The Strive for Competitiveness:
A Multiple Case Study of Airline Operations

Master Thesis - Copenhagen Business School 2013

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Abbreviations, Terms and Definitions

ASK: Available seat kilometers. The number of ASKs is a commonly used measure of an airline's carrying capacity to generate revenue, and is calculated by multiplying available seats with the distance flown.

CASK: Cost per available seat kilometer. CASK is a unit cost measure, and compares the cost associated with operating a flight with the distance flown and available seats on that flight. It is calculated by dividing operating costs on the number of ASKs.

FSNCs: Full service network carriers

IATA: International Air Transport Association

LCCs: Low-cost carriers

PAX: A proxy for the number of passengers carried by an airline.

Secondary airports: An airport that functions as a complement to a primary airport, and is often located further outside the city-center compared to primary airports.

RPK: Revenue passenger kilometers. The number of RPKs is commonly used as a measure of the actual volume of passenger airline traffic, and is found by multiplying the number of paying passengers with the distance flown.

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1 Introduction

1.1 A Highly Cyclical and Regulated Industry

The airline industry is characterized by the paradox of continuous growth in demand for its services and notoriously low profit margins. Ever since the 1970s, the industry has epitomized a cyclical pattern of profitability, where a couple of profitable years are followed by a period of crisis. This cyclical pattern was evident throughout the 80s and the 90s, and in the early 2000s the airline industry was once again at the brink of another downturn. This time, however, the successive external shocks that followed "*turned crisis into catastrophe*" (Doganis, 2010, p. 68). The terrorist attacks on September 11th 2001, the invasion of Iraq in 2003, and the escalation of fuel prices in 2004, are all examples of incidents that severely affected the airline industry, demonstrating its vulnerability in relation to external matters (Doganis, 2010). The recurrence of such effects, combined with the internal cost challenges that further add to the complexity of the industry, have resulted in a number of airlines struggling for their survival, even though the industry as a whole has been profitable for the past three years. Major airline costs such as labor, fuel, and aircraft do not vary significantly with the number of passengers, and as a result of such fixed costs, minor shifts in the number of passengers or the general price level can have major effects on the economics of an airline. Furthermore, since the costs of carrying extra passengers are negligible given otherwise unsold seats, the pricing system is intricate and ticket prices volatile. Further contributing to the complexity is the progressive deregulation undoubtedly influencing the industry over the last decades. Accordingly, the airline industry is viewed as one of the worlds most competitive industries.

Historically, the industry has been subject to strict regulations. In the period between 1919 and 1949, an international highly regulatory framework evolved as a response to the technological, economic and political developments within air transport. This framework was left largely unchanged until the late 1970s, constraining both innovation and change within the industry. However, a review of United States international aviation policy in 1979 paved the way for two decades of gradual deregulation. This liberalization accelerated in the mid-1980s, as several important European countries, and eventually the European Union, adopted it. The liberalization culminated in 2007 through the "Open Skies" agreement between the European Union and the US. Despite this extensive deregulation, airlines still have to operate within bilateral constraints on a number of routes, for instance within African and Asian markets.

The growth within these markets is predicted to have major implications for the future development of the industry. A number of existing carriers will be subject to increased competition, especially on long-haul routes, and could in the long run see themselves bypassed by rapidly growing airlines from Asia. Norwegian CEO Bjørn Kjos has highlighted the threat posed by these new-entrants, pointing to their access to inexpensive labor and their new and fuel-efficient fleets as a solid basis for future competitiveness. He further predicted that the economic growth in Asia will result in a change in the travel pattern of passengers, shifting towards a greater proportion of passengers travelling from east to west (DN, 2013a). On the European short-haul market, both existing and new carriers will influence the competitive landscape. Michael O'Leary, CEO of Ryanair, has predicted that large airlines with old fleets and high labor costs will struggle to make a profit on short-haul routes, and that the current problems of carriers such as Alitalia, Iberia and SAS will further escalate in the future (DN, 2013b). As a result, it appears to be difficult both to prosper and survive in the industry, historically and contemporary, as well as in the time to come.

1.2 Two Distinctly Different Ways to Compete

In the airline industry, a distinction is made between two different business models, namely full service network carriers (FSNCs) and low-cost carriers (LCCs). The carriers that have existed since prior to the deregulation are essentially FSNCs. These carriers operate according to a hub-and-spoke route network, where passengers are flown in from various cities, referred to as spokes, to a main hub, before embarking on a connecting flight. Large FSNCs such as Lufthansa and British Airways have been operating for over half a century, establishing main hubs in geographically strategic cities with a broad variety of possible route connections, offering both short- and long-haul flights. Throughout the last decades, this traditional hub-and-spoke network model has faced increased competition on short-haul routes from LCCs, such as Ryanair and easyJet, operating point-to-point direct flights between popular destinations. These carriers offer price levels significantly below their FSNC counterparts by minimizing all possible costs, thus owing to the label of low-cost no-frills carriers.

The competition between these two different business models has received considerable attention in the last decades, and numerous questions have been raised regarding the long-term sustainability of each model. FSNCs have gradually been forced to change pricing strategies on short-haul flights to stay competitive. For these carriers, the main question moving on will be if and how to compete on

these routes in a profitable way. One possibility is to reduce their existing cost disadvantage through the implementation of cost cutting programs. Several initiatives have already been attempted by various airlines, some of them fairly successfully. Evidence has shown that the unit cost gap has been reduced in recent years (Tsoukalas, Belobaba, & Swelbar, 2008). However, there are several differences in operational costs where network carriers will have difficulties matching the efficiency of the low-cost model due to underlying structural differences. Another possibility, which has developed gradually and with varying degree of success in the last years, is FSNCs launching their own low-cost subsidiaries, or transferring parts of their operations to existing LCCs. An example of the latter is Lufthansa, which recently expanded the transmission of operations to Germanwings in order to counter LCCs and meet the competition head-on within the short-haul market (Gerlach, 2012). With regards to the LCC model, one of the main questions concerns whether it is possible to sustain the low cost advantage over time. Although many LCCs have failed to survive, the experience of Southwest in the US and that of Ryanair since 1991 suggests that the cost level can be maintained in the long term, proving the low-cost model's robustness. Accordingly, it is reasonable to expect that the larger and more successful LCCs will continue to undermine the economics of many of network carrier's short- to medium-haul operations by capturing a growing market share.

