand related to the World Cup in 2030.

From an unbundled company perspective, it is suggested that aircraft and human resources be shared with the parent company. This form of partnership enables enhanced management efficiency, facilitating the sale of seats through both the conventional revenue management system and the flight pass.

Utilising major airports is crucial to ensure passengers are conveniently near the city centres, where the stadiums are located. This is particularly important in hubs, as it allows passengers to seamlessly connect to different destinations.

#### 4.5.3 Revenue Streams

The main sources of revenue for the airlines studied are passenger revenue and revenue from cargo or other group activities.

Here, the main revenue is generated from passengers through the sale of flight passes. The possibility of selling ancillary products as a form of ancillary revenue is recognised. The notion exists that including ancillaries as part of the sales transaction could establish class distinctions, ultimately leading to an amplification of revenue.

Nonetheless, the option to secure supplementary amenities during the seat booking process should be considered, as it has the potential to generate additional revenue. This practice is common among all the surveyed companies. This component is a significant part of operating income.

The potential for generating revenue through commissions collected from hotels, car rentals, insurance companies, and others that advertise on the Flight Pass direct-to-consumer platform is acknowledged, as it is observed in all the examined companies.

It is worth mentioning that the Flight Pass serves the purpose of maximising passenger revenue through efficient revenue management. This facilitates resource allocation based on the demand derived from Flight Pass sales. Additionally, it enables the opportunity to enhance the load factor, resulting in an augmentation of revenue per mile travelled.

The goal is for the revenue generated by the Flight Pass to be equivalent to that of a passenger using a traditional revenue management system. The aim of maximising the load factor and implementing predictability can result in increased revenue for both the company and the passenger. By stimulating demand, the company has the potential to boost revenue, while passengers can enjoy cost savings through the fixed price. The implementation of this simplified model allows for the targeting of customers whose price sensitivity can be better met through a more adaptable service, as opposed to the conventional model of purchasing tickets with predetermined routes and dates.

#### 4.5.4 Cost Structure

Finally, the revenue structure should be consistent with that of the airlines studied. Fuel stands at their highest cost. It depends on oil prices, fuel purchase contracts and fleet efficiency. It is therefore important to minimise these costs through a modern and efficient fleet, adapted to the needs of the number of passengers and the size of the route. Given the geographical proximity of the countries and the existence of several bases, timely negotiations with airports and fuel suppliers are essential. Include sufficient provisions in contracts for this event and the corresponding increase in traffic. Negotiating in advance and volume can result in significant savings.

Another important item to consider is staffing and salaries; it is necessary to have a staff that can respond to a service that results in increased attendance.

The depreciation costs of the aircraft or their leasing are also considered. The fleet must comprise owned aircraft, like Ryanair, which provide cost advantages and are optimised for specific operations. On the contrary, it is of utmost importance to ensure flexibility through aircraft leasing in order to promptly adjust to temporary spikes in demand, thereby necessitating the allocation of additional resources. The same principle applies to the field of human resources.

### 4.5.5 Canvas

Next, Figure 4.3 shows the business model canvas of the company that is part of the 2030 World Cup Flight Pass. It comprises the building blocks described in this chapter.

<b>Business Model Canvas</b>				
<b>Key Partners</b>	<b>Key Activities</b>	<b>Value Propositions</b>	<b>Customer Relationships</b>	<b>Customer Segments</b>
MaaS service Train operators' partnership Airports Municipal tourism councils Mother company and group structure	Hub-and-spoke network. Multiple hubs: Madrid, Barcelona, Lisboa, Casablanca.	"Consumables" subscription model for Flight Pass Flight Pass only Highly personalized Pass MaaS integration "Simplifier" model for seat reservation	Flight Pass a form of automated relationship	Leisure Clients Corporate clients 2030 World Cup workforce
	<b>Key Resources</b>  Narrowbody fleet Human resources Main Airports		<b>Channels</b>  Direct to customer: website and app Third Party: travel agencies only for pre maid Flight Pass	
<b>Cost Structure</b>  Aircraft Fuel Non-Fuel Operating Expenses		<b>Revenue Streams</b>  Passenger Revenue from flight pass sales Ancillary Commission fess form marketplace		

Figure 4.3 - 2030 World Cup Flight Pass Business Model Canvas

## 4.6 Result Validation – Survey to Subject Matter Specialist

To assess and confirm the findings from the previous section, a survey was conducted. The survey consisted of 22 closed-ended questions, with response options ranging from 'totally disagree' to 'totally agree' (1 to 5). Additionally, respondents were asked to provide a brief written response to offer suggestions and opinions on the subject matter and the presented results.

The survey is included in Appendix 1. It was conducted based on the fields of the Business Model Canvas, specifically the 9 blocks. Questions were asked regarding the obtained results. Control questions were also asked to present opposing views and to ensure coherent answers. For instance, in the 'Key Activities' section, participants were asked about their level of agreement with a point-to-point structure or a hub model.

After briefly introducing key concepts such as the definition of the Business Model Canvas and Flight Pass, the SMEs (Subject Matter Experts) were asked to respond to the proposed idea for the 2030 World Cup.

The survey was distributed to aviation industry experts worldwide, including mobility specialists, economists, researchers, safety specialists, etc. The survey, conducted with a 90% confidence level, returned a maximum margin of error of 11,84%, based on a total of 48 successful responses. Furthermore, the response rate was 63% (out of a total of 76 surveys sent).

The value proposition was assessed first. The preferred subscription model was then considered, with the choice between 'all you can eat' or 'consumables'. In this work, the 'consumables' option was chosen and the results supported this choice. The 'consumables' model received a higher average rating, a higher rate of positive responses (Score>3), and a lower number of negative responses (Score<3).

The 'consumables' model is a system of pre-purchased trips and has a higher approval rating, despite respondents believing that a network with unlimited access would increase network occupancy. This is in line with the statement that the implementation model should only capitalize on an already established network with minimal demand. The survey results indicate that most respondents agree with the statement, as demonstrated by the positive average results. However, there is a significant minority of negative responses, suggesting that unlimited access is not desirable.

The issue of personalising the service according to the consumables model is also addressed. The importance of personalising this subscription system for the respondents is highlighted, once again garnering positive response rate (Score>3). The statement measuring personalisation points to the need for this personalisation to be based on fixed tariff systems, i.e. assigning a specific economic value to each personalisation parameter.

In the field of value proposition, it is noteworthy that respondents attach importance to the existence of a MAAS system to complement the network to be implemented and to meet travel needs that cannot be covered by air transport. These needs include travel between airports and city centres. The need for integration is also conveyed by the open-ended responses. The MAAS system receives positive opinions, with the highest scores (Score=5) standing out.

Moving on to the statements relating to key activities, it was attempted to assess opinions on the network structure, whether it was point-to-point or hub based. It was also

evaluated the network proposed in the Product Canvas analysis phase. Additionally, it was important to gather opinions on bridging network gaps through non-regular operation.

Starting with an analysis of the respondents' support for a point-to-point network, it is evident that the response is positive, despite the high number of destinations to be covered. From the perspective of consumer comfort, a point-to-point network is preferable, which explains the high rate of positive responses. However, as anticipated, when comparing the value obtained for the point-to-point network with that of the hub-and-spoke network, the latter is superior. On an individual level, there are contrasting responses favouring the hub-and-spoke network, but positive evaluations are present across all models being evaluated. However, the advantage clearly lies with the hub-and-spoke network, as concluded in the discussion phase of the product canvas.

It is important to note that regardless of the type of network to be used, the survey indicates strong support for the proposed network to be complemented by charter operations to meet supply needs that are not adequately covered by demand. This statement has received a positive consensus, with over 80% of responses being positive (Score < 3).

Finally, the proposed network presented in the Product Canvas discussion was evaluated by the respondents. The network is based on a hub-and-spoke model with hubs in Lisbon, Madrid, Barcelona, and Casablanca. It received an overwhelmingly positive evaluation with 70% of the responses being positive. In the open response field, a suggestion was made to offer a route between Lisbon and the Canary Islands to improve the network's coverage. This proposal would enable an expansion of the network, considering the current daily route during the IATA summer season. If the Canary Islands are included as World Cup destinations, this route could also be available during the 2030 World Cup.

The survey results show that both corporate and leisure customers are seen as potential beneficiaries of the pass. However, it is difficult to determine which group will be the primary users and beneficiaries of the product, as respondents generally had a favourable view of both statements.

The section on distribution channels and customer contact attempted to assess the potential benefits of internalising these channels. It was recommended that the primary means of customer contact should be through online channels, such as a website or

mobile application. The response to this recommendation was overwhelmingly positive, with an average score of 4,10. This demonstrates the importance of having a proper online channel for personalisation and activation of the pass.

The evaluation considered the possibility of forming partnerships with third parties for the use of distribution services, particularly during sales. The statement is unclear as to whether there should be no partners, but it does express a preference for using either own or third-party means for distribution. Therefore, it is evident that there is a consensus to avoid third-party channels, although it is not entirely certain that this is the best approach. The responses were distributed among various classifications, which lowered the average classification, but 60% of the responses indicated a preference for avoiding third-party systems.

Next, it is measured the quality of the flight pass as a means of automated customer relationship. This allows the pass to be included in subscription business models, where automated customer relationship is the main characteristic. The respondents have responded positively to the inclusion of the flight pass in the automated relationship category due to its inherent personalisation, with an average response of 4,13. Only 6% of the responses were negative.

