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COMPETITIVE ADVANTAGE: HOW TAP PORTUGAL KEEPS THE EDGE CONNECTING EUROPE AND LATIN AMERICA

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Abstract:

The present work, as its main purpose, investigates of whether operational, demand, and home country factors influence an airline's competitive position relative to its peers. Operational efficiency through cost management and *hub* strategies is a widely known subject in the airline business, and pressure from the deregulation of several air transport markets around the world and subsequent fierce competition on this service industry has increased the need for differentiation based on the aspect that more and more weighs on customer choice: costs and pricing. This investigation researches TAP Portugal against European competitors Iberia and Lufthansa on its service offerings to Latin America, making conclusions on whether the Portuguese airline has indeed a competitive advantage supported by its geography on serving that market.

Keywords: competitive advantage; airlines; TAP; Latin America; geography.

Resumo:

O presente trabalho tem, como objective principal, investigar se fatores operacionais, de demanda, e de país de origem influenciam a posição competitiva de uma companhia aérea relativamente às suas congéneres. Eficiências operacionais através da gestão de custos e estratégias de *hub* são assuntos amplamente conhecidos no negócio do transporte aéreo, e a pressão derivada da desregulamentação de diversos mercados de transporte aéreo ao redor do globo e subsequente aumento da competição nesta indústria dos serviços aumentou a necessidade de diferenciação baseada no aspeto que cada vez mais pesa na escolha do cliente: custos e preço. Esta investigação analisa a TAP Portugal à luz das congéneres europeias Iberia e Lufthansa a nível de oferta dos seus serviços para a América Latina, tirando conclusões sobre se a companhia portuguesa gozará efetivamente de vantagens competitivas apoiadas pela sua geografia relativa àquele mercado.

Palavras-chave: vantagem competitiva; transporte aéreo; TAP; America Latina; geografia.

Introduction

"First Europe, and then the globe, will be linked by flight and nations so knit together that they will grow to be next-door neighbors…What railways have done for nations, airways will do for the world."

<div align="right">Claude Grahame-White, English aviation pioneer, in 1914.</div>

"Well, I think probably the best answer is temporal insanity."

<div align="right">Warren Buffet, ex "aeroholic", when asked by a student about what reasons took him into investing in USAir, in 1955, in a lecture to students of North Carolina University.</div>

The main purpose of the present work is to analyze competitiveness and how competitive advantage is achieved and sustained in the airline business. In order to do so, the case of TAP Portugal and its center role in connecting Europe and Latin America will be discussed.

The importance of geographical location is well recognized to the airline world, due to the need to reduce as much as possible the backtracking of passengers and cargo, avoiding inefficiencies in passenger and cargo timings and capitalizing on the shorter missions of the company's main operational asset: the aircraft. Lately, several airlines seem to have developed strategies deeply linked to those factors, appealing to consumers who see flying as a need and necessity, but for whom connectivity and efficiency associated with time spent equals value. In this group, one can include niche airlines like TAP Portugal and Finnair. The latest focus is on Finland and its relatively short distance to China and Japan, while the Portuguese airline combines its European network with the position gained on the Latin American market, namely the important emphasis in the Brazilian market and its growing prospects.

Through the review of the state of the art in the management and competitiveness literature, the author intends to connect the dots that link it to the strategy of a company that operates in a hostile market, full of larger and financially stronger actors, a market in which uniqueness in the product is a tough call. Although the theme (competitiveness) has been, already, largely debated, the intention is to focus on the competitive advantage development inherent to the geographical location of the main operations platform/hub.

The main purpose of my investigation is to prove that the geographical position of an airline's main hub is a key competitive advantage when aligned with a business model established to explore it.

The objective of the present work is therefore to analyze the airline's utilization of its geographical position as competitive advantage, and how it is made possible on the operational level, creating an ideal connection platform between two continents and reinforcing the business case of TAP Portugal

Independently of being focused on the airline business, this project has parall with other means of transport, specifically naval transport, and may be used as an instrument of study by companies relying on logistical platforms or logistical companies themselves.

CHAPTER I

Competitive Advantage and its scope

1. Competitive Advantage and its scope

Survival of the fittest. What better sentence to characterize the current capitalist paradigm than the longtime findings of nineteenth century naturalist Charles Darwin?

Since then, competition has been the central theme in many aspects of modern civilization, transcending the fields of war and sports, and becoming crucial and almost all aspects of life. Today, competition is a given in our culture, and thus believed to be one of the engines that better transform and reinvent our societies. Many of the greatest deeds of mankind in the last hundred years were born out of sheer competition, from the utilization of the aircraft during WW2, the subsequent surge of the jet engine, moving forward to the emergence of nuclear power and the triumph of market capitalism over the communist Soviet Union. It is in our history and in our nature.

Also in the corporate world, competition plays a vital role. Long gone are times when monopolies were widespread, regularly protected by governments out of political guidance and accepted by citizens as normal. Today, we live in an almost borderless world; a global community that long accepted the reality that both internal and external competition brings prosperity and growth (Giersh 1986).

And so it is that, today, supply and demand exist in a checks and balances system throughout the economy, providing both an entrance and an exit door for the economical agents that adapt or fail conditions that a particular industry imposes. Defining these conditions are customers, but not only customers alone. Companies that are successful developing advantages against their industry competitors have the upper hand to respond and even impose conditions through different kinds of pressure, and thus enjoy competitive advantage against peers (Porter 1998).

1.1. On positioning

Especially in today's world, distinguishing yourself from the one sitting next to you is increasingly a more complicated task. The global village scenario previously discussed, together with the connectivity and seamless integration provided by new technologies, spearheaded by the internet, seems to have altered not only the capability of providing uniqueness in a given context; but even the method of deliverance (Porter 2001).

The studies around the theme started gaining more relevance with the publishing of Harvard Professor Michael E. Porter's essay on competitive forces shaping strategy. Since then, that author's research in the subject resulted in the recognition of him as the global leader on competitive advantage and strategic thinking. According to him, a competitive strategy is the search for a favorable position in an industry, and aims to establish a profitable and sustainable position against the forces that determine industry competition. The idea is that both industry attractiveness and competitive position can be shaped by a firm, which can improve or erode its position within an industry through its choice of strategy. This strategy would have the goal of delivering a competitive advantage that grows fundamentally out of value that the firm is able to create for its buyers which exceeds the firm's costs of creating it (Porter 1998 pp 1-2).

In order to achieve a position in which it would sustain advantage, the firm had to develop its ability to manage different competitive forces affecting its environment. Such forces intensively apply to many industries, affecting their competition and profitability as in the case of airlines, where almost no company earns attractive returns on investment. Understanding of industry structure in this case is essential to effective strategic positioning (Porter 2008).

A widely acclaimed and implemented model to understand the way these forces interact is the five forces model developed by Professor Porter. Varying from industry to industry, in the market for commercial aircraft, for example, fierce rivalry between dominant producers Airbus and Boeing and the bargaining power of the airlines that place huge orders are strong, while the threat of entry, the threat of substitutes, and the power of suppliers are more benign (Porter 2008,

p3). As to the mentioned example, in today's world one can clearly see the case for airline bargaining power with the manufacturers, where the Middle East airlines place huge orders for aircraft and sometimes even influence aircraft producers future developments, as with the Airbus A380 super jumbo order dominance by Emirates and the Boeing 777X project being tailored to that same airline (Alcacer 2014, p7).

So what are the five forces that shape competition and how do they actuate? They consist, above all, of rivalry among existing competitors. But apart from that, this reality itself doesn't impede new entrants to join the competition, or consumers to adapt and substitute a product or service by other one with similar effect. This consumer will also have a certain degree of bargaining power as in the airline case previously mentioned, the same applying to the supplier depending on its position. These five forces, as posed by Porter, can be further explained as follows:

1.1.1. Porter's Five Forces that Shape Industry Competition

- Threat of entry:

New entrants bring more capacity and therefore put pressure on costs, putting a cap on the profit potential of an industry. Barriers to entry in the form of economies of needed scale, capital requirements, customer switching costs, restrictive government policies and preemption of the most favorable geographic location all should be assessed relative to the capabilities of new entrants. Retaliation from incumbents should also be considered.

- Power of suppliers:

Suppliers can impose their rules when in a dominant position, charging higher prices, limiting quality of products and services or even shifting costs to industry participants. Absence of substitutes, high switching costs or supply concentration consist in cases of superior power of suppliers.

- Power of buyers:

As the suppliers, buyers can impose very similar pressures whenever enjoying positions similar to the ones previously mentioned, capturing more value by forcing down prices, demanding better quality products or services, and even playing industry participants off against one another, as in the case of European low-cost airline Ryanair ordering of Boeing aircraft after threatening the aircraft maker of defecting to Airbus.[1]

- Threat of substitutes:

The existence of products or services that can provide similar levels of satisfaction and convenience can affect an industry product position, especially when the buyer's cost of switching is low. That is the case of technology influencing business travel through the emergence of more sophisticated video-conferencing tools, with travel also being impacted by the different types of transport industries such as of rail, road and naval transport.

- Rivalry among existing competitors:

Rivalry can take many forms, depending on the commitment to a certain industry. Occasionally, competition in certain industries, when based on pricing and without different customer segments, will go as far to squeeze the profitability of an industry, forcing weakest competitors to the point where competing is no longer viable.

Managing the pressures posed by these forces is the key to a successful strategy, and the careful analysis and study of the interactions between them defines the ability of a company to succeed. In simple terms, It could be said that, following the idea, a company already actuating in a given industry would have to stay vigilant for possible entrants in its industry anticipating its moves, reduce the power of suppliers by ideally dividing them, diminishing the buyers powers by not relying too much in a single one, stay vigilant and maintain unique characteristics

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[1] As in Airinsight.com,: http://airinsight.com/2010/07/21/ryanair-fascinating-insight/#.VPyumuFIPK8; consulted on March 8th 2015

that reduce possibility of customer substitution, and contour rivalry, by providing differentiated products that do not compete, at least solely, on price.

Other attributes, in addition to the five forces mentioned, have to be taken into account in the industry analysis, such as the industry growth rate's common illusion of endless profitability, and the government's influence on competition, with many markets and industries still heavily regulated worldwide to the present day (Porter 2008, p10).

Nevertheless, staying put is too much of a static concept for today's markets and changing technologies, where rivals can quickly copy any market position and competitive advantage is, at best, temporary (Porter 1996, p1). Companies should, therefore, be ready to adapt or move on in a scenario of an industry's structural change. Rivalry, for example, often intensifies naturally over time, with growth slowing as an industry matures and competitors becoming more alike as industry conventions emerge, technology diffuses, and customer tastes converge. Industry profitability falls, and weaker competitors are driven from the business (Porter 2008, p12). Precedents of such a case can be traced back to international air transport history, and the extinction of Malev in Hungary is such an example (Akbar et al, 2014).

Positioning the company to exploit changes in the industry's structure, therefore, is an important action to take, exploiting those changes through first introducing new tendencies, or shaping industry structure by influencing change to areas where it can excel. That is what defines the position the company will enjoy.

A company who understands that competition extends well beyond existing rivals will detect wider competitive threats and be better equipped to address them. At the same time, thinking comprehensively about an industry's structure can uncover opportunities: difference in customers, suppliers, substitutes, potential entrants, and rivals that can become the basis for distinct strategies yielding superior performance (Porter 2008, p16).

1.2. National level

Contextualizing to the national level, one can also visualize major interactions between determinants on the national environment that can affect the position of a company. A nation's competitiveness depends on the capacity of its industry to innovate and upgrade, and the shifting of the basis of competition more and more to the creation and assimilation of knowledge has transformed the role of the nation. Competitive advantage is created and sustained through a highly localized process (Porter 1990, p73).

It's common sense that some places are actually better than others. No one would ever argue that southern Portugal is better for the practice of surf than, let's say, Hungary. In the same line of thinking, it seems logical that Italy would make a perfect place to establish your new brand of high-end boots. In any case, in the scenario of modern international competition, a new theory must explain why this happens, and the conjugations that make a certain countries or regions more likely to host a determinate company in spite of other country or region. The chosen home base is the nation in which the essential competitive advantages of the enterprise are created and sustained. It is where a company's strategy is set (Porter 1990).

If one follows Porter's theory of the diamond of national advantage, one can find four attributes of a nation that, individually or in a system, create the playing field that each nation establishes and operates for its industries. These attributes are:

- Factor conditions:

Those are the ones such as labor, land, natural resources, capital and infrastructure. In other words, these factors are the basis for strategy formulation, and a crucial input for the operation, as one cannot expect a nuclear power plant, an asset with massive cooling needs, to be installed in the middle of a desert without access to water.

- Demand conditions:

In order to be favorable to the installing of a company, a country has to provide demand for its products and services. A high volume country market can be an

internationally closed one given it provides demand to sustain an internal market, but has little chance of providing an advantage if the market dimensions are diminutive.

- Related and Supporting industries:

The closer your suppliers are to your operating scenario, the easiest to conduct operations without the hassle of delays and disturbances on the production chain.

- Company structure, strategy and rivalry:

The conditions in the nation governing how companies are created, organized, and managed, as well as the nature of domestic rivalry. Those sprout very much from the nation's culture and traditions, and the form in which the environment is handled by its intervenient.

Correctly managing these attributes involve maximizing its positive effects and minimizing its negative ones. It turns out to be easy concluding that there are clear advantages in, for example, setting a solar power providing company in a region where there is plenty of sunshine year long, where there is a demand for the type of energy created, as well as a cluster of industries that are stakeholders in the production chain, and last but not least, where industry structure permits and welcomes this particular type of company.

Government too, has a role as a catalyst and a challenger: it is to encourage or even push companies to raise their aspirations and move to higher levels of competitive performance (Porter 1990, p87). This role, in the example above mentioned, is clearly fulfilled by many European governments nowadays, set in motion by the European Union in conjunction with its member States.[2]

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[2] As in Europa.eu/energy: http://ec.europa.eu/energy/en/topics/renewable-energy, consulted on March 9th 2015.

1.3. Competitive advantage by resource utilization

Not much emphasis on the impact of particular firm attributes in its competitive position was put by the strategic research of competitive advantage (Porter 1990, in Barney 1991). Nevertheless, examining the links between a firm´s internal characteristics and performance can help discover ways in which resources impact competitive position.

From this perspective, the resource-based view introduces distinct approaches in analyzing sources of competitive advantage, starting by assuming that firms in a given industry possess different resources that differentiate themselves from other firms in the same industry, and by considering that these resources may not be perfectly mobile across firms. The resource-based view model of the firm examines the implications of these two assumptions for the analysis of sources of sustained competitive advantage. In this view, a firm resource can be classified as human capital resources, organizational capital and physical capital resources (Barney 1991, p101).

Not all of these resources report to a strategic relevance to the firm, with some even preventing the implementation of valuable strategies, as of companies' geographic location sometimes preventing its expansion to distant markets. For this reason, focus in resources that distinguish among competitors should be sought, since one cannot expect to obtain competitive advantages when resources are evenly distributed across all competing firms. For this reason, resource mobility imposes itself as an important factor, since full availability of a resource to competitors may nullify a strategy relying on that resource to distinguish itself. Also, in order to have potential to sustain competitive advantage, resources must be valuable, rare, be hardly imitable either by complexity, historical conditions or ambiguous interpretation, and finally have no strategic substitute (Barney 1991, p103).

Resources are the visible and invisible attributes firms use as a basis for their strategies, and therefore developing strategies should take into account a process that mitigates areas where there are no particular strengths through

organizing around strong resources that are available to the firm, that it comprehends and masters.