Due to the challenges outlined, both FSNCs and LCCs have to focus on improving their competitiveness in order to survive in the industry's highly competitive environment. Accordingly, a comprehensive understanding of the factors that influence both models' competitiveness is of the utmost importance. Clearly, there are external factors that can affect the general competitiveness of an airline regardless of business model. Global economic development, volatile oil prices and uncontrollable weather are just some of the concerns airline management must keep in mind on a daily basis. However, as these factors are outside the immediate control of airline managers, the focus of this thesis will be directed towards the internal concerns and determinants of airline competitiveness.

2 Problem Discussion

"*When businesses have to cope with a more challenging environment, they look to their operations function to help them respond*" (Slack, Chambers, & Johnston, 2010, p. 10).

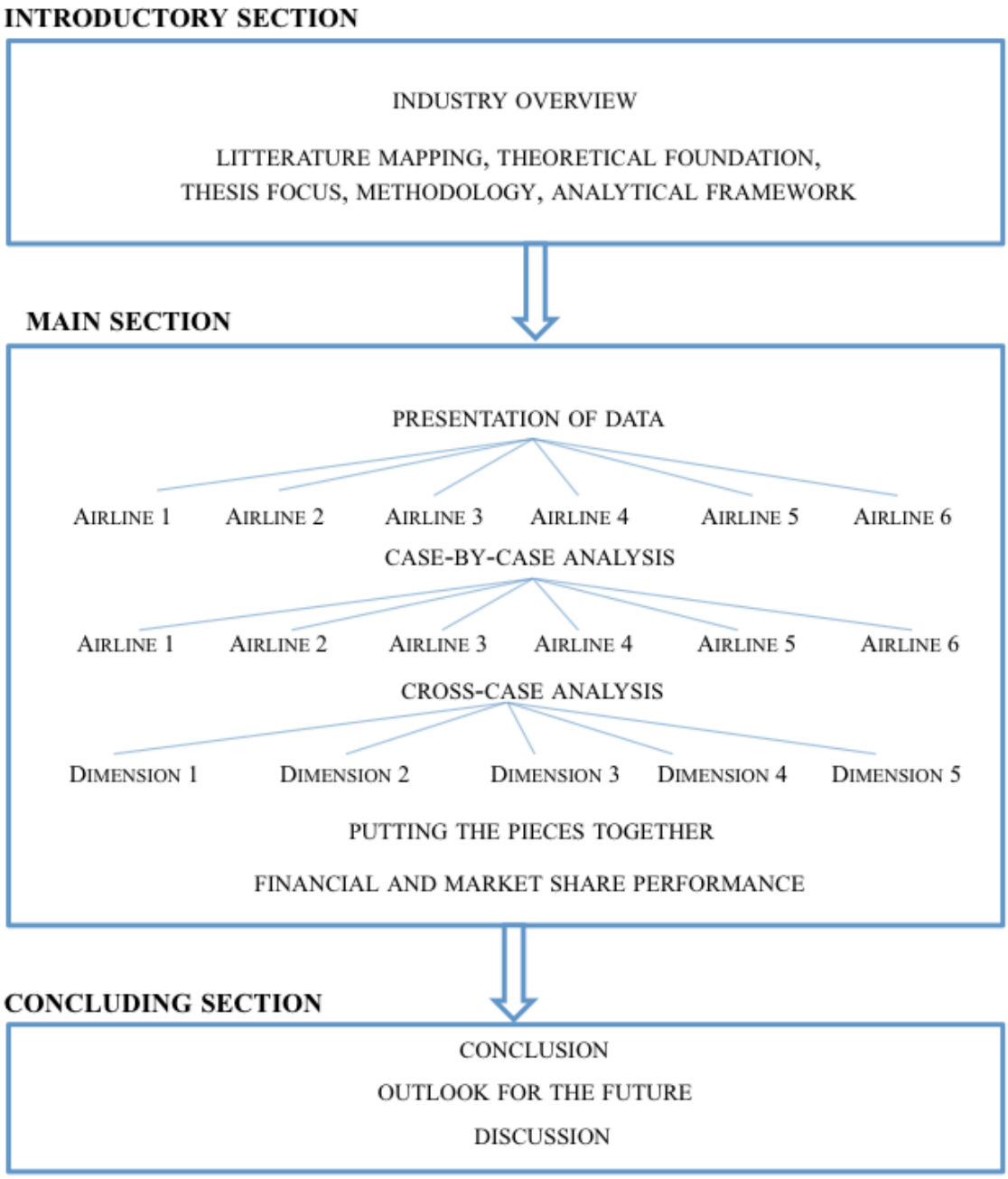
In the operations management literature, organizations are seen as comprising three core functions: the product and service development function, the marketing function (including sales), and the operations function. Whereas the product and service development function is responsible for generating future customer requests by creating new and modified products and services, the marketing function is concerned with communicating an organization's products and services to its respective markets. Moreover, the operations function is responsible for fulfilling customer requests by producing and delivering products and services through the transformation of resources. Operations management refers to the administration of this process. Although the names of these core functions may vary, they exist in all organizations due to their need of selling products or services, satisfying their customers, and developing the means to satisfy customers in the future. Even though all the three core functions are of importance, it is the operations function that influences the company's competitiveness by *"providing the ability to respond to customers and by developing the capabilities that will keep it ahead of its competitors in the future"* (Slack et al., 2010, p. 34). As a result, operations management can be seen as the key to either make or break any business.

There exists no simple explanation to the previously outlined paradox of the airline industry's continuous growth and its cyclical and marginal profitability. This makes the task of matching supply and demand for its products and services utterly difficult. According to Doganis (2010), the airline product is in its essence of a homogeneous nature, implying that one airline seat essentially is very similar to another. This premise has two significant consequences. First, this homogeneity makes it relatively easy for new airlines to emerge on existing routes, at least on a short-term basis, further influencing the competition within the industry. Second, it compels airlines to initiate efforts in an attempt to differentiate their services from competitors. This can be attempted by for instance increasing the frequency of departures, improving the in-flight experience with enhanced catering and seat comfort, or introducing features such as free Wi-Fi (Doganis, 2010). These variations imply different focus areas in terms of operations, further adding to the high degree of competition

and complexity within the industry. As highlighted by the introductory quote from Slack et al. (2010), companies tend to look to their operations function when they are faced with a more competitive environment. Accordingly, using the operations management literature to analyze the competitiveness of different airlines in this industry can yield valuable insights.