The viability of a miles programme was evaluated, considering the personalisation inherent in the Flight Pass. The argument assessed whether the simplification achieved through the subscription model would be compromised by the existence of a miles programme. The survey indicates a dispersion of responses, although, they are positive. This suggests that the respondents agree with the statement that a miles programme creates a barrier to simplification, which in turn hinders the relationship with the customer and a simpler value proposition.

To gauge opinions on a non-competition agreement, navigate to the Key Partnerships tab. This agreement involves dividing the market among various companies to improve network coverage and better serve customers. The feedback on this agreement is mostly positive, with some respondents being undecided (27,1%). The average rating is 3,71.

The high-frequency use of aircraft implies a significant consumption of resources. Therefore, the possibility of leasing aircraft to cover peak demand needs is being evaluated. Respondents have expressed a positive attitude towards aircraft leasing, suggesting that this scheme should be used in cases of need. On average, respondents rated this option 4,15 out of 5, with 85% of responses being positive.

The analysis also considered the use of main airports located closer to city centres. Despite the higher fees charged by airport operators, respondents agreed on the necessity of flying mainly to these airports, with an average score of 3,94 and over 74% positive responses.

From a resource utilization perspective, especially in aviation, it is essential to prioritize high-frequency schedules with narrow-body aircraft. Although they carry fewer passengers, the savings are significant, particularly when implemented in a high-frequency system. This approach allows passengers to travel more comfortably as schedules align better with their needs, thereby stimulating demand. The survey shows a preference for high frequencies in narrow-body aircraft rather than lower frequencies in wide-body aircraft. The scheme received 62% positive responses and an average score of 3,73, indicating mixed views about the issue but an overall positive perspective on the affirmation.

Ultimately, the business model canvas was built using limited data. The flow of income and expenses was assessed, with a special focus on positioning the flight pass as a product that generates new income streams and for the revenue management system.

The survey considered the proposition that the proposed flight pass would increase load factor and, consequently, revenue per passenger flown. The additional demand generated by the flight pass is crucial for increasing revenue per flight. Over 68% of respondents affirmed this statement, with a low rate of negative responses and an average rating of 3,81.

Finally, the study evaluated the possibility of determining the price of the flight pass through a modern revenue management system. Once the price is defined, it will be locked in for the customer, who can then book the trip when needed. For the following statement: "The revenue management system could define the price of the Flight Pass, with the prospect of obtaining fixed prices in advance for trips without a specific destination and date at the time of purchase." the average response was 3,81, indicating a mixed review with 58% of responses equal to 4.

Regarding the open response suggestions, a significant number of people participated. Some ideas were reiterated, and certain raised concerns were addressed.

Firstly, there is a concern related to low carbon connections. European political will aims to reduce the number of short air journeys, including peninsular journeys. An air pass with freer access to air transport is considered counterproductive. Although this

weakness is acknowledged, the increasing use of SAF may alleviate this concern despite higher costs.

The importance of modern revenue management systems is highlighted as a crucial factor, as covered in the Business Model Canvas above. Additionally, a seamless experience between stakeholders is emphasised.

They highlight the advantage of a more flexible pass over a cheaper one. This, in combination with a MAAS system, is crucial for SMEs to create a robust pass that can unite all stakeholders on a single platform, preferably a mobile application.

Although one response points out the need to restrict access to European citizens, it does not provide further explanation. While the concern is understandable given the Schengen area's composition, it is suggested to keep access open to all nationalities in compliance with current legislation.

Some experts highlight the problem of using an existing network, bearing in mind that for this network to be viable, it must already have a satisfactory load factor and therefore any increase in demand must be covered by non-scheduled operations. This was already foreseen in the key partnerships of the business model canvas. Conversely, the limiting factor for this type of operation is the ability to find slots at airports that can cover this service at times that are competitive for the operator. The issue at hand is not easily solvable and was not anticipated in this work. However, it is believed that utilising secondary airports and other modes of transportation within a MAAS platform could potentially alleviate this problem. It is important to note that the suggested flight pass, which allocates a set number of trips in advance, enables more precise demand forecasting.

The importance of personalisation is emphasised, particularly for leisure customers travelling to support their team. It is recommended that the flight pass purchase information includes the customer's associated team to better anticipate their demand. At an individual level, customers find it more relevant and comfortable to have a pass tailored to their needs. Meanwhile, the company can better predict which routes will be in high demand and integrate this information into their yield management systems. To appeal to this type of customer, it is emphasised the inconvenience of a team being disqualified and the subsequent cancellation of their travel plans. This poses a risk to the consumer and may deter them from purchasing the flight pass. The flight pass's value proposition is not compatible with real-time reimbursement or purchases. The product

canvas is designed for advance purchases, and this specificity should be considered. To better target this customer segment, the flight pass can be purchased during the World Cup, subject to availability.

Finally, the survey indicates that the proposed flight pass solution is satisfactory and well-received by experts. The survey highlights the need for coordination among stakeholders and an application that enables efficient communication between the customer and other operators. Environmental concerns may pose a threat to the flight pass. The biggest challenge for the success of this product is forecasting demand. Operating at full capacity is crucial for the flight pass to align with the revenue generation strategy.

## **4.7 Result analysis**

The empirical analysis has led to the development of the business model canvas presented here. Applying the World Cup 2030 results includes analysing the results through a case study. The explicit results of this analysis are revealed through the canvas that has been obtained and the accompanying description of each building block.

The main results of the discussion with SMEs were retained. However, some concerns were raised and were already addressed in the Business Model Canvas. These include the need to adjust demand based on accurate predictions and concerns about carbon emissions and environmental impact, which can be addressed through the use of Sustainable Aviation Fuel.

It is necessary to validate the obtained results through a real simulation, and the proposed business model should be implemented as an unbundling case of a parent company, focusing on product innovation. To implement this innovative product, resources and an existing organisational structure are required. This model cannot be applied in isolation. This model, as demonstrated, should only be used as a means to increase the load factor of each flight. It has benefits only in terms of increasing revenue and demand through product innovation. Consequently, the customer acquires access to a wider range of travel options through the provision of a system that, while already categorised under MAAS, has the potential to develop into an integrated MAAS service encompassing all modes of transportation.

## **4.8 Conclusion**

This chapter concludes that an unbundled business model with the presented structure is workable. This model makes it possible to cover all the possible destinations of the 2030 World Cup in a network system with multiple hubs. It is essential to be connected to the other modes of transport within the MAAS platform. The value proposition as a starting point determines that the best and most convenient way for both passengers and the company is the "consumables" model, where a single purchase allows for a regular supply of trips in the 2030 World Cup region.

This type of Flight Pass is not viable in its current form as a stand-alone business model that must own all resources. It must be associated with another business model that has the resources. It is just a way to increase load factors and increase revenue predictability while creating a system of loyal customers.

## Chapter 5

### Conclusions

#### 5.1 Dissertation synthesis

This dissertation comprises five chapters.

In the first chapter of this dissertation, the motivations were explained, and the current uncertainties related to the subject under study were presented. Subscription services emerged, presenting the dynamics of the *servitization* of the economy. Likewise, in the aviation industry, business models are demonstrating a movement towards integrating subscription solutions. As part of the process, the aim and objectives, as well as the direction of the work, were defined. The final case study was defined and the stages of state-of-the-art presentation, empirical study and finally case study were analysed.

The second chapter presents the relevant theoretical concepts in the context of the objectives of the dissertation. As such, the concepts have been introduced and their current status presented. In particular, the concepts of business model, business model according to the method chosen as an analysis tool for the empirical and study cases, the Business Model Canvas. The Business Model Canvas allows for the visual representation of the interrelationships between the different building blocks of the business model and the manner in which they facilitate revenue generation. Business models in aviation were also presented, with the two current models in the full-service and low-cost spectrum described in detail. Subscription business models were mentioned, their benefits and trends were described, and they were classified according to different authors. Finally, the forms of subscription applied to aviation and the way the system optimises revenue for each flight, the Revenue Management System, were discussed.

The third chapter describes and evaluates the various scientific articles related to business models in aviation, product innovation, product analysis, and the application of the Business Model Canvas to aviation, making it possible to describe a method for analysing the Flight Pass and the business models of the five airlines to be studied, ranging from FSNC to low-cost with and without Flight Pass: Alaska Airlines, Frontier Airlines, Air Canada, TAP Air Portugal and Ryanair. Each of these companies was studied through an inductive analysis of their websites and investor reports describing the

building blocks of the Business Model Canvas and building the visual tool. The Flight Pass was also analysed using the method described and the Product Canvas visual tool to analyse the product and its relationship to the organisational component of the company.

Chapter 4 saw the application of the empirical knowledge obtained through the examination of the companies in Chapter 3. Using the same visual tools as the canvas and its building blocks, it was possible to construct the relationship between the flight pass and a new business model integrated into the structure of a company but acting autonomously. To do this, it was described the problem and created the network of objectives and the value proposition to be presented to the customer. From there, the remaining building blocks could be determined based on the knowledge gained in Chapter 3 and against the constraints imposed by the characteristics of the problem, the defined value proposition, and the network of activities to be fulfilled. Furthermore, the conclusions were validated by consulting with experts in the aviation sector using the canvas, thus providing the feedback necessary to discuss the choices made.