As companies survival depends on consumers for its products and services, the view from the consumer's perspective must also be considered. For example, marketing can help understand the need for rare resources to be seen in terms of customer needs while inimitability can be assessed in terms of rivals imitation capacity and the firm's ability to enhance inimitability through cross-selling and bundling (Barney et al 2001, p629). Even though, inimitability is becoming increasingly difficult in an increasingly global competitive scenario, and today, the international facet of business also has to take in consideration strategic alliances, joint ventures and internationalization as possible resources to be incorporated by a firm.

Firms today are no longer considered as entities worrying about their own outputs. They are strategists employing both offensive and defensive methods to compete successfully. For example, firms today go as far as attacking competitors through hindrances to other's Human Resources retention and value creation, and act through innovative activities destroying value on competitor's resources. These are alternative ways through which firms can obtain competitive advantage (Jang 2013).

1.4. Perspective

Living in an ever changing world quickly makes outdated old adages. What was the rule some years ago now may pose as inadequate and inefficient.

It is essential to know how to conjugate the knowledge emanating from looking around, namely through the evaluation of industry participants moves, tendencies and intentions, through the definition of conditions imposed by the country or region where operation takes place, and finally through taking the time to look inside the own company, classifying what type of resources it possesses, and how a strategy could be developed around this resource.

Those are all steps that should be considered in order to gather usable knowledge about the industry where business takes place, the national

environment, and the company itself. In a world where competitive advantage has more and more a transient character, knowing how to optimize the approach to these three determinants is crucial in order to maintain competitiveness (McGrath 2014, pp 158-159).

CHAPTER II

The Airline Industry

2. The airline industry

The air transport business is one that is deeply connected to the world economy. Every increase or decrease in world GDP seems to impose similar movements in the output of global airline growth, accompanied with a certain degree of elasticity (Button et al, 2000).

Largely created out of necessity, providing linkage to remote locations through the transport of cargo and people, the potential of air transportation as a business soon became clear. Starting with the distribution of mail in the period inter-wars, and evolving into the transport of passengers after the end of WW2, industry growth was partially fueled by the extensive availability of resource capacity (aircraft). The airline industry took its first steps in a prosperous age of exponential growth, one in which economical growth in Europe and in the United States, together with the establishment of the *General Agreement of Tariffs and Trade*[3], gave impetus for the intensifying of ties between the various global economies. With the tightening of those ties, the need to provide the physical connections that allowed them to exist became more and more crucial.

The international aviation framework, organized from the birth of the *International Civil Aviation Organization*[4], put together bilateral agreements between signatory member states regarding the rights of supplying international capacity. This environment ruled until the beginning of the 1980´s, when deregulation began to take place in the western world, namely in the United States and Europe (Morrison 2001). The opening process conducting to the free market economies gave way to an industry reality in which competition began to gain pace. Today, competition in the airline business is rather the norm in most countries, although some countries and regions remaining an exception. It is still the case of countries, like Brazil for example (Braun 2014).

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[3] As in WTO.org, consulted in 18th March 2015 :
https://www.wto.org/English/thewto_e/whatis_e/tif_e/fact4_e.htm
[4] As in ICAO.org consulted in 18th March 2015:
http://www.icao.int/about-icao/Pages/default.aspx

2.1. European airline industry

The European air transportation market can be characterized as a hybrid; it's neither a full international market, nor a typical domestic one (Burghouwt 2015). The evolution of the European Community into the current European Union (EU) has taken down the majority of restrictions imposed to companies operating inside this common market, and today only few exist and only in cases of proven need of public service to impoverished regions. Currently, an airline from any member state of the EU has the right to install capacity and operate to and from any point in the union territory, given that it follows the respective safety and financial laws (Burghouwt 2015).

This transformation in the industry landscape led to the surging of a new type of business in the European scenario: the low-fares airline. As air transportation grew in capacity and demand, its existence became increasingly viewed as a given; the capability to come and go from almost any point in the same day, independently of the distance, was now a commodity in a world where traveling by air was more of a necessity rather than a luxury. As in the case of any commodity, competition in the airline business turned out to be more cost-oriented, and today, cost is viewed as the variable that weights the most on consumer's decision on this matter, be it companies or individuals (Sultan 2000).

The fall of the barriers protecting the old way of doing business permitted the growth of the low-fares airline model throughout Europe. Today, airlines like Ryanair and easyJet are the ones that grow the most inside the European common market, offering point-to-point connections between major capitals and even yesterday's underserved markets. Offering the essentials needed for the traveler, in addition to options to acquire extras so to improve the travel experience, the low-fares model is capturing not only individual customers but increasingly also big corporations, which search for cost reductions in every aspect of their own businesses (Button 2012).

This reality poses a challenge to the established companies, most of them also operating international long-haul services to markets outside Europe. Some of those companies were created in a world where the rights of air traffic between

European countries were regulated and accorded between the governments of those nations. Legacy European airlines have had to painfully adapt to this new world, lowering their costs in order to be able to compete with new industry entrants, who were born out of a deregulated market and supported by a leaner structure that is better suited to offer customers a lower overall price for the service (Button 2012).

Legacy carriers, in Europe, were invariably national carriers born in a world where air transport was considered a public service, that was largely owned by national governments and, in many cases, operated services to destinations that were politically determined, without any concern for financial profitability of those services. Profits concerns were either absorbed or diluted in the national budget or prices were adjusted to the costs by government decree, since customers had little or no choice between competitors in a market where carriers in a determinate route were designated by the State and operated in the terms of those regulated (Doganis 2010, p25).

The promulgation of consecutive air transport deregulation packages was put out by the European Commission, and with the signing of the Maastricht treaty, it transformed the airline industry in Europe. The internal market became the arena in which airlines began to compete ferociously, with the new low-fares entrants preying on the long established market of legacy carriers. These legacy carriers, had to go through painful restructuring plans supported by their owners, which in many cases were their respective governments (Doganis 2010, p55).

But there was a new detail in this new market, governments were from now on impeded from interfering in the market, and therefore airlines had to finance themselves as private companies, counting only on their own cash flows and financial statements to support their business strategies. In the aftermath of the deregulation process, several governments tried to find breaches in the law and go through alternative ways to finance their national airlines, but those moves didn't go unnoticed to competitors and regulators alike, and therefore any State financing that was not followed by heavy airline restructuring was deemed illegal (Doganis 2006, pp 245-255).

State owned airlines became a living dinosaur in the newly established market, but opportunities were also opened. They still had most of their international routes outside of Europe regulated by bilateral agreements that limited capacity, and now had all of their legacy customers to serve in addition to the ones currently at their reach inside the common market. Like every company operating in a free market, they had to grow and gain scale to either compete or be marginalized. However, they carried legacy costs imposed by years of lack of management concern about costs, labor and pension's negotiations, and politically influenced operations. Those factors posed a serious threat in a market where service was increasingly more judged by customers on the basis of costs (Pels 2008).

2.2. Determinants of airline competitiveness

A number of factors determine an airline's relative competitive position. The balanced conjugation of those factors is crucial for company competitiveness. In the case of the airline industry, this conjugation has to take into account the environment in which the airline business operates. It is one in which competition, at least for the European airlines, takes place in an international yet mostly open market and is direct and visceral. Nonetheless, national labor and tax laws impose conditions that may or may not be favorable, depending on the competitor (Porter 1990).

For the present work, and considering the objective proposed, the following factors pose themselves as determinants of airline competitiveness, and are explained as follows:

2.2.1. Fleet turnaround

It was Southwest Airlines from Texas, back in the 1970´s, that first came out with the proposition to reduce aircraft permanence time in airports between flights. This in turn saved jobs and increased productivity, which therefore increased the

amount of time where the aircraft actually produced revenue back to the company: in the air (Petzinger 1996, p35).

The idea is simple enough: the more time the aircraft spends in the air, the more passengers it carries, and the more revenue it produces, allowing productivity of workforce and assets alike to grow. Adapting to the new low-fares competitors that were starting to step on their turf, legacy airlines in Europe have been, in recent years, paying more attention to this spectrum of operations, making streamlining and cutting turnaround times a part of the daily planning (Nigel 2007).

A factor related to fleet turnaround, and important to the subject of the present work, is the curfew restrictions in several airports around the world. Airport curfews restrict operations during periods deemed inconvenient to populations in areas surrounding the airports in which the curfews apply. In Europe, several of the main *hubs* are located in highly populated areas, and by European regulations, they are subject to night flight restrictions that lead to ceasing of flights during the late night hours. This also leads to a loss of competitiveness when comparing to airports that serve similar markets on the borders of the European Union, according to the United Kingdom's government.[5]

The ability to return operating assets back to the Main Operating Base (MOB), before the beginning of the curfew involves optimizing schedules and reviewing turnaround procedures. The more flights an airline planner can squeeze out of an aircraft, bringing it back to its MOB for overnight maintenance and early start of operations, the better for the airline's competitive position (Pita et al, 2012).

An aircraft is a very expensive piece of capital equipment. It is only earning revenue and paying back its high initial cost when it is flying; the more flying it does the lower its hourly costs become. This is because standing annual charges, notably depreciation and insurance, can be spread over a greater number of productive hours. It is much easier to keep an aircraft in the air if stage lengths are longer. Higher utilization requires either a reduction in the aircraft's

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[5] As consulted on the 20th April 2015, at
https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/66837/consultation-document.pdf

turnaround time so as to carry out more flights within the operating day, or an extension of the operating day by scheduling very early morning or late evening departures. The longer the sector distance, the easier it becomes to push up daily utilization and thereby spread the aircraft's annual fixed costs over more block hours. Management decisions are, consequently, impacted by sector distances because an airline's route structure and sector distances are a function of the location of its home base and the geographical location of the markets it is serving (Doganis 2010, pp 111-115).

2.2.2. Load Factors

Having free seats in the airline business can be either a blessing or a curse. It's palatable to be able to sell weeks and even months in advance and especially when demand is assured and capacity installed. But selling can also be a delicate process, in which the marketing effort has to take special care in analyzing patterns during a given timeline and adapt pricing accordingly, since predictions can play out differently from expected, and load factors in the day of the actual flight end up with a lower overall result (Escobari 2014).

During years of regulation that was hardly a problem, given that competition was largely inexistent and prices were adjusted to compensate low loads and passengers having to pay up. But in the aftermath of deregulation, fierce competition came in galloping, and squeezing the maximum number of passengers inside airplanes became one of the ways to reduce prices to passengers and keep them coming. Price is still one of the important selecting criteria to customers on this particular service industry (Fouquet 2012).

Load factors come in as a special measurement tool in airline productivity. They indicate how well an airline matches demand with supply in a certain market and can be used to indicate its competitive position *vis a vis* competitors, as well as indicate how and where an airline can grow its operations or downscale in response to market conditions. The percentage of seats taken in comparison to the seats available is considered the load factor (Holloway 2008, p 551).

2.2.3. Costs

Reducing costs in the modern aviation business has become, invariably, the main concern in airline planning. The list of airline costs is divided between two groups: the fixed costs and the variable costs (Holloway 2008, p266).

The fixed costs are the ones that are supported independently of providing the service or not, and include aircraft acquisition costs, employee costs in the case of overhead administrative or management personnel and all of those not paid in an hourly rate, and all the other costs that occur whether the company flies its aircraft or not, like insurances and infrastructure costs. Given the high labor and operating assets costs in the airline business, with highly specialized personnel and highly technological and capital intensive technology in aircraft production, fixed costs represent a significant factor to be taken into consideration. Airlines face the constant pursuit of reducing fixed costs through labor negotiations and careful analysis of aircraft acquisition. Also, because of the high sums of fixed costs, airlines are more eager to cut capacity and even prices in case of increased competition, since the cost of having capacity and not doing business tends to impose severe financial damage.

Variable costs are the ones supported only when the service is provided, and can include airport and passenger taxes, landing fees, catering services and crew expenses such as hotels and meals. In the variable costs we can also find aircraft maintenance and fuel costs, which the airline only incurs if it actually conducts its business.

From the costs above mentioned, all have a certain degree of predictability, and therefore adequate management strategies and cost control are, usually, the measures of airline success (Merkert et al, 2011). Variations in these costs tend to show a logical development, except in the case of fuel costs. Those costs are highly unpredictable, and spikes in its costs have, even recently, been the cause of bankruptcies in major airlines, as in the case of American Airlines back in 2011.[6] Until very recently, fuel costs accounted for about one third of airlines overall costs, and in order to better cope with unexpected variations, airlines

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[6] As viewed on the 22nd April 2015, at http://www.reuters.com/article/2011/11/30/us-americanairlines-idUSTRE7AS0T220111130.

around the world developed tactics that range from hedging its future fuel needs to buying facilities to refine their own fuel[7].

2.2.4. Connectivity

In order to develop their business, airlines have to either rely in point to point operations between two given destinations, or create a strategy around their capability of offering connections with a single stop to multiple destinations (Doganis 2010, p245). This so called *hub-and-spoke* model is adopted by the majority of the airlines that mix short and long haul operations. Operating in such a way a company can create rationale for maintaining and even increasing services to certain destinations that wouldn't, on a city-pair basis, provide the necessary scale to make a business case. The *hub-and-spoke* model creates opportunities for passengers in the form of multiple destinations with a single stopover, and for airlines to cover a wider market than they would originally be able to cover (Alcacer 2014).

For the successful operation around a *hub-and-spoke* model, scale and geography are important aspects. As in any business, increasing output reduces overall and unit costs, and in the case of the airline business, reducing those by increasing output is crucial for growth and market share. For this reason, airlines operating in a *hub-and-spoke* model seek optimization of arrivals and departures of symbiotic destinations, so passengers see minimal inconvenience and choose their service. Also geography is known as a special factor in connectivity, and airline *hubs* tend to be located in a favorable location in order to cover their target markets accordingly (Alcacer 2014).

2.2.5. Infrastructure

Central to an airline and its strategy, and an asset normally not owned and managed by the airline, are the airports. The *hub* from where an airline conducts

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[7] As in Delta Airlines buying its own refining facility. Viewed on the 27th April 2015, at
http://www.businessinsider.com/delta-airlines-fuel-prices-2014-8v

the majority of its operations is crucial for its strategic development. The quality of its infrastructure in the form of passenger's perception of cleanliness, information and offered amenities, is a factor to be taken into consideration in the international competitiveness of an airline *hub* (Han 2012).

There is another aspect to be taken into consideration when comparing airports that are considered *hubs* to an airline, as in the case of the present work. The joint effort of both airport and airline in offering an operation that allows for quick connections counts on their overall capacity and growth opportunities. For those reasons, airline and airport authorities have to establish long-term planning and shared goals in order to collect good results from their businesses. This type of relationship is clearly visible in several airports around the globe, and more recently entire airports have been built from scratch alongside the strategies developed by growing airlines, as in the case of Emirates in Dubai (Alcacer 2014). Dubai International Airport is a success case in shared strategy between airline and airport and nowadays ranks number one in passenger traffic worldwide[8].

2.2.6. Origin and destination

Guaranteeing that seats are taken before takeoff turned itself into a complicated dance for airline operations, and two models of selling those seats became the norm in the modern airline industry. One includes the lean, low-fares operators, that have only one price during a given time which increases as the day of the flight approaches and seats become scarcer (Alderighi 2012).