In order to embark on such a broad topic, analyzing the competitiveness of two different business models, this thesis will be structured in accordance with the following figure.

Figure 1 – Master Thesis Structure



3 Two Different Business Models

In this section, a brief description of the historic development and the characteristics of the two different business models in the airline industry will be outlined. Next, the convergence between the two models that has taken place in the recent years will be presented.

3.1 The FSNC Model

The international airlines that operated in the airline industry prior to the deregulation were essentially full service network carriers. The primary objective for these airlines was to attract passengers by providing a great variety of routes and destinations. Operating with a broad network, they provided connections from their hubs for passengers wanting to travel between points that were not linked by direct flights. In such a model, flights from different airports, referred to as spokes, function as feeder flights, arriving at the hub around the same time and thus facilitating the interchange of passengers and baggage between aircrafts. An effective hub allows an airline to attract passengers from a wide range of origins, creating dense traffic flows and high load factors on key routes. This model provides an airline with the ability to offer their passengers access to a number of destinations, equipping the airline with a substantial market appeal. The characteristics of this network model, however, made it rather costly, causing a relatively high fare level. As a result of the following deregulation, a new business model emerged that centered on minimizing operating costs to offer cheap flights. This developed in two different forms, the charter airlines and the low-cost carriers. The former type of airline will be excluded from this thesis as it only accounts for a marginal share of today's traffic (Doganis, 2010).

3.2 The LCC Model

The emergence of the LCC business model can be traced back to the liberalization of the American airline industry. The deregulation provided the opportunity to establish new and innovative business models, and Southwest Airlines was one of the first to exploit this opportunity. Established in 1971, Southwest offered low, unrestricted fares and frequent point-to-point departures for passengers travelling within the state of Texas. Their simple business model and consequently low operating costs equipped the airline with the ability to offer low fares. This resulted in both diverting traffic from other airlines, as well as stimulating demand by attracting travellers off the roads. After its initial success in the USA, the LCC model spread throughout the world. In Europe, the model

gained a foothold after the liberalization of the intra-European air service market in the 1990s, opening for the success of Ryanair and easyJet (Doganis, 2010).

The essence of the archetypical low-cost business model is simplicity. The aim is to offer simple, low-fare, point-to-point flights and to achieve high aircraft and crew productivity by operating a single-type aircraft fleet from secondary and uncongested airports. Two additional features are the focus on higher seat density and higher daily utilization of the aircrafts (block-hours per day) compared to full service network carriers. These features allow LCCs to increase the productivity of each aircraft measured in available seat-kilometers (ASK) and to spread the annual fixed costs over more hours, thus reducing the unit cost per available seat-kilometer (Doganis, 2010). Figure 2 summarizes the most important differences between the traditional LCCs and FSNCs.

Figure 2 – Main Differences between Airline Business Models

	Low-cost carriers	**Traditional network airlines**
	Simple product	*Complex product*
Fares	Low, simple – one-way	Round-trip - complex
	Minimum restrictions	Multiple restrictions
	Fares rise near departure	Lower fares last minute
Distribution	Avoid travel agents	Dependent on travel agents
	Aim 100% direct: Either online or call center	Own ticket office / Call center
	Ticketless	Paper tickets
In-flight	Single class	2 or 3 classes
	High-density seating	Low seat density
	No seat assignments	Assigned seats
	No meals or free drinks	In-flight catering
	Simple operations	*Complex operations*
Aircraft	Single type – maximum two	Multiple types – aircraft tailored to routes
	High utilization (11 hours/day)	Low utilization on short sectors
Sectors	Short – 500 to 1,000 km	From ultra-short to long
	Point-to-point	Hub-based network
	No hubbing or connecting flights	Pax/flights connected to a hub
Schedules	Used to shift demand	Response to current demand
Airports	Secondary or uncongested (where possible)	Focus on larger airports
	20-30 minute turnarounds	1-hour turnaround on short sectors
Staff	Competitive wages	Higher wages
	Profit sharing	Minimal profit sharing
	High productivity	Over-staffed

Source: Table 6.2 in Doganis (2010)

3.3 Converging Models

In recent years there has been a tendency of convergence between the two different business models. In the mid-2000s, several FSNCs adopted LCC features such as one-way fares and online ticket sales as a response to low-cost competition (Doganis, 2010). Additionally, some FSNCs have acquired their own low-cost subsidiaries. One recent example of the latter is Lufthansa's transfer of short-haul flights to their low-cost brand Germanwings (Gerlach, 2012). On the other hand, a number of LCCs have modified central elements of their original business model, such as utilizing primary airports to a greater extent and enhancing their in-flight service. Klophaus, Conrady and Fichert (2012) argue that European LCCs have adopted a hybrid business model, highlighting that the deviations from the original LCC model are especially evident with regards to airport choice and network strategy. These factors have complicated the boundaries between the two previously distinct business models. As a result, we consider it to be useful to consider the different variations within these two different business models, and not necessarily make an absolute distinction.

4 Literature Mapping

There is a vast amount of research focusing on a broad set of factors that can be related to competitiveness in the airline industry. The following section will thus present different parts of the relevant literature and classify them in accordance with their focus. This will provide a comprehensive overview and enable us to find a suitable approach.

4.1 Prevalence of Single Measures

The common denominator for most of the previous research relates competitiveness to single measures. A large body of research investigates the cost and productivity of different airlines. Encaoua (1991) examines the cost and productivity differences between various European airlines, while Windle (1991) investigates the unit cost and productivity differentials between US and non-US carriers, documenting a productivity advantage for US airlines due to higher traffic density. Furthermore, Good, Nadiri, Röller and Sickles (1992) analyze the productivity and efficiency of both European and US air carriers, and Oum and Yu (1995) make a productivity comparison of the world's major airlines during the 1986-1993 period. In a subsequent article, Oum and Yu (1997) also evaluate the cost competitiveness of the world's 22 major airlines by constructing a cost competitiveness indicator that accounts for the different network and operating characteristics of

different airlines. Furthermore, Assaf and Josiassen (2011) assess the technical efficiency of UK airlines in the period 2002-2007, demonstrating that the efficiency level of UK airlines has been declining since 2004.