Finally, Chapter 5 summarises the dissertation, its conclusions, and prospects for future work.

## **5.2 Concluding remarks**

Current trends in the airline industry point to a greater prevalence of yield and revenue management systems, which are evolving into subscription-based forms of aviation. These are designed to increase revenue per seat and flight. Making the most of unallocated capacity is ideal, so any form that allows empty seats to be filled with a stable and predictable revenue stream is ideal for bridging the increasingly complex revenue management systems. Leveraging big data to optimise revenue and occupancy is the way forward, supported by artificial intelligence technologies.

However, such systems are expensive, and in this context, Flight Pass has emerged as a product innovation. This system is not solely concerned with improving revenue management; its primary objective is to sell the concept of air travel rather than just aeroplane seats. It is a system that has room to grow, and current deployments show that more companies are adopting it. However, it is applied in diverse ways, which shows the difficulty of implementing this system. This study concludes that the Flight Pass is currently just a form of innovation with no expression in the companies that have adopted it, fulfilling the needs of a very limited segment of customers. Particularly

noteworthy is the system of Frontier Airlines, which, to satisfy a limited segment of customers, seeks to increase the occupancy of its planes for a subscription that allows access to empty seats. Although it may cause inconvenience to customers, such as unpredictable travel, the system offers increased flexibility and cost-effectiveness in air travel. It is, therefore, disruptive. The other companies studied have adopted models that still allow them to increase revenues through predictability and optimisation of resources. This type of product also serves as a form of customer loyalty and interaction.

In the case study of the World Cup 2030, it was concluded that it is impossible to present a company with a flight pass as the only product for an event of this size, so it should be part of the company's innovation strategy, enabling a new form of interaction with the customer. Besides the proposed interactions with public and private transportation partners in a MAAS system. The allocation of resources to a Flight Pass exclusive use model is an unattainable approach to resource management. First, these resources must be allocated to the current revenue management system, and the increase in load factor can be achieved through the Flight Pass.

This work also demonstrated a possible transportation solution for the movement of tourists during the 2030 World Cup.

In the end, all the proposed objectives were met. Emphasising the impossibility of validating the developed canvas. Only with real data can deeper conclusions be drawn about the effectiveness of the proposed solution and the future of Flight Pass applied to large, time-limited events.

### **5.3 Future Works**

Future work is proposed to support better design of the business model canvas:

- Demand study for each route, simulating occupancy;
- Flight Pass price optimisation study depending on the customisations chosen;
- In-depth study of the cost and revenue structure applied to this case study;



## References

- Air Canada. (2023a). *2022 - Annual Information Form*. Retrieved 24 November 2023, from [https://filecache.investorroom.com/mr5ircnw\\_aircanada/422/2022%20AIF%20-%20FINAL\\_EN.pdf](https://filecache.investorroom.com/mr5ircnw_aircanada/422/2022%20AIF%20-%20FINAL_EN.pdf)
- Air Canada. (2023b). *2022 Annual Report*. Retrieved 24 November 2023, from [https://filecache.investorroom.com/mr5ircnw\\_aircanada/426/AC\\_Annual%20Report%202023\\_EN\\_FINAL.pdf](https://filecache.investorroom.com/mr5ircnw_aircanada/426/AC_Annual%20Report%202023_EN_FINAL.pdf)
- Air Canada. (2023c). *Air Canada*. Retrieved 24 November 2023, from <https://www.aircanada.com/ca/en/aco/home.html>
- Air Canada. (2023d). *Air Canada - Flight Pass*. Retrieved 10 December 2023, from <https://fp.aircanada.com/>
- Airfleets.net. (2023a). *Ryanair Holding Group Fleet Details*. Airfleets.Net. Retrieved 5 December 2023, from <https://www.airfleets.net/flottecie/Ryanair%20Holdings%20Group.htm>
- Airfleets.net. (2023b). *TAP Air Portugal Fleet Details*. AIRFLEETS.NET. Retrieved 28 November 2023, from <https://www.airfleets.net/ageflotte/TAP%20Air%20Portugal.htm>
- Alaska Air Group. (2023). *Annual Report on Form 10-K for the year ended December 31, 2022*. Retrieved 4 November 2023, from <https://investor.alaskaair.com/static-files/fo23aedd-998b-4f10-ac81-1a1811583ea5>
- Alaska Airlines. (2023a). *Alaska Airlines*. Retrieved 4 November 2023, from <https://www.alaskaair.com/>
- Alaska Airlines. (2023b). *Alaska Airlines - Flight Pass*. Retrieved 8 December 2023, from <https://flightpass.alaskaair.com/asa/subscriptions>
- Alaska Airlines News. (2023, August 29). *Easy-breezy global travel: Verify your passport from home with Alaska Airlines' Mobile Verify program*. Retrieved 5

November 2023, from <https://news.alaskaair.com/alaska-airlines/mobile-verify-documents-for-international-travel/>

American Customer Satisfaction Index. (2023). *ACSI Travel Study 2022-2023*. Retrieved 7 November 2023, from [https://theacsi.org/wp-content/uploads/2023/04/23apr\\_TRAVEL-Report.pdf](https://theacsi.org/wp-content/uploads/2023/04/23apr_TRAVEL-Report.pdf)

Amit, R., & Zott, C. (2001). Value creation in E-business. *Strategic Management Journal*, 22(6–7), 493–520. <https://doi.org/10.1002/SMJ.187>

Asquith, J. (2019, November 13). *Unlimited First Class Flights For Life—How American Airlines Made The Most Expensive Mistake In Aviation History*. Forbes. Retrieved 25 September 2023, from <https://www.forbes.com/sites/jamesasquith/2019/11/13/unlimited-first-class-flights-for-lifehow-american-airlines-made-the-most-expensive-mistake-in-aviation-history/>

AVRAM, B. (2017). Ancillaries in the Aviation Industry. Importance, Trends, Going Digital. *Expert Journal of Marketing*, 5(2), 53–65.

Baden-Fuller, C., & Morgan, M. S. (2010). Business Models as Models. *Long Range Planning*, 43(2–3), 156–171. <https://doi.org/10.1016/j.lrp.2010.02.005>

Baldanza, B. (2022, February 25). Debunking The Alaska Airlines Flight Pass Subscription Plan. *Forbes*. Retrieved 5 June 2023, from <https://www.forbes.com/sites/benbaldanza/2022/02/25/debunking-the-alaska-airlines-flight-pass-subscription-plan/>

Barseghian, A. (2019, August 12). What's Behind The Rise Of The Subscription Model? *Forbes*. Retrieved 1 June 2023, from <https://www.forbes.com/sites/forbestechcouncil/2019/08/12/whats-behind-the-rise-of-the-subscription-model/>

Beers, B. (2022, July 28). *How Does Load Factor Impact Airline Profitability?* Investopedia. Retrieved 8 November 2023, from <https://www.investopedia.com/ask/answers/041515/how-can-i-use-load-factor-indicator-profitability-airline-industry.asp>

- Belobaba, Peter., Odoni, A. R., & Barnhart, Cynthia. (2009). *The global airline industry*. Wiley.
- Bickford, O. (2019, August). *How Alaska Airlines leveraged search data to fill empty seats*. Think with Google. Retrieved 6 November 2023, from <https://www.thinkwithgoogle.com/future-of-marketing/emerging-technology/alaska-airlines-search-campaign/>
- Boyles, M. (2022, October 2). *WHAT IS BUSINESS STRATEGY & WHY IS IT IMPORTANT?* Harvard Business School Online. Retrieved 4 July 2023, from <https://online.hbs.edu/blog/post/what-is-business-strategy>
- Buck, S., & Lei, Z. (2004). Charter Airlines: Have They a Future? *Tourism and Hospitality Research*, 5(1), 72–78. <https://doi.org/10.1057/palgrave.thr.6040007>
- Calle, Á. (2022, March 25). Comboios privados conquistam Espanha. *Expresso*. Retrieved 7 January 2024, from <https://leitor.expresso.pt/semanario/semanario2578/html/economia/temas/comboios-privados-conquistam-espanha>
- Carbonaro, G. (2022, August 25). Subscription flights: All-you-can-fly tickets could ‘incentivise’ avoidable air travel. *Euronews.Travel*. Retrieved 7 June 2023, from <https://www.euronews.com/travel/2022/08/25/this-airline-lets-you-pay-43-a-month-for-unlimited-flights-here-s-why-it-s-a-bad-idea>
- Carmel, J. (2023, May 12). I spent \$399 on Frontier’s ‘All You Can Fly’ pass. Is it worth the hype? *Los Angeles Times*. Retrieved 5 June 2023, from <https://www.latimes.com/travel/story/2023-05-12/frontier-airlines-gowild-all-you-can-fly-worth-it>
- Casadesus-Masanell, R., & Ricart, J. E. (2010). From Strategy to Business Models and onto Tactics. *Long Range Planning*, 43(2–3), 195–215. <https://doi.org/10.1016/J.LRP.2010.01.004>
- Chesbrough, H., & Rosenbloom, R. S. (2002). The role of the business model in capturing value from innovation: evidence from Xerox Corporation’s technology spin-off companies. *Industrial and Corporate Change*, 11(3), 529–555. <https://doi.org/10.1093/ICC/11.3.529>