The other model is the highly complicated model of full-services airlines that, at any given time, offers two, three, or even more different prices for the same type of service/seat. This model was born out of capabilities put out by computer reservation systems that started to spread after American Airlines introduced its very own and started exploring its multiple capabilities (Petzinger 1996, p305). This way, these so-called network airlines can mix and match supply and

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[8] As in 25th April 2015, on http://www.usatoday.com/story/todayinthesky/2015/01/28/dubai-jumps-heathrow-as-worlds-busiest-international-airport/22460371/

demand, utilizing their model operating from a central *hub* and cross-subsidizing their operation through charging passengers for a given travel itinerary, independently whether they purchase single or multiple flights connecting through the *hub.* This marketing strategy has the intent to maintain the high asset productivity and provide scale to services that wouldn't be able to be sustained in a point to point basis. As a result, pricing complications in airliner cabins become even more complicated, because to compete with airlines operating direct flights, total itinerary price has to be lower than the sum of the individual tickets that would be necessary to make the itinerary if the passenger would choose to buy them separately. This cross-subsidization has the objective of contributing to overall airline results, and it is no coincidence that, certain flights end up having costs not covered by revenues, or lower revenues than expectations created from competitor's results would suggest (Cizaire et al, 2013).

Operating from a hub increases the number of opportunities for an airline to serve more customers than it would if operating solely from its home market, and it is the model that is widely spread through airlines mixing long and short haul services. This creates scale for its long-haul flights operated by large aircraft and also provides a choice for passengers through competition not only between two destinations, but across a wider system.

2.3. Connecting the dots

The current air transportation business in Europe evolved considerably in the last decades. However, the deregulated market created after Maastricht redistributed the cards and new entrants shifted the status quo, and internally, the European market grows on the wings of the low-fares airlines connecting cities, businesses, and populations.[9]

Several factors influence an airline's ability to compete in this open market, and for the present work I selected six that are, as far as my knowledge permits, the ones that influence an airline's operations according to a network strategy.

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[9] As stated by ELFAA on March 2015, consulted on the 5th of April 2015, available on:
http://www.elfaa.com/150305_ELFAA_PressRelease_ELFAA_Stats_2014.pdf

Operational factors as turnaround times, in addition to load factors and costs, determine how well an airline utilizes its assets and how productive it is. On the other side, the network's infrastructure (*hub)* has to have a strategy parallel to that of the airline. Its physical conditions and ability to, in tandem with the airline, provide expedited connectivity to inbound and outbound passengers are determinants of competition. These have to be measured against competitors and between the determinants themselves, in order to answer if geographical position has an impact in airline competitiveness.

CHAPTER III

TAP Portugal's Competitive Position

3. TAP Portugal's Competitive Position

As the main character in this case study, it is crucial for the success of the present work to identify TAP Portugal's competitive position. In order to do that, the author intends to analyze the company's competitive position both in the European market and the South Atlantic market. The South Atlantic is the biggest geography for TAP's operations outside of Europe, and service to the region has been increasing in the last years, with new destinations being added to the network in an incremental way (TAP 2014).

Several key elements contribute to building the company's competitive position in the aforementioned markets, and while some are shared by its competitors, others are unique to it. The deregulation of the European air transportation industry has put increasingly more pressure on state-owned companies. This is due to the European internal market being flooded by capacity offered by legacy and low-fares competitors alike, with ripple effects on revenue and margins caused by pricing pressures. This scenario is widely different in the South Atlantic arena, where capacity and operations are still regulated by bilateral agreements, politically negotiated and restrictive in terms of new competition.

As a result, in terms of connecting Europe and Brazil, TAP puts itself in a position where it both faces and poses itself as an indirect competitor to other European airlines in this market, since the company competes by serving customers for the same destinations, although via different routing.

Distance between city-pairs plays an important role in the constitution of competitive position, as it's logical that the more time an aircraft spends in the air, the more costs it will incur. This same distance plays a role in the strategy adopted to compete, as aircraft allocation and destinations to be served have to be part of the equation.

As for aircrafts, even considering the short list competition between the main manufacturers, each of the two main aircraft producers nowadays have several models from different eras still operating in airlines across the western world. Each model has an ideal operating range, with efficiency benefiting the younger

assets which, on the other hand, incur higher financial costs that have to be considered from each option depending on usage parameters.

Cultural, political and economic bonds also play a role in the success and demand for air transport between cities, countries and regions. Strong supply and demand for routes to Brazil, in the case of TAP Portugal, and to the United States, in the case of British Airways, are examples of such cases.

As observed, several elements will influence the competitive position of an airline, each leveraging a specific unit of analysis of the present work. Next, I will elaborate on how those elements add up in the two operating arenas analyzed in this case study.

3.1. European arena

Airlines operating in and between the member countries of the European Union have to do so in a market that is recognized as one of the world's most competitive, one where there are constant and ever increasing pressures on costs due to ferocious competition from the low-fare airlines that permeate the market. Those are the airlines that truly gave the average European citizen the opportunity to start enjoying the benefits of air travel, and the ones that saw the opportunity to undercut the legacy airlines in their own market, since those were burdened by years of labor and cost structures that could not be dismantled or altered with a simple decision. The barriers to entry posed by legislation were dismantled, and the relatively easy access to operating assets brought an influx of new competitors, some achieving success, others not so much (Dennis 2007).

The European air transport market is, today, one where low fares and legacy airlines compete fiercely, and where even protected niche destinations recently entered the liberalization fray, as is the case of the Azores region in Portugal[10]. The ability to compete directly to and from any point of the Union created the need for the legacy airlines to adapt and respond to this new threat. Here are

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[10] As seen on May 11, 2015, on http://www.dnoticias.pt/actualidade/economia/507613-acores-entram-hoje-na-era-da-liberalizacao-dos-transportes-aereos

some of characteristics of the elements with which TAP operates in the European market:

3.1.1. Distances

Situated in the southwestern corner of the European continent, TAP flies one of the longest average distances among European airlines. An aircraft is a very expensive piece of capital equipment, and since it is only earning revenue and paying back its initial cost when it is flying, the more flying it does the lower its hourly costs become. This is because the standing annual charges, notably depreciation and insurance, can be spread over a greater number of productive hours (Doganis 2010, p111).

On the other hand, even if short sectors are inherently more costly to operate than longer sectors in terms of cost per seat-km, they allow to the expansion of the airline's network, with more destinations made possible due to the lowest utilization of the operating asset throughout the day.

According to the known capacity and expansion restrictions on TAP's main operating base of Lisbon, where airport growth is somehow physically restricted, the average longer distances its fleet travels across Europe can be considered to be beneficial for both overall company cost structure and strategy. Porter's five forces model indicates the lack of geographical centrality as a threat of entry to a determinate industry. However, although TAP is not geographically centered to serve the European market, which would otherwise inhibit the company from sustaining a greater network and gaining advantage, there is evidence that this actually contributes to the overall performance of the company, since unit costs tapers with the increase of distance flown (Doganis 2010, p 113).

3.1.2. *Hub* characteristics

The *hub* plays a significant and crucial part in the establishment of the airline strategy, and therefore, the alignment of strategies between the airline and airport is important for the prosecution of both parties' goals.

As the present work investigates and compares an airline's use of a network strategy, airport characteristics will be observed at the light of the *hubbing* concept. This process, which involves a wave of "bank" arrivals followed shortly by a wave of departures, is described as a complex, with an airline enjoying numerous potential advantages from this strategy. That is possible through the substitution of, for example, three point-to-point direct flights from cities A to B, C to D and E to F by six direct services from each of these six airports to a new *hub* at an intermediate point G (Doganis 2010, p247). Also, the channeling of traffic through a *hub* may build density of traffic on a particular spoke that wouldn't be possible as a standalone service, allowing the airline to use larger and more economical aircraft. Although if the spokes of a *hubbing* operation are relatively short, the unit costs are likely to be higher than offering direct services with small regional aircraft (Eggert 1999, in Doganis 2010 p 249).

The *hubbing* strategy depends largely on having sufficient local traffic from each spoke of the *hub*, paying a premium price to compensate for the lower yield on hub transfer traffic. Doganis mentions five attributes for an airport to become an effective *hub*: a central geographical position in relation to the markets it is to serve, whether this is purely short-medium haul or intercontinental, ample runway capacity, a single terminal building for the *hub* airline and, ideally, strong local demand to and from the *hub*.

Because of the peripheral geographic position of Portugal relative to the European continent, it is clear that TAP's main operating base in Lisbon doesn't possess all of those attributes relatively to the European market. While strong demand is the case for several destinations, mainly the ones with strong immigration links to Portugal, geographical centrality is not a factor allowing the best utilization of the hub concept on pure European terms.

3.1.3. Fleet

As a general rule, though there are exceptions, the larger an aircraft the more it will cost to fly per block hour, but the lower the cost per seat-km. This is because,

other things being equal, the direct operating costs of an aircraft increase less in proportion to their size or their payload capacity (Doganis 2010, p103).

That doesn't mean that airlines will always deploy their largest flying assets to any given route, or the fastest or one, for that matter. Aircraft deployment decisions have to take into account their appropriateness to the various payload-range missions expected of them, and subject to this, besides the characteristics above mentioned, key cost drivers like fleet size, composition and age are considered dependent of airline strategy (Holloway 2008, pp313-315).

Also, airlines are capital-intensive businesses, and it shows up in equipment rental and assets depreciation figures, with newer aircraft generally imposing higher ownership costs than older types with a similar mission profile. Those older types will incur in higher maintenance costs, and depending on the network design of the airline, costs may increase due to a high number of landing cycles (Low et al, 2014).

In the case of TAP's European network, one can observe that despite the use of smaller aircraft by its regional arm (Portugalia), the aircraft utilized are the workhorses of the industry and widely utilized by competitors like Iberia and Lufthansa: the Airbus A320 family. While basic characteristics are shared, fleet age in the case of the Portuguese airline is the oldest between the competitors mentioned, with an average of 13.9 years (TAP 2014).

Although part of the fleet is operated under lease due to the airline's known financial restrictions, the aging fleet counts with lower cycle costs due to the longer operated distances. Since TAP has its own M&E services that take the work of maintaining the fleet and also aggregate the engine maintenance for its European network aircraft, coordinated strategy around the management of its flying assets is evident (TAP 2014).

3.1.4. Pricing

The advent of the low-fare airlines has increasingly put more pressure on yields and prices, as is the case of TAP. The airline already had a growing presence of low-cost airlines operating from its main *hub,* and since 2014, the installment of

an operating base from Ryanair in the Portuguese capital has increased the need to reduce prices in the intra-European market to compete (TAP 2014). Since the analysis of direct competition on intra-European routes is not the purpose of this work, the author decided not to deepen this aspect of the airline operations in the European market.

3.1.5. Cultural, economic and political ties

Cultural links seems to play a role inside the European airline market. Airlines like SAS (Scandinavian Air System) have for years covered and consolidated positions in the Scandinavian markets it serves, a market known by its share of high yield business passengers. Likewise, Lufthansa has lately integrated the German speaking countries through acquisition of airlines like Austrian and Swiss, and both of those countries benefit from geographical situations more central to the European market than Portugal, creating opportunities for *hubbing* strategies (Graham 1998).

Sophisticated home demand in the airline home market is a key to success in the airline business. As Portugal's GDP trails the median European one, it is not surprising that together with the lack of top Portuguese multinational companies listed (having by far the least number of companies listed on Forbes Global 2000 index[11]), the Portuguese air traffic ends up tending to be heavily touristic, thanks to the evolution of Portugal as an increasingly attractive touristic destination (Almeida et al, 2008).

According to standard economic theory, factors of production –labor, land, natural resources, capital, and infrastructure –determine the flow of trade. A nation will export those goods that make most use of the factors with which it is relatively well endowed. This doctrine, which is embedded in classical economics and whose origins date back to Adam Smith and David Ricardo, is at best incomplete and at worst incorrect (Porter 1990). However, as noted before, Portugal poses itself neither as a powerful economical actor in Europe, nor as a culturally connected country (aside from ties originated by the emigration

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[11] As consulted on May 15, 2015, on http://www.economywatch.com/companies/forbes-list/portugal.html.

patterns). For that reason, and because of changes to the market imposed by the shuffling of cards done by the deregulation process, TAP sees itself in the European market competing head to head against the low fare airlines. That happens mostly because the mentioned cultural ties are not heavily business related and therefore are price sensitive. Additionally, the impossibility of utilizing a *hubbing* strategy inside Europe due to geographical periphery puts it directly against the point to point centered, low-fare airlines.

3.2. South Atlantic

Differently from the competitive situation it faces in the European market, TAP does not face the same type of competition in the South Atlantic arena, namely Brazil. Instead of liberalized air transport markets like the North Atlantic or the European internal markets, air transport rights between Europe and most of the South American countries is still regulated by bi-lateral Air Service agreements (ASA), in a nation by nation basis. In the case of Portugal and Brazil, the current ASA names the airports from/to which the operating airlines can operate, setting principles that those airlines should respect in relation to capacity and allowing governments to intervene only *a posteriori.* In this particular agreement, there is also a clause of single disapproval regarding pricing that means that either government can disapprove an air tariff published for air service between the two countries (Assembleia da República, 2002).

Other European countries face similar or more restrictive scenarios. For example, both Spanish and German carriers (as well as their Brazilian counterparts) are required to follow strict predeterminations regarding capacity, meaning that prior government agreement on capacity is required before services begin. Because of that, airlines covering those markets have fewer margins for correcting capacity in response to fast market changes, since governments and diplomacy have to become part of the negotiations, with political interests becoming part of the equation (InterVISTAS 2009).

In March 2011, the European Union and Brazil initiated a comprehensive air services agreement that will allow all EU airlines to operate direct flights to any

destination in Brazil from any point in the EU (and vice versa for Brazilian carriers) - without restrictions on routes, prices and the number of weekly flights[12].

As with other comprehensive air transport agreements, both sides have agreed to closely cooperate in a wide range of areas including safety, security, application of competition law, air traffic management, environment, consumer protection, and social and labor issues. This will ensure a level playing field for fair competition between EU and Brazilian airlines, leading to an increase in competition, with reflections on pricing and capacity, in accordance with similar results on other deregulation processes. Until the conclusion of the present work, negotiations were still ongoing regarding this process.

3.2.1. Distances

For the same geographical characteristics mentioned in the European arena paragraph, the fact that Portugal is situated in the southwestern corner of Europe provides airlines operating from the country with the shorter journeys to South American destinations.

Accordingly to Doganis (Doganis 2010, p113), an aircraft should be flown to distances for which it was designed. Therefore, short sectors must be avoided because they impose much higher costs, and airlines should therefore try to operate each aircraft at or near the stage distances where costs are at their lowest.

Any of TAP's South American destinations qualify as long haul flights, with the shortest distance, Fortaleza, standing at 3500 miles, and the longest, Porto Alegre, at 5500 miles, which is beyond the reach of the smaller, narrow-bodied aircraft operated inside the European market.

While it is true that costs can be spread over a greater number of productive hours (Doganis 2010, p111), the truth is that overall trip costs are less in a standout viewpoint, limiting airline liabilities and shielding it in a certain degree to

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[12] As consulted on the May 15, 2015, at
http://ec.europa.eu/transport/modes/air/international_aviation/country_index/brazil_en.htm.

demand fluctuations compared to airlines flying longer distances. Also, TAP's relatively short distance to destinations in Northeastern Brazil gives it an opportunity to increase aircraft productive hours by returning the aircraft to its home base on the same day, avoiding the operating curfews applied to most European airports, and making use of the Portuguese continental time zone for the process as well (Holloway 2008, p440).