Some parts of the literature also focus on the competitive effects of alliances, such as Gayle (2007). Moreover, Sjögren and Söderberg (2011) investigate the productivity effects of alliances, concluding that it has ambiguous effects. However, the International Air Transport Association (IATA, 2011) highlights that the benefits from alliances become even larger as the demands from customers are increasing.

4.2 Exceptions from Single Measures

In recent years, there have been examples of studies that move away from single measures, and thus broadening the perspective on airline competitiveness. Oum, Fu and Yu (2005) examine the productivity, cost competitiveness and average yields of 10 major full service network carriers in North America. They conclude that an airline's financial success not only is dependent on its cost efficiency, but also its pricing and yields management strategy. Additionally, Barros and Peypoch (2009) combine operational and financial variables in order to evaluate the technical efficiency of European airlines, finding evidence supporting the importance of membership in an alliance.

4.3 The Effects Related to the Emergence of the LCC Model

A large body of literature is also dedicated to the effects caused by the emergence and growth of the LCC business model within the airline industry. Dennis (2007) assesses the strategies adopted by major network airlines in reaction to the competitive threat from low-cost carriers, while Brueckner, Lee and Singer (2010) empirically investigate the effect that LCC presence have on average fares in the US domestic market, revealing a 30% average decrease in fare level. Furthermore, Williams (2001) highlights that LCCs have not only produced major challenges to FSNC, but also charter carriers.

4.4 The Importance of Multiple Measures

Although a vast amount of research has been conducted regarding the competiveness of airlines, only a small number of studies seem to focus on multiple measures. As highlighted by Porter, there is *"no single policy or grand step that can create competitiveness"* (World Economic Forum, 2007,

p. 54). Due to the airline industry's high degree of complexity and dynamic nature, this argument becomes especially relevant. This is further emphasized by Chang and Yeh (2001), who assert that there are no single measures capable of reflecting the overall notion of airline competitiveness.

Accordingly, competitiveness arguably has to be examined using multiple performance dimensions. The following section will thus first outline a definition of competitiveness. Next, three different perspectives on competitiveness will be presented, before competitiveness will be linked to the operations function of an organization, which captures the features of the formerly presented perspectives on competitiveness. Further, Slack et al.'s (2010) five generic performance objectives related to the operations function will be outlined, followed by an account of how these performance objectives can have both internal and external effects. Finally, it will be outlined how a company's performance within each dimension can be visualized through polar representations.

4.5 Competitiveness

The notion of competitiveness has received increasing attention the last decades, and has to a larger extent obtained a more prolific place on the company agenda. Nevertheless, a universal definition of competitiveness does not exist, and competitiveness can accordingly mean different things to different organizations. Broadly speaking, competitiveness one way or another involves attracting customers to your product or service in a way that allow your company to make a surplus. Porter defines competitiveness by the productivity with which a business utilizes its financial, human and natural resources (World Economic Forum, 2007). Taking this one step further, Feurer and Chaharbaghi (1994) highlight that "*the ultimate goal of an organization is to make a profit in order to satisfy its shareholders and achieve continuous profit growth while fulfilling the interests of other stakeholders*" (p. 49). On a short-term basis, other objectives than profitability may be the main target, such as market share. In the long-term, however, a company has to generate a profit in order to survive and ensure its competitiveness. As a basic profit equation consists of both a revenue and a cost side, generating profit involves in its simplest form either being able to charge a premium price for your product, or keeping costs at a minimum level in order to offer low prices and attract vast amounts of customers.

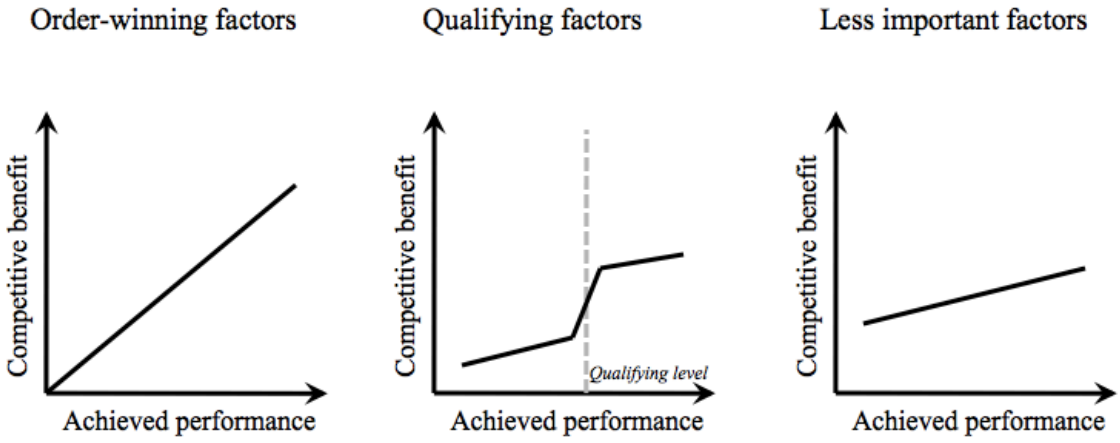
4.6 Different Perspectives on Competitiveness

As competitiveness is a multifaceted notion, there exist a vast amount of perspectives that encapsulates differing aspects of the concept. The following section will outline a selection of these.