- Clapp, S. (1931). The Beginnings of Subscription Publication in the Seventeenth Century. *Modern Philology*, 29(2), 199–224. <https://doi.org/10.1086/387957>
- Cleverism. (2023). *Alaska Airlines*. Cleverism. Retrieved 5 November 2023, from <https://cleverism.com/company/alaska-airlines/>
- Dawes, J. (2023, April 19). *Alaska Airlines To Eliminate Airport Kiosks in \$2.5 Billion Tech Upgrade*. Skift. Retrieved 5 November 2023, from <https://skift.com/2023/04/19/alaska-airlines-to-eliminate-airport-kiosks-in-2-5-billion-tech-upgrade/>
- DINAC. (2023). Movimiento de Pasajeros 2022. In *MOVIMIENTO PASAJEROS ANUARIO 2022*. Retrieved 19 December 2023, from [https://www.dinac.gov.py/estadisticas/1\\_MOVIMIENTO\\_PASAJEROS\\_ANUARIO\\_2022.pdf](https://www.dinac.gov.py/estadisticas/1_MOVIMIENTO_PASAJEROS_ANUARIO_2022.pdf)
- DINACIA. (2023). LAS CIFRAS DE LA AVIACIÓN CIVIL EN URUGUAY AÑO 2022. In *ESTADÍSTICAS DEL TRANSPORTE AÉREO COMERCIAL*. Retrieved 19 December 2023, from <https://www.dinacia.gub.uy/sites/default/files/2023-05/Bolet%C3%ADn%20Estad%C3%ADstico%20a%C3%B1o%202022.pdf>
- Dirección de Operaciones y Red de Aeropuertos. (2023). TRÁFICO DE PASAJEROS, OPERACIONES Y CARGA EN LA RED DE AENA. In *AENA*. Retrieved 19 December 2023, from <https://www.aena.es/es/estadisticas/informes-anales.html>
- Dunn, T. J. (2020, May 12). *A Guide to Airline Flight Passes Around the World*. Prince of Travel. Retrieved 5 June 2023, from <https://princeoftravel.com/guides/a-guide-to-airline-flight-passes-around-the-world/>
- ECO. (2023, August 14). Renfe planeia expansão ferroviária para Portugal até 2027. *ECO*. Retrieved 7 January 2024, from <https://eco.sapo.pt/2023/08/14/renfe-planeia-expansao-ferroviaria-para-portugal-ate-2027/>
- Eugenio-Martin, J. L., & Perez-Granja, U. (2021). Have Low-Cost Carriers Crowded Out Full Services and Charter Carriers in Tourism Destinations? A Trivariate Structural Time Series Analysis. *Journal of Travel Research*, 60(4), 810–832. <https://doi.org/10.1177/0047287520910801>
- European Central Bank. (2012). *Virtual currency schemes*. European Central Bank.

- FFMS. (2023, November 17). *Tráfego de passageiros nos aeroportos: Lisboa, Porto e Faro*. PORDATA. Retrieved 19 December 2023, from <https://www.pordata.pt/portugal/trafego+de+passageiros+nos+aerportos+lisboa++porto+e+faro-3248-292100>
- Fichert, F., Kirschnerová, I., & Tomová, A. (2020). Business models in business aviation – An empirical analysis with a focus on Air Charter Companies. *Research in Transportation Economics*, 79. <https://doi.org/10.1016/j.retrec.2019.100794>
- FIFA. (2023). *FIFA World Cup 2030 and 2034 FIFA World Cup 2034 - Overview of the Bidding Process*. Retrieved 18 December 2023, from [https://digitalhub.fifa.com/m/28801bb1a9d35eac/original/-1861\\_Bidding-processes-for-the-FIFA-World-Cup-2030-and-the-FIFA-World-Cup-2034.pdf](https://digitalhub.fifa.com/m/28801bb1a9d35eac/original/-1861_Bidding-processes-for-the-FIFA-World-Cup-2030-and-the-FIFA-World-Cup-2034.pdf)
- Fiig, T. (2020, September 3). *Competitor awareness – the future of airline revenue management systems*. Amadeus. Retrieved 3 November 2023, from <https://amadeus.com/en/insights/blog/competitor-aware-revenue-management-system-airlines>
- FlightConnections. (2023). *FlightConnections*. Retrieved 4 November 2023, from <https://www.flightconnections.com/>
- FLIGHTSFROM.COM. (2024). All scheduled direct (non-stop) flights from. In *FLIGHTSFROM.COM*. Retrieved 4 January 2024, from <https://www.flightsfrom.com/>
- Frontier Group Holdings Inc. (2023a). *Frontier Group Holdings, Inc. Form 10-K*. <https://ir.flyfrontier.com/static-files/38fe19c0-5c43-4af2-8fb6-a8f8a4bc6ea1>
- Frontier Group Holdings Inc. (2023b). *Frontier Airlines*. Retrieved 16 November 2023, from <https://www.flyfrontier.com/>
- Fruhirth, M., Breitfuss, G., & Pammer-Schindler, V. (2020). THE DATA PRODUCT CANVAS A VISUAL COLLABORATIVE TOOL FOR DESIGNING DATA-DRIVEN BUSINESS MODELS. *33rd Bled EConference: Enabling Technology for a Sustainable Society, BLED 2020 - Proceedings*, 515–528. <https://doi.org/10.18690/978-961-286-362-3.35>

- Gillen, D. (2006). Airline Business Models and Networks: Regulation, Competition and Evolution in Aviation Markets. *Review of Network Economics*, 5(4), 366–385. <https://doi.org/https://doi.org/10.2202/1446-9022.1103>
- Gillen, D., & Gados, A. (2008). Airlines within airlines: Assessing the vulnerabilities of mixing business models. *Research in Transportation Economics*, 24(1), 25–35. <https://doi.org/10.1016/j.retrec.2009.01.002>
- Gillis, M. M. D. (2018). *Optimising flight pass prices A Kenya Airways case study* [Delft University of Technology]. <http://repository.tudelft.nl/>.
- Greenpeace. (2023). *Ticket Prices of Planes vs Trains - A Europe-wide analysis*. Retrieved 7 January 2024, from <https://greenpeace.at/uploads/2023/07/report-ticket-prices-of-planes-vs-trains-in-europe.pdf>
- Guha, P. (2022, September 14). *BEST JET CARD PROGRAMS OF 2023*. Best PrivateJet. Retrieved 5 June 2023, from <https://www.bestprivatejet.com/best-private-jet-card-programs/#:~:text=Top%2010%20Private%20Jet%20Card%20Companies%20%20Flexjet,%E2%80%94%20Best%20for%20Empty%20Leg%20Flights%20Mais%20itens>
- Hulme, K. (2022, August 30). *Another Airline Launches Unlimited Flight Subscription Model*. Travel off Path. Retrieved 7 June 2023, from <https://www.traveloffpath.com/another-airline-launches-unlimited-flight-subscription-model/>
- Hutin, I. (2023, April 19). Más pasajeros en Ezeiza, pero ningún plan para acercarlos al aeropuerto. *El Economista*. Retrieved 19 December 2023, from <https://eleconomista.com.ar/actualidad/mas-pasajeros-ezeiza-pero-ningun-plan-acercarlos-aeropuerto-n61587>
- ICAO. (2004). *Manual on the Regulation of International Air Transport: Vol. Doc 9626* (Second Edition-2004). International Civil Aviation Organization. Retrieved 4 September 2023, from [https://www.icao.int/meetings/atconf6/documents/doc%209626\\_en.pdf](https://www.icao.int/meetings/atconf6/documents/doc%209626_en.pdf)

- Iyengar, R., Park, Y.-H., & Yu, Q. (2020). The Impact of Subscription Programs on Customer Purchases. *SSRN Electronic Journal*.  
<https://doi.org/10.2139/ssrn.3529681>
- Jean, D. A., & Lohmann, G. (2016). Revisiting the airline business model spectrum: The influence of post global financial crisis and airline mergers in the US (2011–2013). *Research in Transportation Business & Management*, 21, 76–83.  
<https://doi.org/10.1016/j.rtbm.2016.06.002>
- Jettly. (2021, November 11). *Private Jet Card Programs vs. Private Jet Fractional Ownership – What Makes the Most Sense?* Retrieved 27 September 2023, from <https://jettly.com/post/private-jet-card-programs-vs-private-jet-fractional-ownership-%E2%80%93-what-makes-the-most-sense>
- Johnson, M., Christensen, C. C., & Kagermann, H. (2008). Reinventing Your Business Model. *Harvard Business Review*, 87, 52–60.
- Kagan, J. (2020, July 25). *Available Seat Miles (ASM): Overview of Airline Capacity Metric*. Investopedia. Retrieved 8 November 2023, from <https://www.investopedia.com/terms/a/availableseatmiles.asp>
- Kalakou, S., & Macário, R. (2013). An innovative framework for the study and structure of airport business models. *Case Studies on Transport Policy*, 1(1–2), 2–17.  
<https://doi.org/10.1016/j.cstp.2013.09.001>
- Karki, S. (2023). *Where are Frontier Hubs? [with Travel Guide 2024]*. AviaTech. Retrieved 17 November 2023, from <https://aviatechchannel.com/where-are-frontier-hubs/#where-are-frontier-hubs-explore-primary-hub-focus-airports>
- Kenton, W. (2021, March 28). *Revenue Per Available Seat Mile (RASM): Overview, Calculations*. Investopedia. Retrieved 8 November 2023, from Revenue Per Available Seat Mile (RASM): Overview, Calculations
- Kenton, W. (2022, August 19). *Revenue Passenger Mile (RPM): Defining a Transportation Metric*. Investopedia. Retrieved 8 November 2023, from <https://www.investopedia.com/terms/r/revenue-passenger-mile-rpm.asp>
- Kline, W., Hixson, C., Mason, T., Brackin, P., Bunch, R., Dee, K. C., & Livesay, G. (2013). The Innovation Canvas - A Tool to Develop Integrated Product Designs and