Following the logic in Porter's five forces model, Portugal is geographically centered to serve the South Atlantic market with lower distances compared to competitors. It also has the ability to, in some cases, turn around its aircrafts and fly them back to their home base on the same day, allowing it to decrease unproductive hours sitting in airports abroad, which seem to sustain this affirmation.

3.2.2. *Hub* characteristics

TAP's *hub* in Lisbon has a quality that stands crucial for airlines that intend to operate utilizing a *hubbing* strategy: geographical centrality. A *hub* that is geographically central within its defined catchment area can benefit from a balanced spread of primary, secondary, and perhaps tertiary destinations in opposite quadrants (Holloway 2008, p379). That is the case of Lisbon, with TAP's network covering destinations in primary, secondary and tertiary cities both within its European scope, as well as within its South Atlantic scope, with the capacity to upgrade to Iberian destinations like Malaga or the addition of secondary cities in Brazil.

3.2.3. Fleet

Making use of its current eighteen[13] wide-bodied aircraft for serving its long-haul destinations, TAP's fleet is composed entirely of Airbus models. Despite the four owned Airbus A340 being four-engine aircraft and the fourteen A330 being twin engine, type rating is common to both aircraft, with similar cockpit and

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[13] As seen on May 16, 2015, on http://www.tapportugal.com/Info/en/fleet-history/fleet-2014.

instrumentation, similarities that extend to the passenger cabin, wings and fuselage. Its operating range puts all of the South American destinations on TAP's network well within reach of those aircrafts, and literature on the subject even puts the Airbus A330 as one of the most economical wide-bodied aircraft to operate, with direct operating costs per block hour and with costs per seat mile under the mean of the current operating aicraft[14] (Doganis 2010, p104).

TAP's long haul fleet is composed mostly of owned aircraft, with the older A340's being fully owned assets, eleven leased A330 and three of the A330 being operational leased assets. The A340 repair and maintenance, including the engines, is done by TAP M&E, where in the case of the A330 fleet, maintenance is done apart from the engines, since TAP is focused in the capability to maintain the CFM-56 engines only (TAP 2014).

3.2.4. Pricing

In the South Atlantic TAP's relative position to the Brazilian market gives it the capability to practice lower prices for the leisure segment than its competitors. The leisure segment being the one that dominates the demand for the South Atlantic market[15], TAP displays lower prices than its competitors, sometimes even when the departure takes place in its *hub,* as observed in the analysis in Annex A.

The evidence of undercutting on pricing by TAP can have several hypothetical reasons. Either the cost base of the company allows it to charge less and still reap benefits from the operation, or it can mean that the airline is exploring forms of attracting new and old customers because of the recent ten day strike that had an impact on the company's image[16]. It can also mean that the company is effectively running on financial difficulties and finding it necessary to slash prices in order to access short-term financial liquidity (TAP 2014).

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[14] In this citation, one has to exclude the more recent and modern Boeing 787 and Airbus A350.
[15] Fernando Pinto, TAP CEO, on 19th May 2015;
[16] As seen on May 30th, on
http://www.jornaldenegocios.pt/empresas/detalhe/greve_na_tap_da_imagem_de_terceiro_mundismo_a_por tugal.html;

3.2.5. Cultural, economic and political ties

More than five hundred years connect the history of Portugal and Brazil, from colonial power to brother countries united by a common language and culture.

Despite not ranking between the major trade partners of Portugal or vice-versa, where Brazil ranks even lower than much smaller Angola, immigration patterns and history have built up a strong demand for air transport between Portugal and Brazil, with Brazil being the number one country with more nationals living in Portugal as of 2013.[17] TAP holds the top position in the number of available capacity between Europe and Brazil, with 25% of the market share.[18]

According to a study on the impact of international Air Sevice Liberalization in Brazil, published in 2009, among the European nations Portugal was the top Origin/Destination market for Brazil, holding a total of roughly 640 thousand passengers in 2007 alone (InterVISTAS 2009).

3.3. Overall

Overall, TAP's competitive position is one that can characterize as a niche network airline, as is also the case of Finnair between northern Europe and northeastern Asia. Relative proximity to South America enables TAP Portugal to devote just one aircraft to most South Atlantic routes, whereas carriers based in northern Europe cannot schedule a 24-hour rotation (Holloway 2008, p440). This characteristic of high utilization of assets is well visible in routes that the airline operates even inside its European market. There, it operates to some European airports in a timing that allows it to leave just before closure in Lisbon, and arriving back to the Portuguese capital just after reopening. This is the case for its *red-eye* flight to Budapest leaving Lisbon around 2300h and arriving at the Hungarian capital at 03h30, and back to Lisbon at 07h00 the next day.

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[17] As seen on May 17, 2015, on
http://www.pordata.pt/Portugal/Popula%C3%A7%C3%A3o+estrangeira+com+estatuto+legal+de+residente+total+e+por+algumas+nacionalidades-24.

[18] As seen on May 16, 2015, on http://centreforaviation.com/analysis/tap-portugal-part-2-bidders-in-its-privatisation-will-focus-on-the-airlines-brazil-network-191079.

The juxtaposition of the company's South Atlantic market and its European market seem to provide the perfect example for a *hubbing* strategy connecting the two continents, and a closer look at the destinations for TAP services confirms that this is the strategy followed (TAP 2014).

Restrictions on the south Atlantic market seem to shield, in one way, TAP's competitive position in that market. The number of flights between Portugal and Brazil suggests that there is strong demand for the services, mainly due to cultural and immigration reasons, which would allow (theoretically) the company to charge a premium compared to, for example, flights connecting in Frankfurt or Madrid for the same origin and destinations (Narangajavana et al, 2014).

Fleet wise, TAP is in a worse situation compared to its competitors, with the age of the fleet above the average for the European network carriers. The financial situation of the company, aggravated in the recent years by the financial crisis that the country still faces, has inhibited the company from investing in the renewal of the fleet.

TAP has a negative equity, which reveals a high level of leverage and results in a higher interest burden than its competitors, as it has been using debt to finance its negative accumulated results. Another probable cause for the high interest burden may be the higher general interest rates due to the superior default premium on TAP's companies. Recent results observed in its latest financial reports do not indicate considerable progress in that matter and the privatization attempts put out by the government stress the financial status as the main reason for the need of privatization[19].

In a recent return on equity analysis about TAP, it was observed that TAP is achieving a better performance than the industry in terms of gross margin and asset turnovers, which means that the company is making better use of its assets than its competitors (Caetano et al, 2012).

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[19] As seen on May 17, 2015, on http://www.portugal.gov.pt/pt/os-temas/20150116-tap/tap.aspx.

CHAPTER IV

Methodology

4. Methodology

The very nature of this case, finding evidence of competitive advantage connected to the geography of the hub, establishes that the study will need to have a comparative basis. For that, two airlines that compete with TAP to Latin America are to be included for the sake of providing comparative basis. The two chosen competitors are Iberia from Spain, and Lufthansa from Germany. Using the airlines as the units of analysis, there is the need to view the three of them in multiple levels, and for that I define, for each of the airlines, two groups of embedded units of analysis.

The first group consists of operational and financial quantitative and qualitative information, the quantitative being collected through financial statements from the airlines in the last three available years, and qualitative information being collected through an interview of the CEO of TAP. In this interview, questions were put in a way to support or deny the case for lower operational costs on the Latin American operations compared to the other two airlines.

The second group consists of infrastructures and demand, and will consist of qualitative data in the form of accredited publications that rank connectivity and airport infrastructure from the three airlines and their respective hubs. It is joined by quantitative data reflecting the number of passengers originated between each European country and Brazil, Latin America's largest country. In this group, the aforementioned interview of TAP´s CEO will be joined by an interview of the chairman of ANA Aeroportos S.A., connecting the dots between the three analyzed units, leveraging any misconception that can come from the collection of the numbers.

After linking the dots inside each of the three groups between the three airlines, it will be time for the triangulation between the two groups. The operational aspects will be weighed against the infrastructure and demand in order to determine causal links between the embedded units existing in the two groups. This is the part in which I cross-analyze the embedded units and come to an understanding of the competitive position of each of the airlines regarding their geographical position to the market served: Latin America. This way the author intends to

demonstrate which, if any unit in this study consists of a resource that concedes competitive advantage for TAP Portugal operating out of Lisbon to Latin America. To add credibility to the research, multiple units will be used instead of a single one, since multiple sources of evidence are considered a better method to explain a case (Yin 2013).

Once chosen the road ahead, it is important to define a framework to achieve it. In order to do that, and following Yin, the author will henceforth indicate the study's questions, its propositions, its units of analysis, the logic linking the data to the propositions, and the criteria for interpreting the findings.

4.1. Question

The study pretends to find answers to how and why TAP Portugal's Lisbon hub is a source of competitive advantage for the company, since its geographical position puts it in the southwestern corner of Europe, and therefore as the closest hub connecting Europe to Latin America. The geographical factor in air transport, and specifically in this case, TAP's Lisbon hub position, is recognized by many authors as having an impact on the competitive position of an airline (Doganis 2010, p250; Holloway 2008, p440). Nevertheless, to the author's knowledge, it has not been deeply explored to the point of connecting the dots that explain so.

4.2. Propositions

Therefore the proposition is to conduct an explanatory case study. This type of case study is used when you are seeking to answer a question that sought to explain the presumed causal links in real-life interventions that are too complex for the survey or experimental strategies. The explanations will link implementation with effects (Yin 2013).

4.3. Units of Analysis

Because of the difficulty in translating geographical positioning into competitive advantage, it is necessary to design this multiple case study with embedded

units. This case, the presumed competitive advantage of TAP's Lisbon hub geography, will be a multiple case study with embedded units, those units consisting of two groups:

4.3.1. Operational costs

In this group, we have the units that are acquired through the quantitative data research. For the sake of comparison, two other major European airlines, Iberia and Lufthansa, will serve as base of comparison. The plan consists in studying the following embedded units as below:

a. Fleet rotation in routes:

The block hours (from engine start to shutdown) operated by aircraft. It is to be measured with the capability of turning the aircraft around, return to respective main operating base and avoid airport nighttime restrictions.

b. Load factors:

The average load factor from each airline's operating network, and in the last available published financial statements.

c. Cost:

The costs per available seat/kilometer, or CASK (Doganis 2010). This number is also to be taken from financial statements, and relates heavily to the type of aircraft operated, flight distance and its characteristics.

4.3.2. Infrastructure and demand

This group is defined mostly by its qualitative aspects, and for the sake of comparison, will again establish Iberia and Lufthansa's hubs as a comparative base. The units studied here reflect preferences that can only be inferred through the translation of its qualitative aspects into numbers.

d. Connectivity:

This aspect is analyzed in the hub perspective. The recently published *Airport Industry Connectivity Report*, published by Airport Council International[20], serves as the classification tool.

e. Infrastructure:

Information to be taken from the last three World Competitiveness Reports from the World Economic Forum to determine the relative position of the *hub* of Lisbon[21].

f. Origin and destination:

This unit's information will be taken from the two previous Brazilian's *Agência Nacional de Aviacão Civil* annual statistical digest, where statistics of passenger traffic between Brazil and third nations is published (ANAC 2013).

An inquiry, one of the CEO of TAP Portugal and other of the chairman of ANA Aeroportos S.A., will be made reflecting the units above, with open questions in order not to prevent influencing the answers resulting in a biased set of conclusions. Table 1 is drawn below with the instruments used for the collection of information clarifies the sources:

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[20] As in *Airports Industry Connectivity Report, 2004-2014*, consulted on the 29th March 2015, at
https://www.aci-europe.org/
[21] As in World Economic Forum, consulted on the 20th of March 2015, at
http://www.weforum.org/reports/global-competitiveness-report-2014-2015

Table 1: Overview of data sources						
Data Source	Qualitative or quantitative	Operational	Infrastructures	Case 1: TAP Portugal	Case 2: Iberia	Case 3: Lufthansa
Unstructured Interview - TAP	QUAL	Yes	Yes	Yes	No	No
Unstructured Interview - ANA	QUAL	No	Yes	Yes	No	No
CASK[22]	QUANT	Yes	No	Yes	Yes	Yes
Aircraft utilization	QUANT	Yes	No	Yes	Yes	Yes
Load Factors	QUANT	Yes	No	Yes	Yes	Yes
Connectivity	QUAL	Yes	Yes	Yes	Yes	Yes
Infrastructure	QUAL	No	Yes	Yes	Yes	Yes
Origin and Destination traffic	QUANT	Yes	Yes	Yes	Yes	Yes

4.4. Logic

The logic linking the data to the propositions will be the next step. The costs of operating the routes to Latin America will consist of linking the answers from the TAP inquiry and the rate of utilization of the aircraft, it's utilization in terms of load factors and the costs of operating based on network characteristics. Because the case is about competitiveness, there is a need to go through the proposed units for other airlines that operate in the Latin American market in order to analyze it in terms of geographical advantage. Luckily, in terms of operational costs, all three airlines are publicly traded and regularly disclose their operational results.

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[22]CASK – Cost of available seat per kilometer.

The infrastructure and demand units are linked through the degree in which connectivity, demand and infrastructure influence each other in terms of alignment of airport and airline strategies to serve a given market.

These two groups of propositions are linked, since customer preferences tend to be affected and present elasticity to prices when offered alternatives by competitors. Because of the current commodity status that air transport seems to have achieved, it is mostly the operational costs that influence customer preferences. Therefore, the shorter journeys with higher equipment and personnel rate of utilization appear to have a link to the reduction of costs, which influences preferences. But there may be the case, as well, when customer preferences influence the operational costs, with customers demanding a better service, or better connecting flights. This may pose a scenario in which a company can charge a premium over a given industry/market (Doganis 2010, pp 199-202).

4.5. Interpreting Criteria

The criteria to interpret the results will be TAP's competitive position in relation to other airlines operating on the Latin American market, namely Iberia and Lufthansa. Iberia's hub is closely located to Lisbon, and because of cultural links to Latin America (as TAP), it has its long haul segment focused in that market. On the other hand, Lufthansa operates in the same alliance as TAP (Star Alliance), but operates its own services to São Paulo, although from the much more distant hub of Frankfurt. Lufthansa, nevertheless, enjoys a powerful competitive position and has costs synergies of scale that are not available to TAP.

The criteria will take the data and, in the case of the qualitative data, determine a rank for the collected results. In the case of the quantitative data, the same level of measurability will take care of putting them on the same ground, and the interviews will be used as a means to balance disparities in case of data mislead and also as answers to better establish the causal effects across units.

The collected quantitative database, together with the quantified qualitative data, will be analyzed utilizing graphical representation of the data collected in Excel,

and intersections supporting linkages between the units of analysis will emerge as evidence of competitive advantage. Qualitative data were utilized to gain a deeper understanding and description, and quantitative data focused in deeper levels of understanding, confirming or denying the qualitative analysis results, and providing additional results that do not emerge from the qualitative data.

In the end, the cumulative results will again be analyzed at the case level, with matching patterns forming an explanatory model. After the within-level abstractions are built across cases, cross-level analyses will be organized to find links among emergent cross-case themes.

The next step of the study will be to utilize the results learned from the data triangulation, and explain it at the light of the latest on the subject of competitive advantage. For this, the Resource-based view of competitive advantage (Barney 1991) will support the classification of the firm's internal resources in the form of operational and infrastructure results in the route served. It will be complemented with the data emerging from the relative position to its competitors across the analyzed units, as in the five forces model from Porter (Porter 2008). From cross-analyzing the internal resources and relative position to competition, conclusions will be presented in order to support or deny the existence or not of TAP´s competitive advantage in its routes to Latin America.