4.6.1 The Market Requirements Perspective

In a market requirement perspective, a firm's competitiveness depends on its ability to satisfy the requirements of its market. These customer requirements are identified as competitive factors, and their relative importance can be assessed by making a distinction between *qualifying* and *order-winning* factors. Qualifying factors refer to aspects of the business where the products or service has to be above a certain minimum level in order to even be considered by the customer. Performance above this minimum level, however, is unlikely contribute to further competitive benefit for the company. On the other hand, order-winning factors are seen as key reasons for purchasing a product or service, and they directly and significantly contribute to winning orders. In addition to qualifying and order-winning factors, one can identify factors that are *less important*, referring to factors that to some extent do not influence customers, but that may be important in other parts of the operations activity. As demonstrated in Figure 3 below, order-winning factors have an increasing effect on the competitiveness as achieved performance increases, while qualifying factors can severely damage the competitiveness of a firm if performance is below the expected level (Slack et al., 2010)

Figure 3 - Different Factors in a Product or Service Offering



Source: Own creation based on Slack et al. (2010).

4.6.2 The Operations Resource Perspective

The operations resource perspective adheres to the ideas represented by the resource-based view (RBV) of the firm. This influential theory views the firm as a bundle of assets, and argues that the competitiveness of a firm stems from its core competences, a term famously introduced by Prahalad and Hamel (1990). In order to ensure its competitiveness, a company has to understand its internal constraints and capabilities. According to Slack et al. (2010), strategic decisions consequently have to be taken on the grounds of whether they contribute to the development of the appropriate capabilities within the firm's resources and processes.

4.6.3 The Network Perspective

In a network perspective, competition is understood as a relational phenomenon, and market opportunities are associated with an actor's network. The "rate of return" is determined by the structure of a player's network and the location of the player's contacts. Together, these factors form what can be termed as *social capital*, and those who perform better than others are somewhat better connected. Moreover, companies compete for what Burt (1992) denotes as *structural holes*, which refers to the separation between two contacts that can provide a network with somewhat different benefits. Bridging a structural hole will equip the network with benefits that to some extent are additive rather than overlapping, providing the network with access to resources that it would not possess without these contacts. The structural hole-argument is *"a theory about competition for the benefits of relationships"* (Burt, 1992, p. 5). Competitiveness is related to both being part of a network that provides access to opportunities, and the position the company holds within that network.

4.7 Competitiveness and Operations Performance Objectives

Neither of the perspectives presented above are exhaustive, and a thorough investigation of competitiveness accordingly has to incorporate elements from all perspectives. As previously mentioned, the operations management literature argues that organizations comprise three different core functions, and that the operations function can be seen as the key to either make or break any business. Considering its potentially substantial impact, assessing the performance of the operations function is of great importance to any organization. This requires a tightly defined set of objectives. Slack et al. (2010) outline five different performance objectives, namely quality, speed,

dependability, flexibility and cost efficiency. These have both external impacts on the customers and internal impacts on the processes in the organization, and it is the role of the operations function to find the right balance between these different objectives (Slack et al., 2010). In the following, the different objectives will be outlined.

4.7.1 Quality

Quality is a multifaceted concept and can accordingly be defined in various ways. Slack et al. (2010) define it as *"consistent conformance to customers' expectations"* (p. 498). This implies firstly that certain specifications need to be met, and secondly that they have to be met on a regular basis. Additionally, there has to be an alignment between the customers' expectations and their actual experience of the product or service. Quality can thus be seen as the degree of fit between customers' expectations and customers' experience of a product or service over time. Comparing customers' expectations of a product or service with their retrospective evaluation of how it performs can accordingly serve as an evaluation of quality. Both customers' expectations and perceptions are influenced by a number of factors. Expectations can be seen as consisting of previous experience, word-of-mouth communication, and the marketing image provided by the company itself. Together, these elements function as a set of quality characteristics for each customer. Expectations play an important role with regards to quality, and as a result, quality will mean different things to different people. If the product or service exceeds the initial expectations, the quality will be perceived to be high. On the other hand, if the experience is lower than the initial expectations, the quality will be seen as low. Additionally, some of the factors that affect customer expectations can be influenced by the company, but can surely not be fully controlled. As a result, this might affect and complicate the evaluation of quality. Moreover, quality can also have influence within the organization's operations as enhanced quality both reduces costs and increases dependability, in the sense that less time will be spent to correct mistakes (Slack et al., 2010).

4.7.2 Speed

Speed involves doing things fast. For most production companies, and for some services companies, this would generally refer to the time that elapses from the customer requests the product or service to the time the customer receives it. In the airline industry, however, speed can be associated with minimizing the time between setting out on a journey and reaching the final destination. Speed is

also of importance inside the operation, as speedy movement of materials or information can save time and reduce costs. Additionally, speed reduces risk by making it possible to make forecasts at a later stage in the process (Slack et al., 2010).

4.7.3 Dependability

Dependability involves doing things on time, ensuring that customers receive their goods or services when promised. Over time, dependability has the potential to override all other criteria in the airline industry, as the price of a fare usually cannot compensate for consistently delayed flights or baggage. Furthermore, dependability is also important inside an organization. Reliable operations saves time, as they have less disruptions, and saves money, as inefficient use of time also comes at a cost. Additionally, dependability will enhance the predictability within the operations, making it easier to coordinate activities (Slack et al., 2010).

4.7.4 Flexibility

Flexibility refers to the ability to adapt and change the operation, and can be split into four sub-categories. *Product / service flexibility* involves introducing new or modified products or services, while *mix flexibility* refers to whether the company currently offers a broad variety of products and services. Furthermore, *volume flexibility* involves the ability to change the level of output or activity, while *delivery flexibility* refers to the ability to change the timing of the delivery of the product or service. One of the major external benefits of flexibility is the ability to do different things for different customers, making it possible to produce a high variety of products or services. Internally, flexibility saves time and speeds up response by providing the ability to adapt and transfer extra resources when needed, while simultaneously maintaining dependability by providing the ability to deal with unexpected disruptions (Slack et al., 2010).