- Business Models. *2013 ASEE Annual Conference & Exposition Proceedings*, 23.1218.1-23.1218.20. <https://doi.org/10.18260/1-2--22603>
- Kuyucak Şengür, F., & Şengür, Y. (2020). Innovation Through Business Models: The Case of the Airline Industry. In *Travel and Tourism: Sustainability, Economics, and Management Issues* (pp. 85–99). Springer Singapore. [https://doi.org/10.1007/978-981-10-7068-6\\_5](https://doi.org/10.1007/978-981-10-7068-6_5)
- Lawler, O., & Tara, S. (2023, May 3). Frontier Just Discounted Its Summer Pass for Unlimited Flights. *Thrillist*. Retrieved 7 June 2023, from <https://www.thrillist.com/news/nation/frontier-airlines-summer-pass-unlimited-flights-subscription>
- Lee-Anant, C. (2022). The Importance of Frequent Flyer Programs: An In-depth Analysis. *Journal of Aerospace Technology and Management*, 14. <https://doi.org/10.1590/jatm.v14.1254>
- LUSA. (2023, October 19). Mundial 2030 deverá ser jogado em 18 estádios: Luz, Dragão e Alvalade já receberam visitas técnicas. *Tribuna - Expresso*. Retrieved 18 December 2023, from <https://tribuna.expresso.pt/futebol-internacional/2023-10-19-Mundial-2030-devera-ser-jogado-em-18-estadios-Luz-Dragao-e-Alvalade-ja-receberam-visitas-tecnicas-a59ea368>
- Lusa, & SIC Notícias. (2022, December 19). Qatar recebeu 1,4 milhões de visitantes durante o Mundial. *SIC Notícias*. Retrieved 5 January 2024, from <https://sicnoticias.pt/especiais/mundial-de-futebol/2022-12-19-Qatar-recebeu-14-milhoes-de-visitantes-durante-o-Mundial-7boab014>
- MAAS Aliance. (2017). *White Paper - Guidelines & Recommendations to create the foundations for a thriving MAAS Ecosystem*.
- Magretta, J. (2002). Why Business Models Matter. *Harvard Business Review*, 80, 86–92, 133.
- Mason, K. J., & Morrison, W. G. (2008). Towards a means of consistently comparing airline business models with an application to the ‘low cost’ airline sector. *Research in Transportation Economics*, 24(1), 75–84. <https://doi.org/10.1016/j.retrec.2009.01.006>

- Meng, L., Somenahalli, S., & Berry, S. (2020). Policy implementation of multi-modal (shared) mobility: review of a supply-demand value proposition canvas. *Transport Reviews*, 40(5), 670–684. <https://doi.org/10.1080/01441647.2020.1758237>
- Merkert, R., & Beck, M. J. (2020). Can a strategy of integrated air-bus services create a value proposition for regional aviation management? *Transportation Research Part A: Policy and Practice*, 132, 527–539. <https://doi.org/10.1016/j.tra.2019.12.013>
- Mola, L., Berger, Q., Haavisto, K., & Soscia, I. (2020). Mobility as a Service: An Exploratory Study of Consumer Mobility Behaviour. *Sustainability*, 12(19), 8210. <https://doi.org/10.3390/su12198210>
- Morris, M., Schindehutte, M., & Allen, J. (2005). The entrepreneur's business model: toward a unified perspective. *Journal of Business Research*, 58(6), 726–735. <https://doi.org/10.1016/J.JBUSRES.2003.11.001>
- OAG. (2023, April 5). *The Evolution of Airline Revenue Management: The Impact of Emerging Technologies*. OAG. Retrieved 22 September 2023, from <https://www.oag.com/blog/airline-revenue-management-impact-technologies>
- ONDA. (2023). Les statistiques du trafic aérien du mois de décembre 2022. In ONDA. Retrieved 19 December 2023, from <https://www.onda.ma/en/Je-suis-Professionnel/Statistiques/Statistiques>
- Osterwalder, A. (2004). *THE BUSINESS MODEL ONTOLOGY A PROPOSITION IN A DESIGN SCIENCE APPROACH*. Ecole des Hautes Etudes Commerciales de l'Université de Lausanne.
- Osterwalder, A., & Pigneur, Y. (2010). *Business Model Generation*. John Wiley & Sons, Inc.
- Osterwalder, A., Pigneur, Y., Bernarda, G., Smith, A., & Papadakos, P. (2014). *Value Proposition Design*. John Wiley & Sons.
- Pak, K., & Piersma, N. (2002). *Airline Revenue Management*. <https://www.researchgate.net/publication/4781132>

- Parsons, M. (2023, April 20). Wizz Air Launches Flight Subscription Program. *Skift*. Retrieved 5 June 2023, from <https://skift.com/blog/wizz-air-launches-flight-subscription-program/>
- Pichler, R. (2012, July 16). *The Product Canvas*. Romanpichler. Retrieved 22 October 2023, from <https://www.romanpichler.com/blog/the-product-canvas/>
- Planespotters.net. (2023). *Ryanair Holdings Group*. Planespotters.Net. Retrieved 5 December 2023, from <https://www.planespotters.net/airline/Ryanair-Holdings-Group>
- Prieto, M. (2023, January 5). *Flight Subscriptions - A Win for Airlines and Travelers*. Travel Tech Essentialist - Substack. Retrieved 7 June 2023, from <https://traveltechessentialist.substack.com/p/flight-subscriptions-a-win-for-airlines>
- Private Jet Cards Comparisons. (n.d.). *Frequently Asked Questions about Jet Cards*. Retrieved 27 September 2023, from <https://privatejetcardcomparisons.com/frequently-asked-questions/>
- Prussi, M., & Lonza, L. (2018). Passenger Aviation and High Speed Rail: A Comparison of Emissions Profiles on Selected European Routes. *Journal of Advanced Transportation*, 2018, 1–10. <https://doi.org/10.1155/2018/6205714>
- Reis, V., & Silva, J. (2016). Assessing the air cargo business models of combination airlines. *Journal of Air Transport Management*, 57, 250–259. <https://doi.org/10.1016/j.jairtraman.2016.08.011>
- Reunanen, S. (2020). *Creating a New Business Model by Using Business Model Innovation Tools and Identifying the Feasibility of Subscription Business as Part of the Business Model. Case: Finnish Golf Service Intermediate*. Laurea University of Applied Sciences .
- Reuters. (2023, October 20). Morocco to build new stadium, upgrade six others before 2030 World Cup. *Reuters*. Retrieved 18 December 2023, from <https://www.reuters.com/sports/soccer/morocco-build-new-stadium-upgrade-six-others-before-2030-world-cup-2023-10-20/>

- RFEF. (2022). El fútbol español vive una jornada clave en su ilusión compartida de poder organizar el Mundial 2030. In *RFEF - Actialidad*. Retrieved 18 December 2023, from <https://rfef.es/es/noticias/futbol-espanol-vive-jornada-clave-su-ilusion-compartida-poder-organizar-mundial-2030>
- Ryanair Group. (2023a). *2023 Sustainability Report*. Retrieved 4 December 2023, from <https://corporate.ryanair.com/wp-content/uploads/2023/07/Ryanair-2023-Sustainability-Report.pdf><https://corporate.ryanair.com/wp-content/uploads/2023/07/Ryanair-2023-Sustainability-Report.pdf>
- Ryanair Group. (2023b). *Ryanair Group Annual Report 2022*.
- Ryanair Group. (2023c). *Ryanair*. Retrieved 30 November 2023, from [www.ryanair.com](http://www.ryanair.com)
- Ryanair Holdings plc. (2023). *Form 20-F - Annual Report 2023*.
- Schuh, G., Doelle, C., & Ebi, M. (2018). Methodology for Business Model Related Product Design. *2018 Portland International Conference on Management of Engineering and Technology (PICMET)*, 1–8. <https://doi.org/10.23919/PICMET.2018.8481925>
- Sengur, Y., & Sengur, F. K. (2017). Airlines define their business models: A content analysis. *World Review of Intermodal Transportation Research*, 6(2), 141–154. <https://doi.org/10.1504/WRITR.2017.082732>
- Shaw, S. (2007). *AIRLINE MARKETING AND MANAGEMENT* (Sixth Edition). Ashgate.
- TAP Air Portugal. (2023). *Flight Pass - TAP Air Portugal*. Retrieved 10 December 2023, from <https://flightpass.flytap.com/>
- Taweelertkunthon, N. (2006). *The empirical valuation of the potential success in low cost business model in Asian aviation market* [University of British Columbia]. <https://doi.org/10.14288/1.0092757>
- Teece, D. J. (2010). Business Models, Business Strategy and Innovation. *Long Range Planning*, 43(2–3), 172–194. <https://doi.org/10.1016/J.LRP.2009.07.003>
- Tennant, C. (2023, April 15). High-speed rail is booming in Spain: Could its lower prices and more services be a model for Europe? *Euronews*. Retrieved 7 January 2024,

from <https://www.euronews.com/travel/2023/04/15/high-speed-rail-is-booming-in-spain-could-its-lower-prices-and-more-services-be-a-model-fo>

The Editors of Encyclopaedia Britannica. (n.d.). *Marginal-cost pricing*. Britannica Money. Retrieved 21 September 2023, from <https://www.britannica.com/money/marginal-cost-pricing>

Timmers, P. (1998). Business Models for Electronic Markets. *Electronic Markets*, 8(2), 3–8. <https://doi.org/10.1080/10196789800000016>

Trainline. (2024). Encontrar bilhetes de trem baratos. In *Trainline*. Retrieved 5 January 2024, from <https://www.thetrainline.com/>

Transportes Aéreos Portugueses S.A. (2023a). *2022 MANAGEMENT REPORT AND CONSOLIDATED ACCOUNTS*.