During this phase, the emergence of rival theories may occur. Thus, one must acknowledge that the country-to-country market may be sole reason for the competitive advantage, or that in the current legal framework of bilateral agreements for international air transport, market share is essentially protected.

CHAPTER V

Analysis

5. Analysis

In this chapter, the author will proceed to analyze the gathered data, explaining the methods used to acquire that data and how they are categorized.

There are two types of data in the present work, quantitative data, acquired through financial statements, qualified publications, and interviews of both TAP and ANA´s CEOs, and the other type is qualitative data acquired on the same terms.

Since the objective here is to find evidence of competitive advantage, to do so, the author had to perform a comparative study with some competitors. The objective was to find at least two indirect competitors operating on the same market from two other European countries, where intercontinental airlines tend to be their respective country's single air transport provider for long haul transport.

Market commonality and resource similarity, aspects derived from the resource-based theory of the firm, determined the choice of Lufthansa and Iberia for that effect. Each firm has a unique market profile and strategic resource endowment, and a level comparison between those along with the two dimensions previously mentioned will help to illuminate the competitive tension between these three firms (Chen 1996).

A systematic way of examining all the activities a firm performs and how they interact, is necessary for analyzing the sources of competitive advantage (Porter 1985, p33). The author decided to tackle the question of competitive advantage by choosing units of analysis that encompass the economical areas relevant to cost determination, the infrastructure conditions necessary for the conduction of operations, and the cultural, sociological, and economic reasons that knowingly affect air travel between countries and regions.

In the contemporary world of air transport, costs control is the norm rather than the exception, as demonstrated by the boom of the low-fare airlines (Gillen 2004). If within deregulated markets this norm has reshaped the way companies do business, leading to the recrafting of legacy airline's operating models and services, one can also see similar trends to cost control in the intercontinental scenario. Because most intercontinental airlines are also domestic and regional,

both sides of network airlines operations are affected by the cost control narrative (Franke 2007). Cross subsidization between those sides exist in the same way that the first class passenger pays more to lower the cost of the economy passenger.

There is little hope of starting an airline without access to one crucial asset that is not often in procession of the airline itself: an airport.

Airlines and airports are increasingly becoming strategic partners in the literal sense of the word. Be it from low-fare airlines in Europe choosing to serve highly competitive markets by using airports (and growing them) in the outskirts of destinations, or by middle-eastern countries aligning airline and airports strategies towards larger overall national goals, airports today seem to have entered the competitive fray one way or the other (Barret 2000). They too have to position themselves against geographically close competitors and provide conditions for airlines to develop and grow. In the words of ANA Aeroportos CEO, Dr. Ponce de Leão, *"airports today compete as much as the airlines do; this is no longer a stand-alone assured business."*

How is it possible to explain that there are two direct flights per day from Lisbon to Sao Paulo, but there aren't any flights between Lisbon and Mexico City? Both destinations are equally close to the Portuguese capital, and both are highly populated urban zones with a growing travel demand, so what's the difference?

The one and one only: demand. The air transportation industry mantra is well known as "matching supply with demand", and this demand only occurs when sociological and economic factors come into play. Looking at the route network of airlines like TAP or Iberia[23], one can see clear evidence that demand occurs in a historical and sociological pattern, since apart from other intercontinental destinations, the ones with a shared past are the ones that account for the majority of those airline's networks. The very own historical and sociological factors creating the aforementioned demand is the same that, for affinities or political purposes, leads to the establishment of economic relationships between nations. One can infer that economic ties between nations lead to a surge in

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[23] As seen on the 25th May 25, 2015, on http://www.flytap.com/Portugal/en/Homepage/DestinationsMap; and http://www.iberia.com/us/destination-guide/.

demand for air transportation, in the same manner that a nation's internal economic growth also leads to a surge in internal air transportation demand. Those factors are taken into consideration by airline strategists, and accurate planning has become increasingly important to allow for the sector's healthy development. Efforts to develop demand forecasts are essential because they are the basis for concrete airline investment decisions (Marazzo et al, 2010). Considering the decision regarding the choice of the group of units of analysis as explained, the author will analyze the implications and impacts of these among competitors.

5.1. Fleet rotation

Airframe utilization is a key indicator that can be used to optimize planning of airline schedules and thus increase profitability. The term *airframe* utilization is used to show the relation between the time an aircraft spends in the air to the time it spends on the ground. By maximizing airframe utilization, airlines can achieve higher values of ASK and improve their available capacity with the same fleet and with no additional fixed costs (i.e. the cost of buying a new aircraft). During an operational day, airlines tend to maximize block-to-block time and minimizing turnaround times. Airframe utilization is a key indicator of the performance of an airline, and the ICAO defines it as: "Aircraft hours flown (block-to-block) divided by aircraft days available".

Airlines tend to maximize airframe utilization in order to reduce costs per flight/seat-kilometer. The high utilization is the most flight-hours that airframes can carry out during an operational day, and in this way airlines can divide total fixed costs with a higher number of flight-hours which reduces a cost per hour-flown for an airframe. As an activity highly influenced by GDP fluctuations, the average utilization of aircrafts from the European airlines dropped sharply during the aftermath of the Euro financial crisis of 2008 due to decreased demand, and has since slowly increased as the economy begins to gain pace (Eurocontrol 2011). Average daily fleet utilization is calculated utilizing the following simple equation:

$$Avg/h/day = (total\ fleet\ flying\ hours \div fleet\ size) \div 365\ days$$

Airframes can achieve much higher utilization on long-haul flights, because they can theoretically convert some turnaround but also connecting time into flying time, which increases airframe utilization. Optimizing aircraft planning by maximizing the number of rotations per airframe can contribute to that, and as stated by TAP´s CEO Fernando Pinto: "*TAP is the only European airline that can do a complete turnaround of its aircraft for any Brazilian destination in twenty four hours*". That advantage highly increases the assets rate of utilization and contributes to TAP´s overall higher utilization compared to competitors mentioned in this work.

TAP's shortest routes to Latin America give it a lower ASK by aircraft, since it doesn't go extra-long distances to transport the same passenger that connects, say, via Frankfurt. The data extracted from the three airlines financial statements shows a three year increase in aircraft utilization, with TAP reaching an absolute record in the year 2014, with an average aircraft utilization of 11,68 hours per day. That is a result of an effort by TAP to substantially increase asset utilization, and TAP stands as the airline mentioned in this study that utilizes its assets the most. In the case of the long-haul fleet, and since 39% of its ASK is deployed to Brazil, the twenty four hour rotation in all Brazilian destinations surely contributes to this observation (TAP 2014).

In the case of Iberia, the financial statements don't refer to the number of hours flown per year, so it was necessary to go to the parent company International Airline Group's (IAG) financial statements and use the group's details. Nonetheless, solely for the year 2012, the average number of hours flown by Iberia's fleet could be found through the cross-analysis of IAG and subsidiary British Airways financial statements, since both publish the numbers and due to the fact that until then, only Iberia and British Airways were part of the operating arm of the group. Since then, with the addition of Vueling, and because its financial statements are vague in terms of aircraft utilization, the author will consider the aircraft utilization rate of the group. It is important to mention that

while British Airways is by far the greatest output generator of the group, its average aircraft utilization is considerably better than the group's average, leading one to believe that Iberia doesn't publish this data because it is, still, considerably lower than peers, especially the ones in the present study.

Distances from Lisbon, Madrid, and Frankfurt to Sao Paulo are, respectively, 7944, 8388, and 9807 kilometers, which gives an edge to TAP of roughly 1 hour relative to Iberia in Madrid. This is also augmented by the different time zone that takes back one hour from the utilization window possible for Iberia to return to its base and avoid the airport curfews that restrict night operations, which happens in majority of the European airports. This situation is even worse in the case of Lufthansa compared to TAP, and in this regard, TAP has a clear advantage, at least when compared to its European competitors in the South Atlantic. Nevertheless, the gaining in operations resulting of the time zone are illusory, *"because the gaining of one hour at departure is penalized with one hour less at arrivals"*, as referred by the CEO of ANA Aeroportos, in an interview conceded to the author.

The evolution in the utilization of each of the analyzed airlines fleet is reflected in Table B.1 below, and clearly demonstrates TAP´s advantage in this matter:
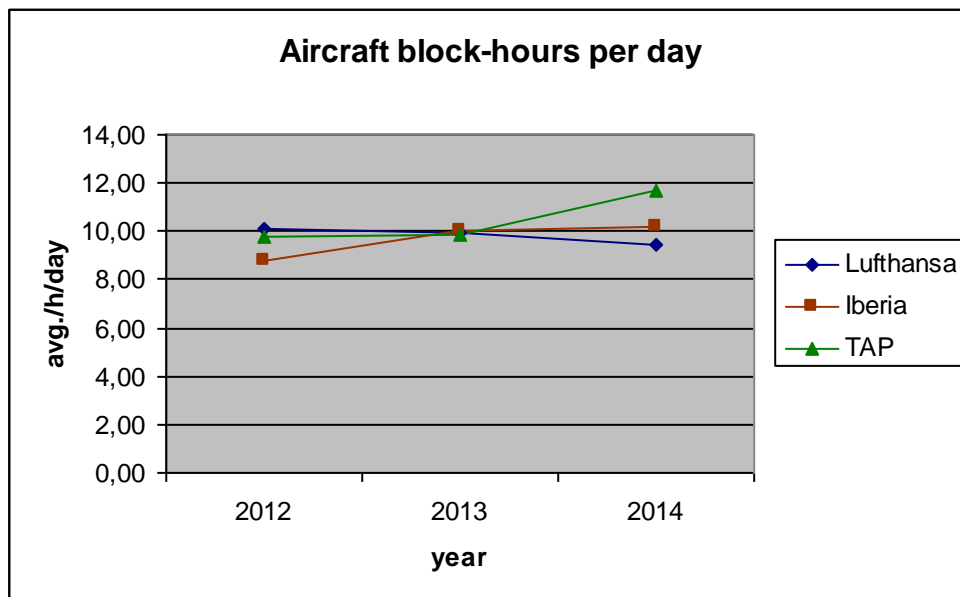

Table B.1 – Fleet average utilization per day. (Source: Author calculations from airlines financial statements).

5.2. Load Factors

Another unit of analysis that influences cost advantage is passenger load factors. In Doganis (Doganis 2010, p147), and referring to the year 2007 intra-European market, low-fare airlines are mentioned as capable of achieving yearly average load factors of around 80%, where most European network carriers manage only around 65 to 75%. This means that when those low-fare airlines' lower costs per available seat-km are converted to a cost per passenger-km or passenger carried, the cost difference with network carriers is magnified.

Because of this competitive pressure put on by the low-fare airlines business model, and because the European market is also crucial to the viability of the European network airlines that, in the case of TAP have 43% of the capacity installed on this market, airlines have been aiming towards increasingly higher load factors, achieving them through very effective and aggressive pricing and inventory management (TAP 2014).

The perishability of airline seats once the doors close, in addition to the need to cover fixed costs associated with scheduled airline operations, puts a great deal of pressure on carriers to sell close to variable cost. Because marginal revenues from deeply discounted fares tend to exceed variable traffic costs, additional sales of output produced within a given capacity range will usually make some level of contribution to fixed (capacity and traffic) costs (Holloway 2008, p168). However, although individual flights frequently operate with all their output sold, an entire system never can. Airlines inevitably produce more output than they sell, but even considering excessive output, empty seats are not necessarily evidence of oversupply, they are part of a product since fully booked airplanes inhibit flexibility of selling tickets to the most attractive passenger to the airline: the business passengers that tend to book quite close to a departure and end up paying the highest fares chargeable. Ultimately, when there is excess output, the result is normally price competition intensification and lowering of yield (Holloway 2008, pp196-204).

It is clear that the evolution of the load factors regarding network carriers has increased dramatically, as shown in Annex B and in Table B.2 below. Load

factors stand, as of 2014, around 80%, demonstrating the importance of meeting supply with demand, and the need to close the gap to the low-fare airlines operating in Europe at the same time that they increase the occupancy in their long-haul destinations. For that matter, TAP has achieved, throughout 2013, a load factor of 84,2% in the South Atlantic (TAP 2013), and overall, "*TAP achieved its record average load factor in the year of 2014",* as mentioned by the airline´s CEO in interview to the author. Reaching 79,9%, it is important to mention that, less than ten years ago, this number was only achieved by low-fare airlines (Doganis 2010, p147).

Load factors are calculated by taking the effective sold seats in an aircraft from the total available seats on a given journey or system, as seen in the following simple equation:

Load Factor = (Effectively sold seats x 100) ÷ Total available seats

Load factors among the analyzed airlines are kept fairly similar during the period analyzed, with TAP topping competition in 2014, which is consistent with the airline´s effort to achieve higher utilization of its assets. Table B.2 below demonstrates the evolution of load factors:
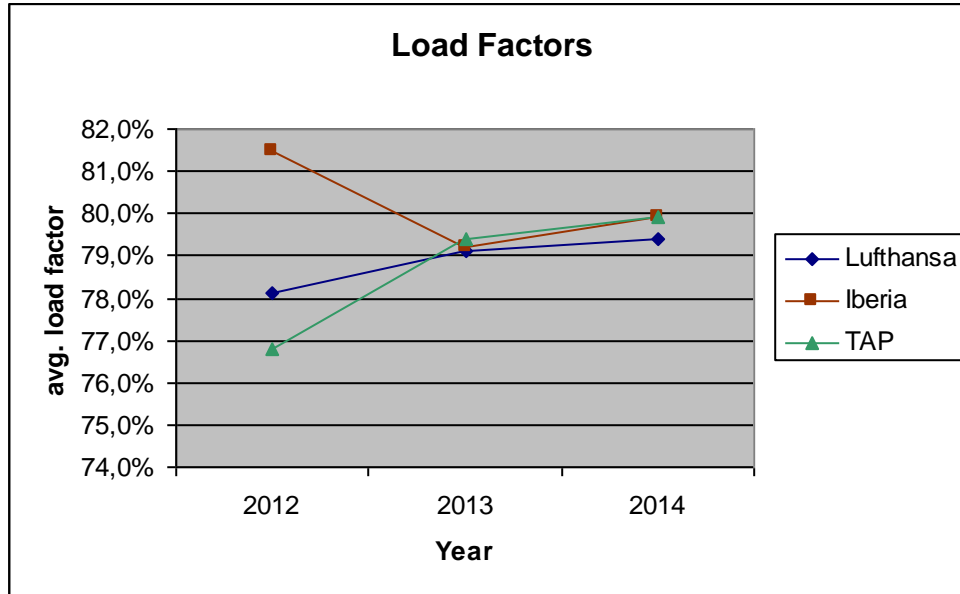
Load Factors

Table B.2 – Evolution of load factors from the analyzed airlines. (Source: Author calculations from airlines financial statements).

5.3. Costs

The nature of each airline's non-operating costs and revenues is probably unique, as in the many non-operating items are influenced by circumstances that are very particular to each airline. As a result, inter-airline comparison of total costs including non-operating costs are of little value (Doganis 2010, p66). For this reason the author will analyze operating costs (both direct and indirect) in the air transport business of TAP and its competitors, dividing its values in order to find the cost per available seat-kilometer, or CASK.