4.7.5 Cost

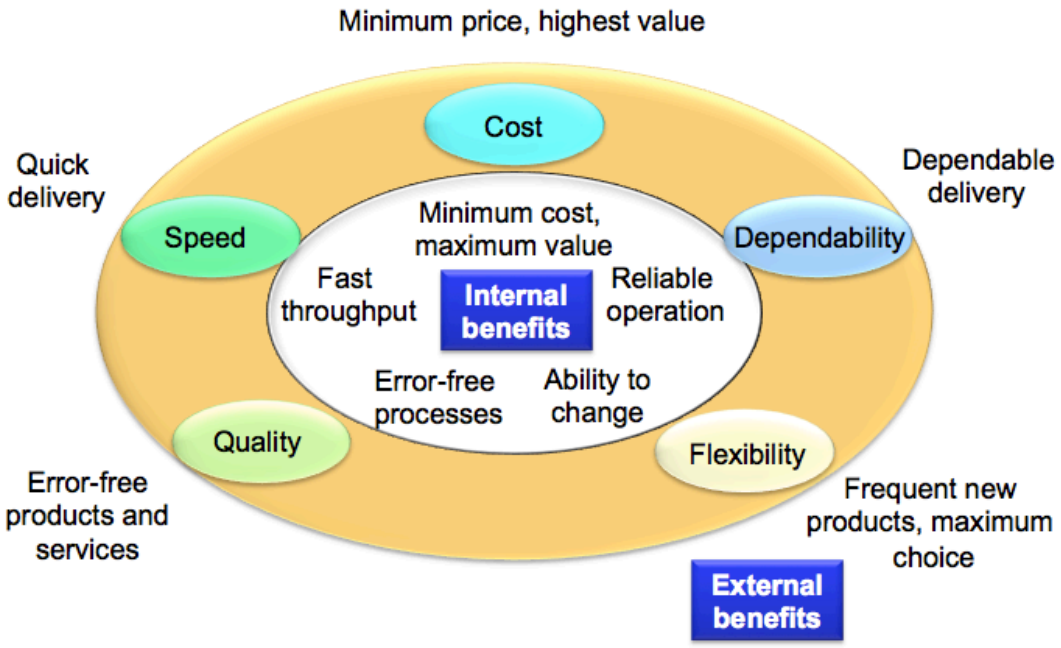
This objective refers to the cost efficiency of operations. For companies competing directly on price, this will naturally be the major operations objective but it will also be important for other companies, as low costs contributes to profit. Cost has to be kept at a minimum level, while still being compatible to the level of the other performance objectives, as it naturally will have repercussions on other objectives. Cost efficiency is usually measured in terms of productivity.

Overall productivity refers to the ratio between total output from the operation and the total input to the operation, while single-factor productivity refers to the ratio between total output and one input to the operation (Slack et al., 2010).

4.8 Internal and External Effects of the Five Performance Objectives

A focus on operations involves being concerned with the internal conduct of a company. However, internal operations also have external effects, which typically are the ones that the customers experience. The different performance objectives can therefore be measured both in terms of internal and external effects, as demonstrated in Figure 4 below (Slack et al., 2010).

Figure 4 – Internal and External Effects of Performance Objectives



Source: Figure 2.10 in Slack et al. (2010)

4.9 Polar Representation of Performance Objectives

These five performance objectives provide a generic framework for assessing the operations of an organization, and it is the role of the operations function to find the right balance between them. A useful way of visualizing the required performance and the actual performance of each performance objective is through the use of a polar representation, where the required performance of the different objectives is represented by one line, and a second line represents the actual performance (Slack et al., 2010). An example of this is shown in Figure 5.

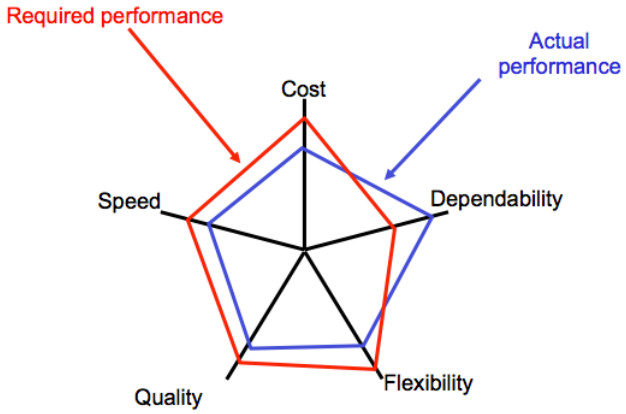


Figure 5 - Polar Representation of Required and Actual Performance
Source: Slack et al. (2010).

5 Thesis Focus

5.1 Theoretical Framework

Considering that this thesis sets out to analyze the two different business models in the airline industry, the dimensions analyzed must consequently capture the relevant features within both models. Accordingly, the performance objectives presented by Slack et al. (2010), coupled with the different outlined perspectives on competitiveness, will serve as this thesis' theoretical framework. The performance objectives, from now on referred to as dimensions, will be used to assess the different airlines operational performance. A minor adjustment to one of the dimensions, namely cost, will be made, denoting it cost efficiency, as it better encapsulates the content of the dimension for this particular industry. The different perspectives on competitiveness will be used as a basis for which measures to include within each dimension. Furthermore, keeping in mind the distinction between the internal and the external effects of a company's operations, the assessment in this thesis will mainly based on external effects, as these are in fact experienced by customers and thus critical for long-term competitiveness.

5.2 Problem Definition

With the theoretical framework presented above as a point of departure, and based on the previously outlined problem discussion, the aim of this thesis is to analyze different airlines' diverging operational focus. By linking the varying operational emphasis to financial and market share performance, we thereafter strive to obtain an understanding of how the chosen emphasis can be related to the competitiveness of the different FSNC and LCC variations. Finally, implications with regards to potential future operational emphasis will be discussed. Accordingly, this thesis sets out to answer the following research question:

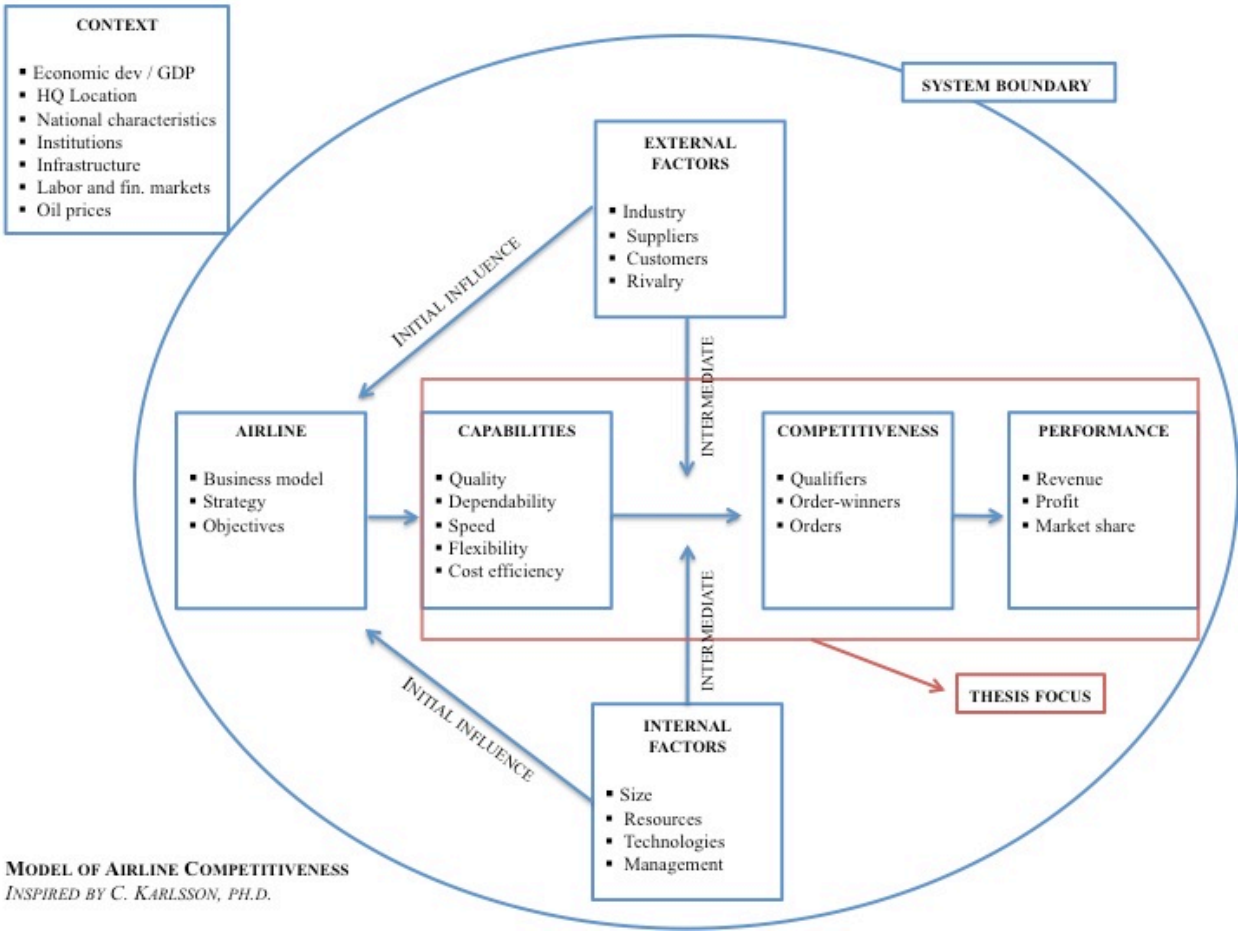
How can European airlines emphasize different aspects of airline operations to enhance their competitiveness?

In order to answer this research question, two sub questions have been outlined:

1. *How can the different carriers' operational performance be characterized?*
2. *How does this emphasis relate to financial and market share performance?*

5.3 Conceptual Model

Figure 6 – Model of Airline Competitiveness



6 Methodology

The following section will deal with the methodological considerations of this thesis. First, the different research philosophies will be outlined, accompanied by an account of the position adopted in this thesis. Secondly, the demarcation between quantitative and the qualitative approaches will be introduced. The different possible approaches will be outlined, before the selected approach in this thesis will be presented. Third, an outline will be given of how the case population is identified, and how the subsequent case sampling is conducted. Finally, the rationale for data collection will be presented, before a brief introduction of how the analysis will be conducted is made.

6.1 Philosophy of Science

Research philosophy is related to the development and the nature of knowledge. The specific research philosophy adopted contains vital assumptions about the way a researcher views the world, which in turn forms the basis for the research strategy and the choice of methods related to that specific strategy. Accordingly, it is important to be aware of the philosophical foundation of one's research (Saunders, Lewis, & Thornhill, 2009). The following section will thus deal with the research philosophy adopted in this thesis.

Two concepts are essential with regards to research philosophy, respectively *ontology* and *epistemology*. Ontology can be termed as the nature of reality, and refers to which entities that can be said to exist. Epistemology involves what knowledge is, and how it can be acquired. Some authors, such as Guba and Lincoln (1994) argue that questions of research methods can be seen as of secondary importance to questions about research philosophy (Saunders et al., 2009). Thus, before choosing a research method, it is important to reflect upon epistemological considerations and the related ontological underpinnings.

The choice of research philosophy is often framed as a choice between the positivist or the interpretivist point of view. With regards to ontology within the positivist tradition, social entities are seen as existing independent of social actors' perceptions. On the contrary, the interpretivist philosophy argues that social phenomena are created through the perception and consequent actions of social actors. This is often related to social constructionism, which follows the interpretivist tradition, claiming that reality is socially constructed and does not exist independent of social actors. With regards to epistemology, the philosophy of positivism is concerned with the observable social

reality, reflecting a similar approach to that of the natural scientist. Thus, the researcher must, to the extent it is possible, act in a value-free manner when conducting his or her research. The interpretivist philosophy, however, is concerned with humans as social actors who enact themselves and their roles based on the meaning they instill in them. Accordingly, the researcher must try to understand the social world of his research subjects by entering it (Saunders et al., 2009).

Due to these ontological and epistemological differences, the positivist and the interpretivist tradition is often treated as two clearly demarcated opposites. Nevertheless, according to Saunders et al. (2009), research philosophies cannot be characterized in terms of which one is better than the other. Rather, they can be seen as serving different purposes; some research philosophies are better to answer some questions than others. Thus, it can be argued that it might be more appropriate to view the two philosophies as different ends of a continuum (Saunders et al., 2009). This can be related to the philosophy of pragmatism, which argues that the most important consideration you have to make when designing your research method concerns your research question. Considering that we see the world as existing independent of social actors' perception of it, and since we analyze an observable social reality from which we strive to acquire a broader understanding, the research philosophy adopted in this thesis can be placed on the positivist side of such a research philosophy continuum.