Transportes Aéreos Portugueses S.A. (2023b). *2022 Relatório de Sustentabilidade*.

Transportes Aéreos Portugueses S.A. (2023c). *Management Report and Consolidated Accounts First Half 2023*.

Transportes Aéreos Portugueses S.A. (2023d). *TAP Air Cargo*. Retrieved 26 November 2023, from <https://www.tapcargo.com/pt/produtos>

Transportes Aéreos Portugueses S.A. (2023e). *TAP Air Portugal*. Retrieved 26 November 2023, from <https://www.flytap.com/pt-pt/>

Transportes Aéreos Portugueses S.A. (2023f). *TAP Maintenance and Engineering*. Retrieved 26 November 2023, from <https://www.tapme.pt/en/about-us>

Troy, M. (2023, May 10). *Airline Demand-Supply Imbalance is Good for Revenue, Tough on Customer Experience, Says J.D. Power*. J.D. Power. Retrieved 17 November 2023, from <https://www.jdpower.com/business/press-releases/2023-north-america-airline-satisfaction-study>

Tzuo, T. (2018). *Subscribed* (1<sup>a</sup>). Portfolio/Penguin.

Urban, M., Klemm, M., Ploetner, K. O., & Hornung, M. (2018). Airline categorisation by applying the business model canvas and clustering algorithms. *Journal of Air*

*Transport Management*, 71, 175–192.  
<https://doi.org/10.1016/j.jairtraman.2018.04.005>

Warrillow, J. (2015). *The Automatic Customer - Creating a Subscription Business in Any Industry* (1<sup>a</sup>). Portfolio/Penguin.

Wikipedia contributors. (2023a). Air Canada — Wikipedia, The Free Encyclopedia. In *Wikipedia*.  
[https://en.wikipedia.org/w/index.php?title=Air\\_Canada&oldid=1186280640](https://en.wikipedia.org/w/index.php?title=Air_Canada&oldid=1186280640)

Wikipedia contributors. (2023b). *Alaska Airlines* — *Wikipedia, The Free Encyclopedia*.  
Wikipedia.  
[https://en.wikipedia.org/w/index.php?title=Alaska\\_Airlines&oldid=1182648248](https://en.wikipedia.org/w/index.php?title=Alaska_Airlines&oldid=1182648248)

Wikipedia contributors. (2023c). *Frontier Airlines* — *Wikipedia, The Free Encyclopedia*.  
Wikipedia.  
[https://en.wikipedia.org/w/index.php?title=Frontier\\_Airlines&oldid=1184867149](https://en.wikipedia.org/w/index.php?title=Frontier_Airlines&oldid=1184867149)

Wikipedia contributors. (2023d). *ONCF* — *Wikipedia, The Free Encyclopedia*.  
Wikipedia. <https://en.wikipedia.org/w/index.php?title=ONCF&oldid=1182877773>

Wikipedia contributors. (2023e). *Ryanair* — *Wikipedia, The Free Encyclopedia*.  
Wikipedia.  
<https://en.wikipedia.org/w/index.php?title=Ryanair&oldid=1189379929>

Wikipedia contributors. (2023f). TAP Air Portugal — Wikipédia, a enciclopédia livre. In *Wikipedia*.  
[https://pt.wikipedia.org/w/index.php?title=TAP\\_Air\\_Portugal&oldid=66969759](https://pt.wikipedia.org/w/index.php?title=TAP_Air_Portugal&oldid=66969759)

Wikipedia contributors. (2023g, May 18). *Subscription business model* - *Wikipedia*.  
Wikipedia. Retrieved 1 June 2023, from  
[https://en.wikipedia.org/wiki/Subscription\\_business\\_model](https://en.wikipedia.org/wiki/Subscription_business_model)

Wikipedia contributors. (2023h, June 5). *Business Model Canvas* - *Wikipedia*.  
Wikipedia. Retrieved 6 June 2023, from  
[https://en.wikipedia.org/wiki/Business\\_Model\\_Canvas](https://en.wikipedia.org/wiki/Business_Model_Canvas)

Wikipedia contributors. (2024). *Comboios de Portugal* — *Wikipedia, The Free Encyclopedia*.  
Wikipedia.

[https://en.wikipedia.org/w/index.php?title=Comboios\\_de\\_Portugal&oldid=1193106436](https://en.wikipedia.org/w/index.php?title=Comboios_de_Portugal&oldid=1193106436)

Zott, C., Amit, R., & Massa, L. (2010). *The Business Model: Theoretical Roots, Recent Developments, and Future Research* (862).

Zuora. (2014). *9 KEYS TO BUILDING A SUCCESSFUL SUBSCRIPTION BUSINESS*.

Retrieved 14 September 2023, from [https://info.zuora.com/rs/zuora/images/9-Keys-to-Subscription-Success-](https://info.zuora.com/rs/zuora/images/9-Keys-to-Subscription-Success-Whitepaper.pdf?_ga=2.117388675.465278791.1694697155-227905977.1693929558&_gl=1*mjycn9*_ga*MjI3OTA1OTc3LjE2OTM5Mjk1NTg.*_ga_MY8CQ65oDH*MTY5NDY5NzE1NS4zLjEuMTY5NDY5NzIoMS4zNS4wLjA)

[Whitepaper.pdf?\\_ga=2.117388675.465278791.1694697155-](https://info.zuora.com/rs/zuora/images/9-Keys-to-Subscription-Success-Whitepaper.pdf?_ga=2.117388675.465278791.1694697155-227905977.1693929558&_gl=1*mjycn9*_ga*MjI3OTA1OTc3LjE2OTM5Mjk1NTg.*_ga_MY8CQ65oDH*MTY5NDY5NzE1NS4zLjEuMTY5NDY5NzIoMS4zNS4wLjA)

[227905977.1693929558&\\_gl=1\\*mjycn9\\*\\_ga\\*MjI3OTA1OTc3LjE2OTM5Mjk1NTg.](https://info.zuora.com/rs/zuora/images/9-Keys-to-Subscription-Success-Whitepaper.pdf?_ga=2.117388675.465278791.1694697155-227905977.1693929558&_gl=1*mjycn9*_ga*MjI3OTA1OTc3LjE2OTM5Mjk1NTg.*_ga_MY8CQ65oDH*MTY5NDY5NzE1NS4zLjEuMTY5NDY5NzIoMS4zNS4wLjA)

[\\*\\_ga\\_MY8CQ65oDH\\*MTY5NDY5NzE1NS4zLjEuMTY5NDY5NzIoMS4zNS4wLjA](https://info.zuora.com/rs/zuora/images/9-Keys-to-Subscription-Success-Whitepaper.pdf?_ga=2.117388675.465278791.1694697155-227905977.1693929558&_gl=1*mjycn9*_ga*MjI3OTA1OTc3LjE2OTM5Mjk1NTg.*_ga_MY8CQ65oDH*MTY5NDY5NzE1NS4zLjEuMTY5NDY5NzIoMS4zNS4wLjA)

.

Zuora. (2023). *The Subscription Economy Index - March 2023*. Retrieved 5 June 2023, from <https://www.reasonwhy.es/media/library/zuora-sei-2023-q2.pdf>

# Appendix

## A.1 Survey

### Survey – 2030 World Cup Flight Pass

My name is Miguel Ferro, I'm a student of the Integrated Master's Degree in Aeronautical Engineering at the Universidade da Beira Interior, Covilhã, Portugal. The purpose of this survey is to verify the findings of research conducted in the field of new business models in aviation, with the goal of developing a Flight Pass for the 2030 Football World Cup. In addition, I am a member of the NIT (Transport Research Team) and this dissertation, which is supervised by Professor Jorge Silva, focuses on 'New Business Models in Aviation: Subscription-Based Aviation applied to the 2030 World Cup.'

The survey consists of 22 closed-ended questions and one open-ended question and should take less than 15 minutes to finish.

Thank you for your participation. Your contribution is greatly appreciated.

---

#### **Purpose:**

This survey aims to validate the results of the business model canvas developed, with a focus on the Flight Pass, for the 2030 World Cup, to be held between Portugal, Spain, and Morocco.

#### **Relevant concepts:**

##### Business Model Canvas

For Osterwalder (2004) the Business Model is a way of implementing the organisation's strategy, based on the logic of monetising the trilogy: strategy, organisation, and ICT (Information and Communication Technologies). The relationship between these concepts can be refined into 9 blocks describing them.