The measuring of costs as CASK is meaningful since developing a deductive approach that uses selected measures of total factor productivity allows comparisons between airlines in different countries by adjusting for differences in factor prices, network characteristics, aircraft size and so on (Doganis 2010, p 88).

To determine CASK, it is necessary to find the number of seats a given aircraft is configured with, and multiply this by the number of kilometers flown by a given route. Once this is found, the operating costs related to that particular operation

are divided by that figure, and this is how one finds the airline's unit cost or CASK. This metric can be explained by the following simple equation:

$$CASK = (number\ seats\ x\ flown\ distance) \div operating\ costs$$

For the present work, an analysis of the CASK relative to the three airlines analyzed was done through extraction of data stated on the last three public financial statements, referring to the years of 2012, 2013, and 2014.

Costs are taken from the airline financial statements and referred to the operating expenses from the core airline business of the companies in the study, and stated in the segmented results demonstration from the financial statements, according to IFRS 8.[24] Because maintenance and other businesses are not applicable from the point of view of this work, only the operating costs arising from the airline business of the companies is considered. Note that all financial statements are reported as stipulated by the norms of IFRS, adopted throughout Europe.

Due to the inability to access reports and studies like IATA's WATS, or AEA STAR, the author could not proceed to the analysis of the costs on the specific routes from the European *hubs* to Sao Paulo, steering towards the analysis of the airline's overall costs instead. Nonetheless, the average unit cost of the airlines provides a clear picture of the strategy pursued by each airline, and together with the remaining units of analysis, the author considers it to be possible to take a clear picture of the position of each one regarding the Europe-Latin America market: the spectrum of the study.

The evidence from the calculations shows TAP as having the lowest unit costs/CASK of the three throughout the years, while Lufthansa is considerably higher than both airlines from the Iberian Peninsula. Although evidencing higher costs than TAP in 2012 and 2013, in 2014 Iberia managed to considerably lower its unit costs to sensibly the same level of TAP.

This increased competition from Iberia, with its recent lowering of unit costs, has been emphasized by TAP´s CEO in interview by the author, where not

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[24] As in IFRS.org, consulted on may 25th 2015, at http://www.ifrs.org/Pages/default.aspx

specifically mentioning Iberia, the CEO mentions *"recent increase of pressure on costs"* not only in the European market by the low-fares airlines, but also in the South Atlantic, from what is possible to depict that Iberia´s restructuring has been putting pressure on the Portuguese airline, even if their networks only overlap directly in 4 destinations in that market.[25]

The evolution of the average cost per available seat per kilometer for the three analyzed airlines is graphically represented in Table B.3 below:

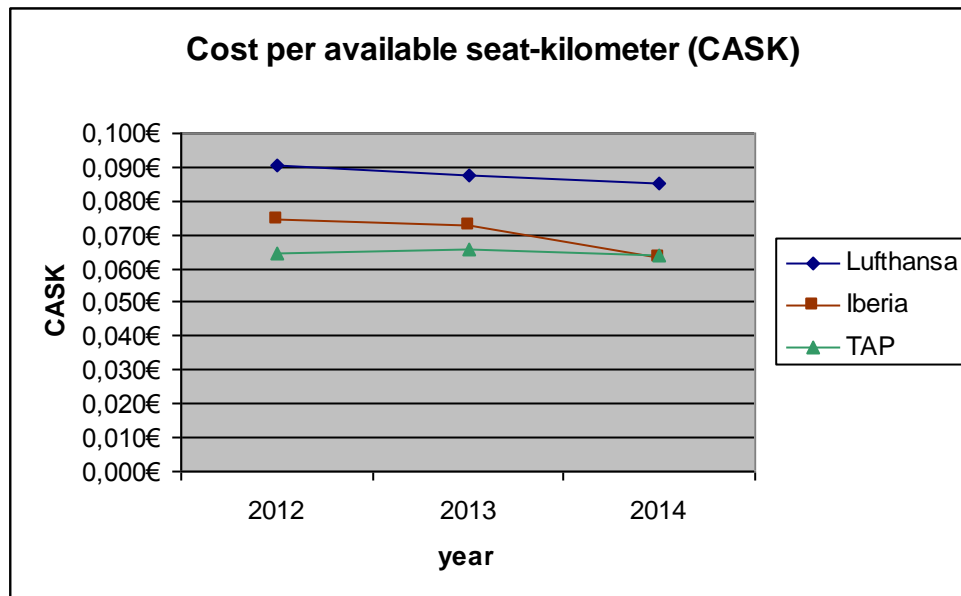
Table B.3 – Evolution of CASK from the analyzed airlines. (Source: Author calculations from airlines financial statements).

5.4. Connectivity

Airport connectivity is an increasingly discussed topic in European policy circles, and with good reason. Connectivity is closely connected with productivity, economic growth and international trade. And with the center of global economic activity shifting eastward, it is essential that Europe remains as closely integrated as possible to emerging sources of future wealth. Within the industry, an airport's route network and the connectivity it delivers will be a core element of its

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[25] As in Iberia.com, consulted on may 20th 2015, at http://www.iberia.com/gb/destination-guide/

business plan, with both airport's and the countries they serve having a strong common interest in boosting this connectivity wherever possible (ACI 2014).

The information on *hub* connectivity utilized by the author was taken from the recent Airport Industry Connectivity Report, published in June 2014, and based in a way that measures connectivity in a comprehensive way. Using airline schedule data as input, the model is both qualitative and quantitative, measuring direct and indirect connections as well as quality elements as airline alliances, airports and the travelling public.

The study demonstrates that in the period from 2004 to 2014, connectivity between Europe and Latin America has increased less (only 21%) than compared to connectivity between Europe and other continents. Also noticeable is the fact that regarding *hubs* offering most connections between ACI-Europe member airports and Latin America, Madrid is at the top of the list with 18%, while Frankfurt stays in third place with 12% and Lisbon comes in fifth with 5%.

In absolute connectivity by individual airports, Frankfurt is, as of 2014, the number two airport in Europe with 71.252 connection possibilities offered through its *hub*. Madrid comes in seventh place with 14.952 connections and Lisbon comes in fifteenth, with 4.346 connections offered. Nevertheless, although constantly debated in the last five years as an infrastructure that would soon reach its full capacity, the current administration of ANA Aeroportos in Portugal has emphasized that this is not the case, and last year´s start of operations by Ryanair, the eminent doubling by Emirates and the future start of flights between Lisbon and Doha by Qatar Airways "*are evidence that Lisbon has much space to grow*", as mentioned by its CEO in an interview by the author.

Connectivity to Latin American from the three *hubs* cited in this work is represented in Table C.4 below:
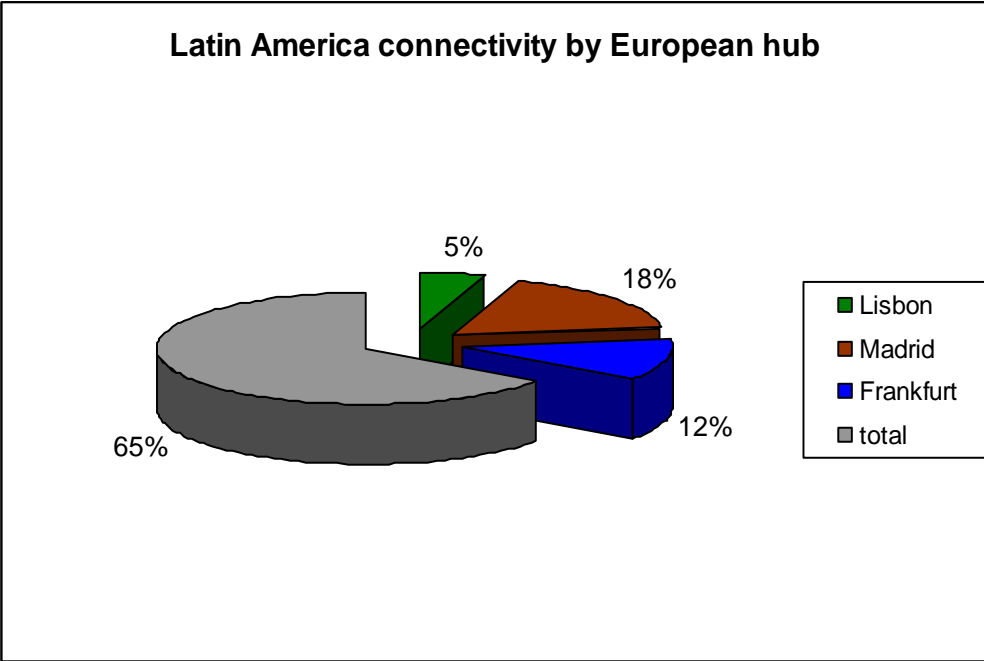
Latin America connectivity by European hub

Table C.4 – Connectivity between named European *hubs* and Latin America. (Source: Author representation of ACI-Europe Airport Industry Connectivity Report).

5.5. Infrastructure

It is a widespread contention amongst airlines that since many airports are natural monopolies, they are not subject to the intensive competitive pressures that have affected the airline business over the last few years and so are under little pressure to improve either the efficiency or the effectiveness of their service delivery. A counterargument is that in a world of global networks built around competing *hubs*, airports are neither a natural monopoly nor sheltered from competition. For once, *hubs* compete for flow of traffic, but no matter how strongly it is argued that London Heathrow, Amsterdam Schipol and Frankfurt Main compete against each other for flow of traffic, the operators of these airports can be certain that British Airways, KLM, and Lufthansa are not going to vacate the premises any time soon. Whilst passengers can choose to fly over an alternative *hub* in an instant, airlines cannot readily abandon the investment in the markets and infrastructure sunk into their main bases, so when we're talking about infrastructure and competition, especially in Europe, what we're really

talking about is airline-airport joint strategy against peer competitors (Holloway 2008, p291). In an interview with ANA Aeroportos CEO, Dr. Ponce de Leão, the existence of *"a joint commission between airport authorities, airline, customs and other stakeholders, to improve mutual efficiency in the daily operations"* was reveled to the author, that also learnt about plans to improve experience of passengers that self-connect between different airlines, as well as the already advanced plan to introduce a delegation of Brazilian customs in Lisbon, expediting the bureaucracy that passengers with destination to that country face when traveling to or from Brazil.

For this unit of analysis, the author intended to cross-check different parameters to evaluate the appropriateness of each of the competitor's *hubs*. Sources such as Eurocontrol's Central Office for Delay Analysis (CODA) reports, and information on airline's pricing discrimination relative to taxes were considered, but dropped due to its lack of substance caused by either inconclusive values due to either some airline's ownership of infrastructure or lack of data regarding delays due to a short list of entrances in the available reports, in the case of CODA reports available to the public. Anyhow, although not included in this unit of analysis because of lack of information with competitors from 2012 onwards, Lisbon airport is listed in the last three years as the European airport most affected by delays, and if its delays affected roughly 50% of the departures in 2012 and 2013, in 2014 this value ascended to 55%, with the average delay also increasing from the previous fifteen minute to eighteen minute in the last year. The delays are due to several reasons, including weather, the airlines, and reactionary delays caused by scheduling of departures and arrivals. The analysis of the last three years shows evidence of the delays in Lisbon airport being caused mostly by airlines and reactionary reasons alike.

For this reason, information used was restricted to the last three *Global Competitiveness Reports* published by the World Economic Forum (WEF 2012, 2013 and 2014). In these reports, in the pillar of infrastructure, each of the member countries is classified based on different parameters of efficiency, and air transport infrastructure quality is one of those. The three different countries from where each of the airlines analyzed operates from are listed on the report,

and their values are listed both in a ranking between all the member nations, and in a scale from 1 to 7 as well. No information on individual airports was available to the author's knowledge, that being the reason to utilize respective countries overall positions in this regard.

Starting from 35th in that ranking as of 2012, Portugal has improved its air transport infrastructure position and climbed fifteen places in that ladder, improving also 0,1 values in the classification to 5,7. Although maintaining its 6,0 values in the classification, Spain has climbed the ranking ladder and has recently achieved 10th place, a sign of competitive advantage following the reports interpreting criteria, and giving signs of a possible deterioration of other nations airport infrastructure, as is visible with Germany, which from 7th place with 6,4 values in 2012, has declined to 8th and 13th place in the following years, with its values decreasing as well to 5,9, now between Portugal and Spain.

In terms of airport taxes, evidence from online fare searching shows, in an online search of American Airlines price detailing, air transport taxes are being relatively lower in Lisbon when compared to the other airports mentioned in this work, respectively 30% lower than Madrid, and 57% lower than Frankfurt. Clearly not a scientific method for gathering data, this detail is merely informational and is not included.

The evolution in the W.E.F. rankings regarding the quality of air transportation infrastructure is graphically represented in Table C.2 below:
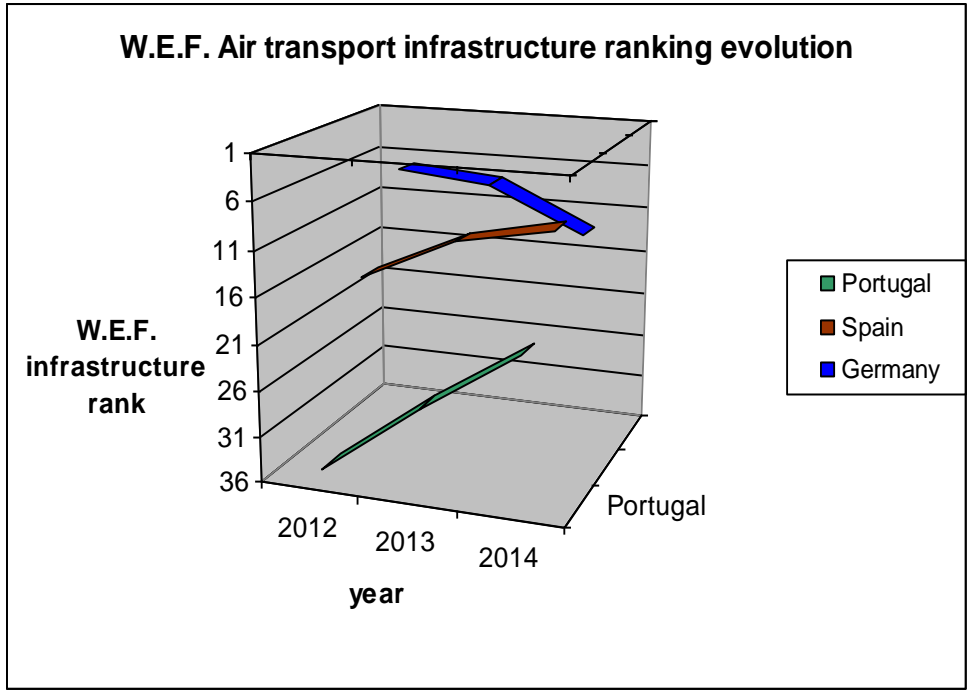
W.E.F. Air transport infrastructure ranking evolution

Table C.2 - (Source: Author´s representation of World Economic Forum´s 2012,2013 and 2014 Global Competitiveness reports).

And the value attributed to each country's infrastructures according to the scale of one to seven established by that organization is graphically represented in Table C.1 below:
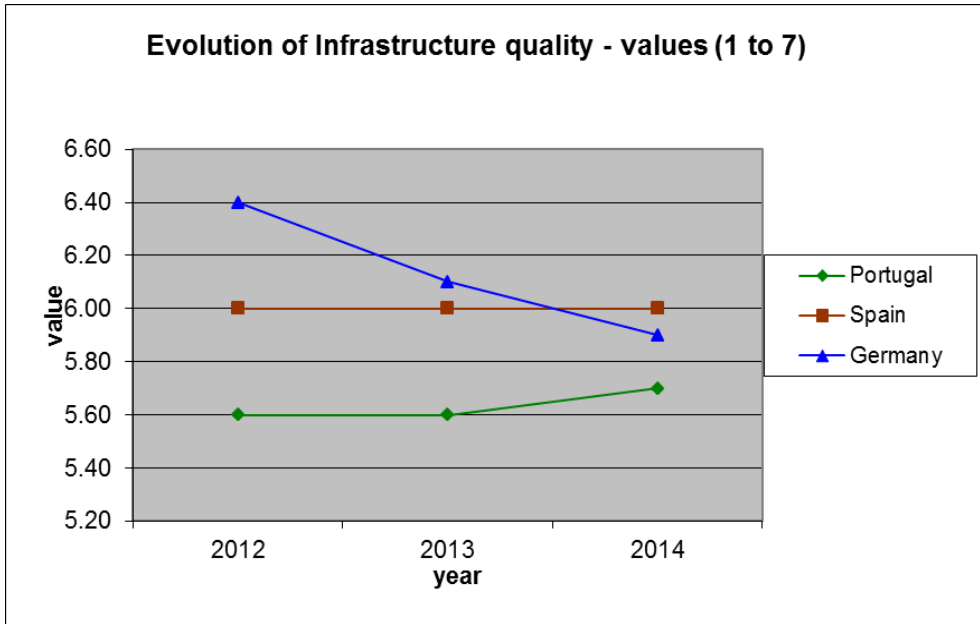

Evolution of Infrastructure quality - values (1 to 7)

Table C.1 - (Source: Author´s representation of World Economic Forum´s 2012, 2013 and 2014 Global Competitiveness reports).

5.6. Origin and destination

Air transport demand is crucial for the establishment of air services between two nations. In gravity models it is assumed that air travel supports other targeted activities such as business and vacation trips (O'Connor 1982, in Grosche 2007), and that it can be derived from other selected economic or social supply variables. In general, these variables can be categorized into two groups: geo-economic and service-related factors (Rengaraju and Thamizh Arasan 1992; Kanafani 1983, in Grosche 2007). Geo-economic factors describe the economic activities and geographical characteristics of the areas around the airports and the routes involved (Jorge-Calderon 1997, in Grosche 2007). Service-related factors are characteristics of the air transport system and are, in contrast to geo-economic factors, under the control of airlines (Grosche 2007).

An important geographical factor affecting inter-city air travel demand is the distance between cities. It has two conflicting effects: increasing distance leads to lower social and commercial interactions but longer distances increase the competitiveness of air transport compared to other modes (Grosche 2007). In the case of Europe and Latin America, it comes out to be the only acceptable form of transportation passengers will endure nowadays. Also, historical factors will have influence in the demand, and the number of Brazilians and Portuguese living abroad in each other's countries is a testament to that.[26]

The main service-related factors focus on the quality and the price of the airline service (Jorge-Calderon 1997, in Grosche 2007). Travel time between origin and destination and market presence are factors to be taken into consideration to determine airline market strength, and in general, are considered deterrent factors for air travel (Grosche 2007).

The economics of *hubbing* depend largely on having sufficient local traffic form each spoke of the *hub*, paying a premium price to compensate for the lower yield on *hub* transfer traffic. This means that a *hub* which is itself a major traffic

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[26] As seen on May 17, 2015, on
http://www.pordata.pt/Portugal/Popula%C3%A7%C3%A3o+estrangeira+com+estatuto+legal+de+residente+total+e+por+algumas+nacionalidades-24.

generator or attractor has a distinct advantage. It also means that the proportion of transfer traffic on each spoke route should ideally not rise to more than 55-60 % (Doganis 2010, p250). Evidence in Annex A, where prices of round trips from European *hubs* operated by the airlines analyzed in this study, clearly demonstrates that the effect of the *hub* premium is present on Iberia flights from Madrid, and to a certain extent also in the case of Lufthansa from Frankfurt, but oddly is not existent in the case of TAP in Lisbon. That can be the result of different aspects, from the recent effects of the pilots' strike on the reservations to the possibility of TAP achieving an effective cost advantage that allows it to undercut competitor's price (Narangajavana et al, 2014).

In terms of origin and demand for air transportation between Europe and Latin America, specifically Brazil, information was depicted from the Brazilian National Agency for Civil Aviation (ANAC) annual statistical report. Since the 2014 issue was not published until the conclusion of this work, the information regarding the years 2012 and 2013 is the one which will be considered. Between Portugal and Brazil, roughly 1.570.000 passengers were transported both in 2012 and 2013, that being approximately one ninth of TAP's overall transported passengers and demonstrating the sizeable market that the Brazilian operation is for the company, supporting TAP's CEO affirmation that *"Brazil is the biggest country of Latin America, both economically and in dimensions, and also its historical relation with Portugal, helps make Lisbon a natural hub"*.

Between Germany and Brazil, a number of around 830.000 passengers were transported in 2012, decreasing to 790.000 in the following year, with similar trends in the case of Spain, decreasing to 770.000 passengers from 790.000 the year before (ANAC 2013).

This evidence shows the sizeable market for air transport between Portugal and Brazil, one of the reasons why the company holds the title of largest air transport provider between Europe and Brazil, with a 25% market share and twelve destinations in Brazil alone (TAP 2014).

It is important to mention, as stated by TAP's CEO in an interview by the author, that *"around 50 per cent of the passengers inbound from Brazil stay in Portugal, while the other 50 per cent continues to other destinations, namely Africa or*

Europe", but although it consists in an interesting parameter, the analysis of this data could not be conducted due to lack of further available information from the part of the three studied airlines. To cover the distances from Europe to Brazil wide bodied aircraft with higher seat factors are needed. Therefore the scale provided by the connecting passengers is crucial, especially on lower demand routes.

Origin and demand to and from Brazil, from the European countries home to the airlines in this study in both 2012 and 2013 is represented in Tables C.3 below:
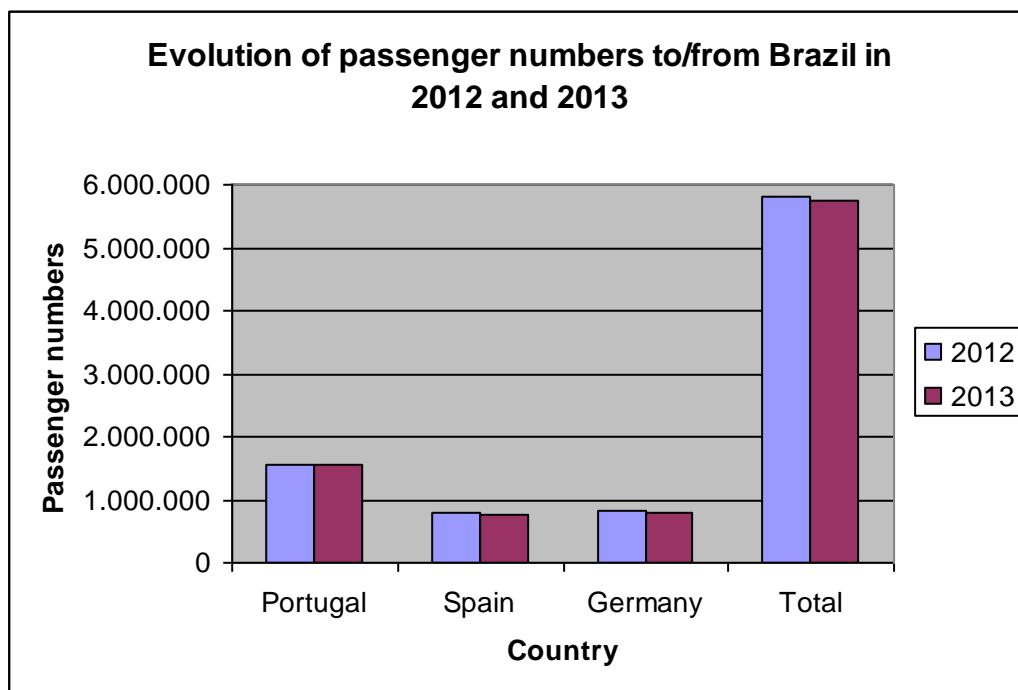
Evolution of passenger numbers to/from Brazil in 2012 and 2013

Table C.3 - (Source: Author´s representation of Brazilian's ANAC Annual Statistical Digest 2012).

CHAPTER VI

Discussion

6. Discussion

The gathering of information for the units of analysis established in the present work has, in its essence, the objective of comparing TAP´s competitive position relative to other airlines operating similar business models, focused in a network of services operating from the same geographical region and with links to the region that is the core of TAP´s intercontinental operations: Brazil.

The author´s initial intent was to analyze and compare one specific destination common among the three airlines studied; Sao Paulo. The intention was to determine the costs of operating to that destination from each airline´s respective *hub*, comparing parameters of operating costs, load factors, aircraft rate of utilization, direct and indirect demand for the service, infrastructural quality on respective *hub*, and connectivity.

Due to the unsuccessful attempts at gaining access to in-depth data on the operating patterns from airlines, airports and International organizations that oversee the industry´s evolution, the author had to broaden the research focus in order to collect information and data that, even though not directly related to the connection between Europe and Brazil, could provide a clear picture of its overall competitive position regarding its presence in that market.

In the author´s perspective, that was achieved through the inclusion of units of analysis that are intrinsically related to its Latin American connections, as is the case of demand and connectivity. As for the operational information acquired from the three last published financial statements, it is the author´s belief that although it poses a limitation in terms of calculating operational factors to specific destinations, it gives back in terms of providing an overseeing picture of the whole operation. If, as in the case of Lufthansa, the gross of its intercontinental operations is clearly not Latin America, in the case of TAP and Iberia it is, with Latin American destinations taking around fifteen percent of the total number of passengers and around forty percent of TAP's available seats per kilometer (ASK), for example. The computing of the airline's entire operational provides the opportunity of analyzing how each of them operate as a system, since competition in the air transport business, especially in Europe, is not protected by

the national borders of origin countries. Therefore, TAP, Iberia and Lufthansa all compete for the same passengers on all of its common destinations (and also the ones where they cooperate or code-share with other airlines), offering passengers the choice of either a direct or indirect service, with differing levels of service, schedules and prices. The findings in each of the two groups of units of analysis are the following:

6.1. Operational

In the matter of cost per available seat per kilometer, and from 2012, different results were achieved by the airlines present in this study. TAP has had a relatively constant CASK evolution, with an increase in 2013 followed by a sharp decline in 2014 that has its reflections in the staggering increase in aircraft´s utilization rate and load factors. TAP´s fleet utilization rate is actually one of the highest in the European airline industry, and was mentioned in interview conceded by the airline´s CEO by the author, and is a position that was even published in different airline economics publications (Holloway 2008, p440). The spike in aircraft utilization verified in 2014 was in part triggered by the surge in capacity with new destinations and increase of frequencies, but the delay in the arrival of new aircraft may have also played a part in these high utilization rates by the existing fleet. For the long haul fleet, TAP has reached in the last observed year a rate of utilization close to 16 hours per day, according to the airline's CEO, who observed that this fact is "*a great advantage, because an aircraft stopped is not diluting its fixed costs.*" The Portuguese airline, in the years observed by this study, has managed to bring its overall load factors close to 80%, which was the low-fare airlines' average only ten years ago. In its overseas destinations, namely the Brazilian ones, it has managed to maintain an overall 84% occupation in 2014, an impressive fact and accomplished in a market with fierce competitors.

TAP's competitors mentioned in this work have different positioning regarding its operational results. For example Iberia, where operating costs have come down considerably during the analyzed period, with the airline achieving in 2014 the same CASK value of TAP, decreased from roughly 15% higher just two years

before. The fact that it achieved this decrease in operating costs with a smaller number of aircraft and slightly lower load factor is evidence that the airline was possibly offering excessive capacity. The relatively recent rescaling of operations that took place after 2013, with a clear focus on intercontinental destinations and more economical aircraft seen in its fleet composition, has put Iberia in a position where it poses itself as a formidable competitor to TAP, with margin to improve, as its aircraft utilization rates are still considerably lower than TAP.

Lufthansa is an airline with operating costs higher than TAP or Iberia. Its CASK is roughly 30% higher than both TAP and Iberia, and its load factors and aircraft utilization rates have been declining in the last two years when compared with TAP. The share of long-haul aircraft in the fleet is similar to TAP, but the utilization rate in the case of the Portuguese airline has increased sharply during the period whereas the German carrier lowered it. Taking for instance the share of long-haul aircraft from the fleet and considering the proximity of Lisbon to the intercontinental markets it serves, there is clear evidence that TAP is geographically better suited to explore those markets regarding operating parameters, hence the higher utilization rates. As stated by TAP's CEO, the airline *"is the only airline in Europe that can do a complete turnaround to any destination in Brazil in the same day".*

What is retained here is that TAP's close position to the majority of its long-haul destinations gives it the possibility to better explore the utilization of its aircraft, and even while operating a fleet slightly older and perhaps less efficient than its competitors. The Portuguese airline has managed to constantly increase its load factors and keep costs in check. If it would pursue a shift in its operating patterns, focusing more in the intercontinental destinations as source of growth, as the case of Iberia's long-haul fleet percentage has shown, it is foreseeable that TAP costs would lower even more and load factors would increase, considering the load factors recently verified in TAP's long-haul destinations.

6.2.   Infrastructure and demand

Regarding the quality of its infrastructure, and among the countries where the three airlines in this study are based, Portugal is visibly the nation with the

stronger evolution in its air transport infrastructure, and has climbed fifteen positions in the ranking to twentieth, accompanied by an evolution of the quality index published in the World Economic Forum *Global Competitiveness Report* from 5.6 to 5.7 (WEF 2012, 2013 & 2014). Spain has kept its score in the report, climbing seven positions to number ten, which the report reckons as a competitive advantage (WEF 2014). On the other hand, Germany has lost six positions, being now in the thirteenth place and loosing 0.5 points in its classification to 5.9. The analysis of the three countries in this study is evidence of the recent tendency of downgrading in the air transport infrastructure quality, and a positive factor for an airline utilizing the infrastructures in Portugal, the only country where an evolution occurred, even more remarkable considering the financial crisis that has affected it so deeply. The partial privatization of the company that manages the airports in Portugal has contributed to the investment in the existing infrastructures, and if in part it is true that taxes and fees have increased since the conclusion of the process, it is also true that, relatively to the largest Spanish airport, *"Madrid still has taxes 78 per cent superior to Lisbon"*, according to the CEO of ANA, in an interview conceded to the author. Starting with a simple search in any airline's website, for a given trip starting in the airport of Frankfurt, is also possible to infer that the taxes and fees attached to the ticket of a passenger embarking in Frankfurt are even higher than the ones in Madrid, but the author could not determine the formula for its calculations or research further based on the information available, for what it does not issue further comments on that matter.

Regarding the demand of traffic between the three countries from where the airlines are original and Brazil, without any surprise Portugal comes up as the number one country in Europe both as destination and origin of traffic to Brazil. Unfortunately, the source of information, Brazilians National Agency for Civil Aviation, did not publish, until the closure of this work, its annual statistical report for 2014, which is why the author considers the last two available years, 2012 and 2013. In those, the steadiness is clearly visible in the number of passengers between Portugal and Brazil, which relates to the maintenance of TAP's overall capacity as previously cited in the Operations sub-paragraph.