<b>Pilar</b>	<b>Building Block of Business Model</b>	<b>Description</b>
<b>Product</b>	Value Proposition	A Value Proposition is an overall view of a company's bundle of products and services that are of value to the customer
<b>Customer Interface</b>	Target Customer	The target customer is a segment of customers a company wants to offer value to.
	Distribution channel	A distribution channel is a means of getting in touch with the customer
	Relationships	The relationship describes the kind of link a company establishes between itself and the customer
<b>Infrastructure Management</b>	Value Configuration	The Value Configuration describes the arrangement of activities and resources that are necessary to create value for the customer
	Capability	A capability is the ability to execute a repeatable pattern of actions that is necessary in order to create value for the customer
	Partnership	A Partnership is a voluntarily initiated co-operative agreement between two or more companies in order to create value for the customer
<b>Financial Aspects</b>	Cost Structure	The Cost Structure is the representation in money of all the means employed in the business model
	Revenue Model	The revenue model describes the way a company makes money through a variety of revenue flows

Figure A.5.1 - The Business Model Ontology (Adapted from (Osterwalder, 2004))

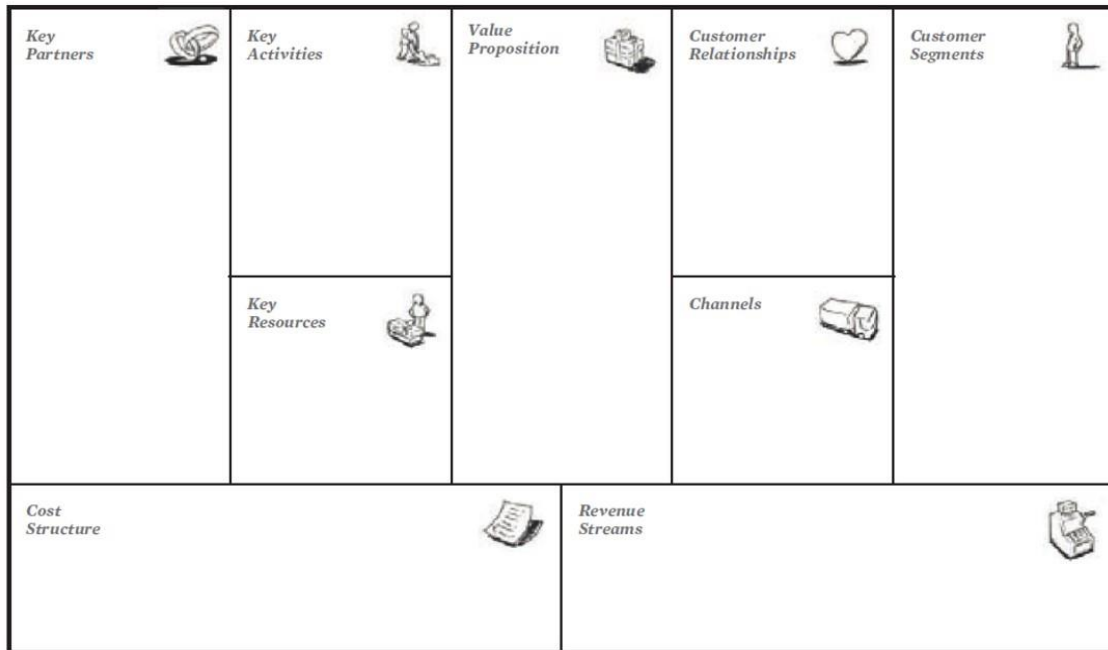


Figure A.5.2 - Business Model Canvas visualisation, adapted from (Osterwalder & Pigneur, 2010)

**Flight Pass:**

Gillis (2018) defines a flight pass as the pre-purchase of a certain number of flights by a customer with a flat fee, i.e. the price of each journey is standardised for all flights and does not consider other factors such as the time or day, factors considered by modern revenue management systems.

Gillis (2018) also describes "Netflix-style aviation" as other forms of flight pass. This is a different concept than the Flight Pass presented above. It is a subscription-based air travel model. Through a periodical subscription, customers can travel unlimitedly on a network under certain conditions.

**Method employed:**

The case study involves studying the locations where the 2030 World Cup will be held. From there, a route system was designed to move visitors between the different cities and stadiums. Once this route system is in place, it can be integrated into Key Activities. Then it was defined the value proposition.

The initial blocks mentioned earlier, Value Proposition and Key Activities, are the first factor to define. As a starting point, the value proposition must offer the customer or a group of customers an airline pass.

In turn, the Key Activities in this chapter will be defined based on the network of cities that will host the 2030 World Cup, designing a network that allows all destinations to be reached easily and quickly. To acquire empirical knowledge about current business models in aviation (some with flight pass implemented), the business models of several airlines, using the Business Model Canvas. Alaska Airlines, Frontier Airlines, Air Canada, TAP, and Ryanair were analysed to acquire insight into the differences in their business models using the inductive method.

**Results:**

<b>Business Model Canvas</b>				
<b>Key Partners</b>	<b>Key Activities</b>	<b>Value Propositions</b>	<b>Customer Relationships</b>	<b>Customer Segments</b>
MaaS service Train operators' partnership Airports Municipal tourism councils Mother company and group structure	Hub-and-spoke network. Multiple hubs: Madrid, Barcelona, Lisboa, Casablanca.	“Consumables” subscription model for Flight Pass Flight Pass only Highly personalized Pass MaaS integration “Simplifier” model for seat reservation	Flight Pass a form of automated relationship	Leisure Clients Corporate clients 2030 World Cup workforce
	<b>Key Resources</b>		<b>Channels</b>	
	Narrowbody fleet Human resources Main Airports		Direct to customer: website and app Third Party: travel agencies only for pre maid Flight Pass	
<b>Cost Structure</b>		<b>Revenue Streams</b>		
Aircraft Fuel Non-Fuel Operating Expenses		Passenger Revenue from flight pass sales Ancillary Commission fess form marketplace		

Figure A.5.3 - 2030 World Cup Flight Pass Business Model Canvas

**References:**

Gillis, M. M. D. (2018). *Optimising flight pass prices A Kenya Airways case study* [Delft University of Technology]. <http://repository.tudelft.nl/>.

Osterwalder, A. (2004). THE BUSINESS MODEL ONTOLOGY A PROPOSITION IN A DESIGN SCIENCE APPROACH. Ecole des Hautes Etudes Commerciales de l'Université de Lausanne.

Osterwalder, A., & Pigneur, Y. (2010). *Business Model Generation*. John Wiley & Sons, Inc.

**Please answer the following characterisation questions**

1. **What is your academic background? \***
2. **What is your professional role? \***
3. **What is your country of origin? \***

**Survey:**

Using a scale from 1 to 5. Here's what each rating represents:

Strongly Disagree: You strongly disagree with the statement or question. (1)

Disagree: You disagree, but not strongly. (2)

Neutral: You neither agree nor disagree. (3)

Agree: You agree, but not strongly. (4)

Strongly Agree: You strongly agree with the statement or question. (5)

## Value Proposition

4. **For the 2030 World Cup, customers would be assured unrestricted access to all flights within the network, with no travel limitations.**

Select only one option.

1 (Strongly Disagree)

2

3

4

5 (Strongly Agree)

5. **The unrestricted access makes it possible to increase the load factor on an existing transport network.**

Select only one option.

1 (Strongly Disagree)

2

3

4

5 (Strongly Agree)

6. **The model to implement should only capitalise on an already established network with minimal demand.**

Select only one option.

1 (Strongly Disagree)

2

3

4

5 (Strongly Agree)

**7. A system of pre-purchased trips, that can ultimately be an unlimited and regular supply, is better than a system with no travel limitations to implement during the 2030 World Cup.**

Select only one option.

1 (Strongly Disagree)

2

3

4

5 (Strongly Agree)

**8. To better complement the Flight Pass, the product must integrate a MAAS platform, mobility-as-a-service; i.e. in addition to airline tickets, other means of transportation could be included for travelling between cities or between the airport and the city.**

Select only one option.

1 (Strongly Disagree)

2

3

4

5 (Strongly Agree)

9. For a fixed fare, it should be possible to personalize the number of trips and how far in advance they are booked, to travel in a network that covers all the destinations.

Select only one option.

1 (Strongly Disagree)

2

3

4

5 (Strongly Agree)

**Key Activities**

Please consider the following 2030 World Cup destinations:



Figure A.5.4 - World Cup Destinations

**10. The better network system to implement the Flight Pass is the point-to-point network system. Where in an ideal point-to-point model, each airport must have direct connections to every other airport in the network. (Consider that there can be up to 18 destinations across the Iberian Peninsula and Morocco).**

Select only one option.

1 (Strongly Disagree)

2

3

4

5 (Strongly Agree)

**11. The better network system to implement the Flight Pass is a hub-and-spoke network system. Therefore, a hub must redirect passengers.**

Select only one option.

1 (Strongly Disagree)

2

3

4

5 (Strongly Agree)

**12. The regular operations can be complemented through charter operations if there is sufficient demand.**

Select only one option.