As for the other two airlines operating from both Spain and Germany, both share a decrease in the number of passengers with origin or destination to Brazil, signalizing a more volatile relation between those markets and Brazil.

In terms of connectivity, the sheer scale of Lufthansa's operation in its Frankfurt *hub,* connected with the dimension of the German economy and its financial center in the same city, gives Frankfurt-Main airport an overall 71.252 connectivity options, according to the recent report on the subject published by Airport Council International (ACI 2014), a number sixteen times greater than the connectivity offered by Lisbon, and almost five times greater than Madrid. This number reflects the operational scale of the German airline, by far the biggest user of Frankfurt airport and the largest airline in Europe. Nonetheless, the cited report goes as far as dissecting connectivity from European airports to the different global continents and regions, and the case of Latin America is reported as well.

In this regard, Lisbon fares considerably better to that region than Frankfurt, relatively to its total connectivity, and it's possible to infer that a higher proportion of TAP's operations is directed to serve Latin America, especially when considering that TAP is the only airline serving Latin American destinations from Lisbon. This is not the case for both Madrid and Frankfurt, with multiple airlines serving connections between the two continents. The report analyzes Latin American connectivity to European airports, and as so, Madrid appears as having 18% of total connectivity to that continent, ahead of Frankfurt with 12 %, and Lisbon with 5%.

Even considering that Madrid's connectivity to the continent in percentage of its total connectivity is greater than Lisbon's, the total output and demand between Portugal and Brazil and the fact that the Portuguese airline is the only one operating between Latin American destinations and Portugal, gives, in the author's knowledge, a greater impact for TAP and Lisbon as connection point between Europe and Brazil as opposed to Iberia and Madrid, or Lufthansa and Frankfurt.

Conclusions

The airline business, perhaps even more than other service industries, is characterized by ferocious competition in all fronts. In this particular services industry, national determinants are a significant part of the competitive position of the company, since home country conditions frequently influence the entire company, which competes globally against companies in other countries with better or worse conditions.

While that ferocious competition was not the case in the past, when most of the industry was protected by bi-lateral agreements limiting capacity to pre-determined levels accepted by governments, that is not the case any longer. Today deregulation in many markets, including the European, has torn down the restrictive government barriers that protected the airline industry's legacy players regarding its market share. The installment of capacity to and from any point in the Union depends now only on access to operating assets and abiding to common operating legislation. Intercontinental air transport, on the other hand, continues to be ruled by air service agreements between nations, and most of the Latin American countries connections to Europe are still so determined, including Brazil.

Following Porter´s five forces model, and together with the research findings, the author came to the conclusion that the market in which TAP operates has two distinct competitive scenarios: the European and the intercontinental, the later with a strong focus on Brazil, as the 39% of 2014's capacity to that country demonstrates. The bi-lateral air service agreements between single European countries and Brazil restrict direct competition between city pairs, but do not restrict indirect competition from offering connection to the final destination with one or multiple stops.

Competition in this market was the motivation of the present work, and is also at the core of TAP Portugal's intercontinental operation and strategy. The geographical position of Portugal, its close location to Brazil and demand for air services based on historical and economical factors, is also a competitive

resource that gives the Portuguese airline a competitive advantage in comparison to other European airlines that do not justify the demand to create capacity between its respective *hubs* and Brazilian destinations other than Rio de Janeiro and São Paulo. Those airlines have to offer, instead, lengthy detours either through their European *hubs* or through third companies from Rio de Janeiro and São Paulo so their passengers can reach their final destinations.

In an industry with numerous players fighting for the same customer, where the power of suppliers is translated into a duopoly of large aircraft manufacturers, with only Airbus and Boeing producing the large aircraft utilized by the large network carriers, and where the volatility attributed to the cost of fuel accounts to around 30% of airline total costs, it is clear that the airline industry is squeezed between the power from its suppliers and the power from its buyers. Hence, there is a need to focus strategies on profitable routes, with sufficient demand, and manageable costs.

Since fixed costs in this industry assume such high sums, with the price of assets such as aircrafts and engines commonly reaching millions of Euros, the need to gain scale through market share and selling of existing capacity appears to have become the norm, with nowadays airlines finding competition for every passenger, either directly in a parallel service, or indirectly routing through other *hubs*. Costs have thus become one of the main competing grounds for airlines, increasingly more in the European market against the low-fare, but also in the intercontinental market due to the systemic effect it has in network carriers.

This characterization of the business, squeezed by limited number and volatility of suppliers, and pressured by intense competition in most of the operating markets due to the low barriers of entry, has forced the airline business to focus increasingly more on control of costs in order to offset competitors by offering the most attractive option to its customers. As demonstrated by Porter, competition in certain industries, when based on pricing and without different customer segments, will go as far to squeeze the profitability of an industry, forcing weakest competitors to the point where competing is no longer viable (Porter 2008). And that is exactly what has happened in the airline business. The truth is that, if management is not strongly focused on the economics of its operations,

airlines will not survive long in the business, as has been the case of some European airlines like the Hungarian Malev (Akbar et al, 2014).

The analysis of the operational results from the airlines mentioned in this study has shown, during the period from 2012 to 2013, a strong performance by TAP when compared to its competitors. The company's assets utilization and costs are shown, throughout the period, to be better than this occasion's competitors. Nevertheless, the turnaround implemented by IAG in Iberia since 2013 has already produced significant results, and Iberia's CASK in the last reported year is the same as TAP. When taking into account the ongoing turnaround strategy, and its still lower asset utilization rate, it appears as a heads up for the Portuguese airline, which has already responded to this improvement from the Spanish airline in 2014, in the form of intensifying its assets utilization through opening new routes and increasing capacity.

This brings us to the second set of units of analysis of the research, the infrastructure quality and demand patterns. Because an airline isn't made only of econometrical factors, and because those are only numbers without a business case, TAP Portugal's strategy is not limited to the environment's conditions, responding to competitors by lowering costs or improving operational factors. The airline relies in the conditions inherited by the fact that it operates from a country with strong ties to Brazil. The demand for air transport between the two countries and smaller distance between Brazil and Portugal are a natural competitive advantage that gives the airline a head start, when compared to other European airlines.

In this regard, TAP utilizes the Portuguese geographical position to exploit competitive advantages from resources that are intrinsic to an airline operating from Portugal, from where it is the only European airline legally authorized to operate to Brazil. The aircraft utilization rate, as previously mentioned, is higher in the Portuguese airline, because it can extract an extraordinary utilization of its long-haul fleet since the airline can avoid the nighttime airport restrictions, a reality in most of European airports. TAP is able to fly to any city in Brazil and back to Lisbon without the need to have its aircraft parked for long periods abroad while waiting for European airports reopening. This positively affects the

airline's costs, and together with the load factors that the Portuguese airline constantly achieves in its intercontinental flights, is translated into a competitive advantage.

Infrastructure quality of the airline *hub* is another resource against competitors. In this aspect, airports play the vital role of a supporting industry for airlines, and the improvements that the Portuguese air transport infrastructure has made in the last three years are noticeable and referred by the CEO of TAP. Portugal is the only of the three countries analyzed in which an improvement in the quality of the infrastructure has taken place. That has put Portugal in an upward trajectory which is steeper when compared to Spain, and contrary to the downward trajectory of the German air transport infrastructure. Even so, Portugal's overall air transport infrastructure quality still lags behind both of the two other countries, but the improvements are significant. They attest the effort of the airport management company, ANA Aeroportos, in improving the quality offered to passengers and airlines alike. While it cannot be considered a competitive advantage to the Portuguese airline in the present time, the rate of investments and growth strategy that ANA Aeroportos has put in place recently, given it continues, may place Portugal higher in the rankings in a short period of time and act as a factor of attraction to passengers (Han et al 2012).

Perhaps its biggest resource, and the one that TAP has been exploring the most in recent years, is the demand for air transport between Brazil and Portugal. Equivalent to the combination of Spain and Germany, it is the main resource that makes TAP's extensive network to Brazil possible. The stable numbers obtained in 2012 and 2013, when compared to Spain and Germany, indicate the dependability of the demand between Portugal and Brazil, and possible low levels of substitution by the customers.

Connectivity is the last unit of analysis studied on this case. In this regard, connectivity to and from the three airlines respective *hubs* to the Latin American continent was analyzed, since information to specific Latin American countries was not available. While connectivity from Lisbon to Latin America is lower than Madrid or Frankfurt, it is important to mention what is not explained in the numbers: while accounting for less than one third of Madrid's and less than half

of Frankfurt's connectivity to Latin America, the only airline operating from Lisbon to Latin America is, indeed, TAP. In the other two cases, more than two airlines are making the numbers, from what it can be concluded that, if in connectivity to Latin America Lisbon is behind its peers, in connectivity to Brazil, taking into account the airline's network, it can be considered a competitive advantage.

From studying the state of the art in the subject of competitive advantage, from Porter to Barney, and utilizing the case-study method developed by Yin, the author searched for factors that explained the existence, or lack thereof, of TAP Portugal's competitive advantage connecting passengers from Europe to Latin America. While limitations arose from being unable to determine the number of passengers connecting in each *hub* from and to Latin America[27], or to calculate operating data on specific routes operated by the airlines, the author could calculate the overall operating figures for the airlines and origin countries infrastructure quality and demand patterns, and from there determine mutual implications that those factors have.

It is clear, after this study's research, that TAP Portugal's strategy makes use of its resources, especially its close distance and demand to Brazil, deploying it to cover the market which makes most sense in a business perspective. It has an overall competitive advantage compared to Iberia and Lufthansa in the utilization of its assets and its operating costs, and achieves that by exploiting advantages it naturally has in terms being geographically well situated and having strong ties to Brazil. The scale provided by the demand to Brazil is exactly what gives the Portuguese airline the opportunity to connect Lisbon to twelve cities in Brazil. Putting that in context with the disadvantage to the airlines mentioned in this study in terms of connectivity to Latin America and airport infrastructure quality, it is remarkable that TAP Portugal, operating from the southwestern tip of Europe, manages to keep the edge in connecting Europe to, perhaps not the all of Latin America, but its largest market, Brazil.

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[27] The validity of such a study was mentioned in a report by Portuguese ANAC in 2009, but not concluded as until the conclusion of this study. Consulted on the 25th of April, on
http://www.anac.pt/SiteCollectionDocuments/Publicacoes/estudos/EstudoAeroportoLisboa1990a2009.pdf

By the conclusion of this study, the privatization process has been decided and the winner has been announced as the consortium consisting of JetBlue and Azul Airline's founder and CEO David Neeleman and Portuguese investor Humberto Pedrosa. Long needing investment and forbidden from accepting investments from the State due to European legislation, TAP now has the opportunity to spread its wings, modernize its fleet, consolidate its market share and perhaps expand growth to other destinations. A new generation of aircraft is available to provide new opportunities to airlines, from the Airbus A350 and its long range and capacity, the Boeing 787 Dreamliner with its comfort and economics, the Airbus A330Neo and its better economics compared to TAP's current Airbus A330, and the Airbus A321NeoLR. This last one, with a range that would make possible for an airline like TAP to reach the Northeast of Brazil and many cities in sub-Saharan Africa, would give the Portuguese airline the possibility to, perhaps, increase frequency of services to existent markets by splitting the capacity of larger aircraft into smaller ones, allowing operations to destinations with smaller demands while increasing market share in its *hub* in Lisbon. The future will tell what will be the strategic choices of the airline, but one fact is assured: the conjugation of TAP and its *hub* in Lisbon are and foreseeably will continue to be a source of competitive advantage, if not to all markets, surely to the Brazilian one.

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Glossary

- **AEA**:

  The Association of European Airlines brings together 24 major airlines, and acts as a common voice to many European airlines in policy negotiations.

- **ASK**:

  Are obtained b multiplying the number of seats available for sale on each flight by the stage distance flown.

- **CASK**:

  Is a measure obtained by dividing total operating costs by total ASK. Operating costs exclude interest payments, taxes and extraordinary items.

- **CEO**:

  Acronym to Chief Executive Officer.

- **CODA**:

  The objective of the Central Office for Delay Analysis within EUROCONTROL is to provide policy makers and managers of the ECAC Air Transport System with timely, consistent and comprehensive information on the air traffic delay situation in Europe, and to make these available to anyone with an interest in delay performance.

- **Curfews**:

  Night time restrictions applied in airports worldwide, in order to reduce impact on neighboring communities.

- **EUROCONTROL**:

  The European Organisation for the Safety of Air Navigation, is an intergovernmental Organisation with 41 Member States, committed to building, together with its partners, a Single European Sky that will deliver the

air traffic management performance required for the twenty-first century and beyond.

- **Full services airline**:
An airline offering the full range of services to its passengers in different classes, from meals to baggage allowances.

- **GDP**:
Gross Domestic Product of a nation. The monetary value of all the finished goods and services produced within a country's borders in a specific time period, though GDP is usually calculated on an annual basis. It includes all of private and public consumption, government outlays, investments and exports less imports that occur within a defined territory.

- **Hub**:
An airport with flights to different places, where aside from the normal point to point services, passengers can arrive from one city or country and board flights to other cities and countries.

- **Hub and spoke**:
The operations design adopted by the majority of the network carriers, connecting traffic from different spokes radiating from the *hub* through a single connection on it.

- **IAG group**:
Parent company of British Airways and Iberia, the International Airline Group was created as an effort of consolidation in the European market.

- **IATA**:
The International Air Transport Association is the trade association for the world's airlines, representing some 260 airlines or 83 per cent of total air traffic. Supports many areas of aviation activity and help formulate industry policy on critical aviation issues.

- **ICAO**:

  The International Civil Aviation Organization is a UN specialized agency, created in 1944 upon the signing of the Convention on International Civil Aviation (Chicago Convention).

- **IFRS**:

  The primary mission of the International Financial Reporting Standards Foundation is to develop, in the public interest, a single set of high quality, understandable, enforceable and globally accepted financial reporting standards based upon clearly articulated principles. It is the set of rules utilized for publishing of results by the airlines in the study.

- **Legacy airlines**:

  The airlines operating since before the deregulation process that took place mostly in Europe and North America.

- **Load factor**:

  The number of passengers carried as percentage of seats available for sale.

- **Long haul**:

  Destinations or flights with greater distances, normally intercontinental.

- **Low-fares airlines**:

  Also known as low-cost or no frills airlines, these airlines are the ones that were born out of the deregulation of the markets to serve mainly short to medium distances, generally offering a simpler service and less comfort and are, therefore, able to practice lower prices as result of its lower costs.

- **MOB main operating base**:

  The airport from where the airline conducts the majority of its operations.

- **Malev**:

  Hungarian airline that went bankrupt in early 2012.

- **Star Alliance**:

  The world's largest airline network, from where member airlines like TAP Portugal and Lufthansa can offer, through partners network, multiple destination possibilities to its passengers.

- **Turnaround**:

  The operational actions such as refueling, cleaning and embarking/disembarking passengers that result in the aircraft being ready to conduct its next round of flying.

- **Wide-bodied aircraft**:

  The aircraft which have two passenger aisles and are generally larger, can fly further, and carry more passengers.

- **WW2**:

  Acronym referring to the Second World War, that lasted from 1936 to 1944.

- **Yield**:

  Is the average revenue collected per passenger-kilometer. Passenger yield is calculated by dividing the total passenger revenue on a flight by the passenger-kilometers generated by that flight. It is a measure of the weighted average fare paid.