1 (Strongly Disagree)

2

3

4

5 (Strongly Agree)

13. **Classify this proposed network. (Hubs: Lisboa, Madrid, Barcelona, Casablanca).**

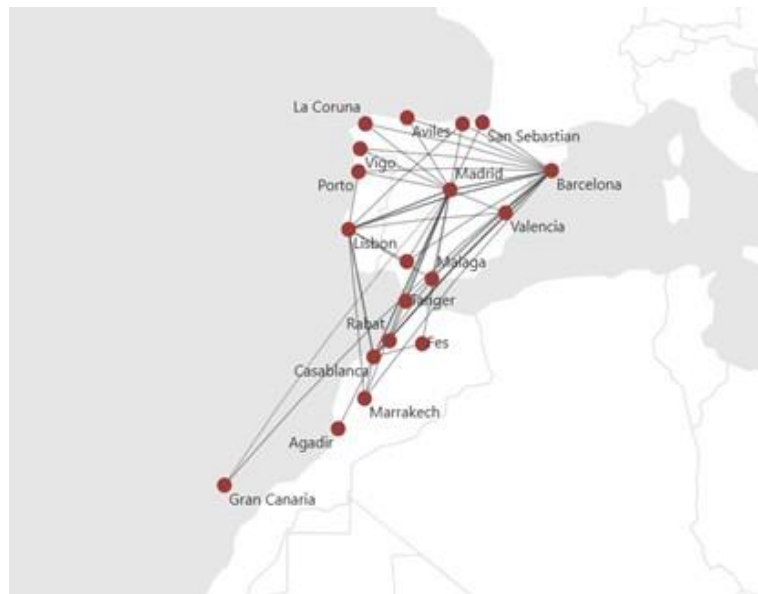


Figure A.5.5 - Proposed Network

Select only one option.

1 (Strongly Disagree)

2

3

4

5 (Strongly Agree)

## **Customer Segments**

14. **The Flight Pass with pre-purchased trips benefits more leisure clients than business clients.**

Select only one option.

1 (Strongly Disagree)

2

3

4

5 (Strongly Agree)

15. **Corporate customers are the main beneficiaries of the Flight Pass, i.e. employees of service providers for the 2030 World Cup event can travel with the Flight Pass.**

Select only one option.

1 (Strongly Disagree)

2

3

4

5 (Strongly Agree)

## **Channels**

**16. The pass should be customised to the customer's preferences within the available parameters, either through the company's website or mobile application.**

Select only one option.

1 (Strongly Disagree)

2

3

4

5 (Strongly Agree)

**17. It must be avoided third partners in the distribution channels, internalising all the sales services.**

Select only one option.

1 (Strongly Disagree)

2

3

4

5 (Strongly Agree)

## **Customer Relationship**

**18. The personalisation of the flight pass is a form of automated relationship with the client.**

Select only one option.

1 (Strongly Disagree)

2

3

4

5 (Strongly Agree)

**19. The Flight Pass aims to simplify the relationship with the customer by allowing them to purchase trips in advance without having to choose a specific date and location, so a mileage program creates an obstacle to this simplification.**

Select only one option.

1 (Strongly Disagree)

2

3

4

5 (Strongly Agree)

## **Key Partnerships**

**20. Implementing a market-sharing agreement to ensure non-competition and adequate frequencies for all destinations within the activity network is the best solution to ensure a successful Flight Pass.**

Select only one option.

1 (Strongly Disagree)

2

3

4

5 (Strongly Agree)

## **Key Resources**

**21. It is necessary to have enough aircraft to guarantee high frequencies on all routes, even if it is necessary to lease new aircraft for a short period to meet the increase in demand related to the World Cup in 2030.**

Select only one option.

1 (Strongly Disagree)

2

3

4

5 (Strongly Agree)

**22. Utilising major airports is crucial to ensure passengers are conveniently near the city centres, where the stadiums are situated.**

Select only one option.

1 (Strongly Disagree)

2

3

4

5 (Strongly Agree)

**23. Narrow-body aeroplanes in a high-frequency scheme are better than wide-body aeroplanes with lower frequency.**

Select only one option.

1 (Strongly Disagree)

2

3

4

5 (Strongly Agree)

### **Revenue Streams**

**24. The Flight Pass can serve the purpose of maximising passenger revenue through efficient revenue management. This facilitates resource allocation based on the demand derived from Flight Pass sales. Additionally, it enables the opportunity to enhance the load factor, resulting in an augmentation of revenue per mile travelled.**

Select only one option.

1 (Strongly Disagree)

2

3

4

5 (Strongly Agree)

**25. The revenue management system could define the price of the Flight Pass, with the prospect of obtaining fixed prices in advance for trips without a specific destination and date at the time of purchase.**

Select only one option.

1 (Strongly Disagree)

2

3

4

5 (Strongly Agree)

### **Open-ended question**

**26. What suggestions can you propose for optimizing the implementation of the Flight Pass model, as depicted in the Business Model Canvas for the 2030 World Cup, to better address the transportation needs and enhance the overall experience for participants and stakeholders?**

## **A.2 Scientific papers**

**Abstract - Conference - 27th ATRS WORLD CONFERENCE, ISEC Lisboa, 29 June–04 July, 2024**

### **A Framework for Business Models in Aviation: The Development and Application of the Flight Pass Canvas Tool**

This study aims to provide a framework for business models in aviation. The development of the Flight Pass Canvas tool aimed to examine the business and Flight Passes of airlines.

In this paper, we use the Business Model Canvas with a restricted group of companies to identify the evolution of business. Then, the Product Canvas arises from the combination of POA philosophies by Mason & Morrison (2008) and Product, by Osterwalder (2004). The value proposition canvas is also captured to understand the benefits to the customer and the organisation. A new framework has been created: The Product Canvas for Flight Pass.

Findings suggest that low-cost airline studied, it is used to increase the load factor, reduce the cost per passenger, and increase fixed revenues. Legacy carriers use it to increase their segmentation. Based on our analysis, we conclude that the Flight Pass is, therefore, a business innovation tool.

Current trends in the airline industry point to a greater prevalence of yield and revenue management systems, which are developing into subscription-based forms of aviation. Hence, this paper understands the latest methods of yield and revenue management to comprehending the underlying logic behind generating income via a flight pass.



**Airline Business Models and the Development of a Flight Pass for the 2030 World Cup: A Case Study**

In this study, the empirical knowledge of five distinct business models employed by various airlines is utilised in a case study that specifically focuses on the upcoming 2030 World Cup. A tailored Flight Pass has been developed to meet the needs of a specific group of customers seeking air travel options between various destinations, particularly during matches.

The Flight Pass plan has been formulated based on the Business Model Canvas framework developed by Osterwalder and Pigneur [1], and the product's innovation is captured with a Product Canvas tool. The initial factors to establish and maintain without change are the Value Proposition and Key Activities. Using the exposed method, the aspects of this Flight Pass will be discussed based on the empirical results and scientific foundations presented by the five airlines mentioned.

The study findings indicate that the proposed structure enables the feasibility of an unbundled business model. The incorporation of this model facilitates the establishment of a network system with multiple hubs, which effectively encompasses all potential destinations for the 2030 World Cup. It is of utmost importance to integrate with various transportation modes within the MAAS platform.

As it stands, this Flight Pass type is not sustainable as a standalone business model that necessitates owning all resources. This is connected to another business model that possesses these resources. This method enhances load factors and ensures predictable revenue, while also fostering a loyal customer base.



## **Abstract – Paper – JAIRM (Journal of Airline and Airport Management)**

### **New Aviation Business Models: Crafting the Flight Pass Canvas Tool**

**Purpose:** This study aims to present a framework for aviation business models. The Flight Pass Canvas tool was developed to analyse airlines' business and flight passes.

**Design/methodology/approach:** This paper presents a new framework, the Product Canvas for Flight Pass, which has been developed by combining the Business Model Canvas with the POA philosophies by Mason & Morrison (2008) and Product by Osterwalder (2004). The framework aims to identify the evolution of business and understand the benefits to the customer and the organisation using the Value Proposition Canvas. A new framework has been created: The Product Canvas for Flight Pass.

**Findings:** After analysing the literature and following the indicated model, we have created a canvas that includes the following components: Key Activities, Value Proposition, Channels, Customer Relationship, Customer Segments, and Pricing Strategy, with corresponding interactions between the blocks to allow for analysis of the Flight Pass.

**Originality/value:** Current trends in the airline industry indicate an increasing prevalence of yield and revenue management systems, which are evolving into subscription-based models for aviation. Therefore, this paper aims to explore the latest methods of yield and revenue management to understand the underlying logic behind generating income through flight passes.

**Keywords:** Business Model Canvas, Product Model Canvas, Subscription Business Models, New Business Models in Aviation, Flight Pass



## **Abstract – Paper - Transport Problems**

### **2030 WORLD CUP: DESIGNING A PRODUCT CANVAS FOR THE FLIGHT PASS**

Summary. This study utilises empirical knowledge of five distinct business models employed by various airlines in a case study that specifically focuses on the upcoming 2030 World Cup. A tailored Flight Pass has been developed to meet the needs of a specific group of customers seeking air travel options between various destinations, particularly during matches. The Flight Pass plan has been developed using the Business Model Canvas framework by Osterwalder & Pigneur (2010). The product's innovation is captured with a Product Canvas tool. The initial factors that must remain unchanged are the Value Proposition and Key Activities. This Flight Pass will be discussed using the method presented by the five airlines, based on empirical results and scientific foundations. This model allows for the creation of a network system with multiple hubs that can effectively cover all potential destinations for the 2030 World Cup. It is crucial to integrate various transportation modes within the MAAS platform. This Flight Pass type, as it currently stands, improves load factors, ensures predictable revenue, and fosters a loyal customer base.