6.2 Choice of Method: Quantitative and Qualitative Approaches

In the methodology literature, a distinction is usually made between quantitative and qualitative research approaches. This is often done by referring to the quantitative as research with numbers, and the qualitative as research without numbers. According to Creswell (2009), a better way to make the distinction may be to highlight the differences with regards to the basic philosophical assumptions a researcher brings into the study, the types of overall research strategies, and the specific techniques employed when conducting these strategies. Keeping in mind the brief philosophy of science outlined earlier, the research philosophy in this thesis placed itself on the positivistic side of what Saunders et al. (2009) refer to as a philosophy continuum. Such a stance has clear repercussions with regards to research design. Pure positivists traditionally emphasize the importance of data that is suitable for statistical analysis, and as a result predominantly prefer the use of quantitative data, while interpretivists on the other hand, usually relate to qualitative data (Saunders et al., 2009).

Furthermore, Cassell and Symon (1994) highlight that the emphasis in quantitative research is on *quantification,* while the emphasis in qualitative research is on *interpretation*. The aim in quantitative research is to test objective theories through the examination of the relationships between variables, while the objective in qualitative research is to explore and describe an organizational phenomenon. Both the qualitative and the quantitative approach can be said to offer research designs and techniques that are valuable and useful with regards to understanding organizations better. A qualitative researcher should thus not refrain from the interpretation of quantitative data if it provides insight to an organizational phenomenon, and a qualitative approach can thus revolve around quantifiable measures if it serves the purpose of the study (Lee, 1999). Accordingly, a more accurate description of the relationship between the two approaches may once again be to view them as representing different ends of a continuum, where research tends to be more qualitative than quantitative or vice versa, and not necessarily either or. An incorporation of elements from both traditions can be termed as a mixed research method, and resides in the middle of the continuum between qualitative and quantitative research (Creswell, 2009).

There have been conducted several attempts to describe the subcategories of both quantitative and qualitative research. Although some variations exist, there seems to be a modest agreement with regards to the major domains qualitative and quantitative research comprises (Lee, 1999). According to Creswell (2009) a distinction between the following different categories is usually made:

6.2.1 Quantitative Approaches

Survey research involves a quantitative description of trends, attitudes, or opinions. The intent is to create generalizations about the specific population based on the sample (Creswell, 2009). Capturing trends, attitudes or opinions seem to be suitable for elements that can be related to the quality dimension of an airline's operations, and will consequently be applied to this part of the thesis.

Experimental research refers to whether or not a specific treatment causes a specific outcome. This is assessed by giving a specific treatment to one group, while at the same time withholding it from a control group, allowing for the evaluation of the treatment's effect. Due to the need to control as much of the research process as possible, this type of research is often conducted in laboratories

(Creswell, 2009). Considering that we want to examine European airlines' emphasis on different parts of airline operations in their real-life context, this approach does not seem to fit our purpose.

6.2.2 Qualitative Approaches

Ethnography involves studying cultural groups within their natural setting for a significant amount of time. The data used in this approach is usually based on observations that are subjectively interpreted and context specific (Creswell, 2009). This type of research is most appropriate for exploring the life of different cultural groups, and does accordingly not seem to be the best choice of method for our purpose.

Grounded theory refers to the deduction of theory from data through the use of a multistep process. This process involves the inference of categories that are tested against subsequent data, revised, and tested again, in order to conceive theory that is grounded in data (Creswell, 2009). The use of grounded theory is usually related to the generation of theory, where researchers operate without a predefined theoretical framework. Considering that we use a clearly defined theoretical framework as a basis for our thesis, this method does not seem to fit our inquiry.

Phenomenological studies focus on the experiences of people, and attempts to understand the patterns, relationships, interpretations and behaviors of their research subjects (Creswell, 2009). As our study is concerned with various airlines' use of operations rather than personal experiences, this approach does not seem to be suitable for our purpose.

Narrative research is an attempt to understand how people create and transfer meaning through the use of narratives (Creswell, 2009). This approach is mainly suitable for the investigation of organizational change, and does accordingly not fit out purpose.

Case studies involve a profound examination of one or a few entities. The focus in this type of research is on particular cases' main events, processes and outcomes, which take place within certain contextual boundaries (Creswell, 2009). One of the most prominent advocates for the case study approach is Yin (2009), proclaiming that it is the preferred method when *how* and *why* questions are being posed, when the investigator has little control over events, and when the focus is on contemporary phenomenon within a real-life context. Considering the formulation of our

research question, and that we do not have any control over the development of events in the attempt to understand such a complex real-life issue, the case study seems to be appropriate for our purpose. Furthermore, the broad and intricate nature of the topic requires a fundamental understanding of contemporary phenomena to comprehend the aspects of how different emphasis on airline operations transfer into competitiveness. This further substantiates that there seems to be a good fit between the case study approach and our requirements with regards to the chosen field of study and the related aim.

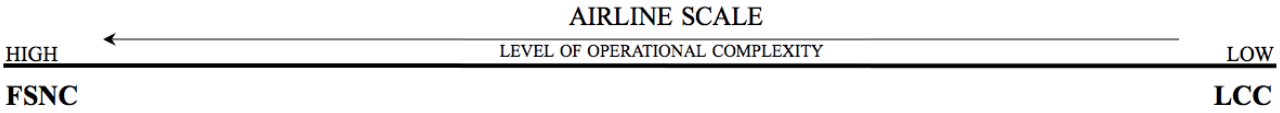
One might argue against Creswell's (2009) clear demarcation between quantitative and qualitative approaches, claiming that it might be more accurate to label the collected data as qualitative or quantitative, not the methods themselves. A case study, although labeled as qualitative, might also be of a quantitative nature, depending on the data utilized in the study. As our aim is to analyze how European airlines emphasize different aspects of airline operations in order to enhance their competitiveness, a case study based on a quantitative framework will be the used in this thesis. This will allow us to answer our research question and the associated sub research questions, as it enables an analysis both within and across different airlines. Considering that the case study and the survey approach represent different research traditions, we consider it appropriate to elaborate on the possible conclusions drawn from the different studies. Conclusions based on surveys are often referred to as *statistical generalization*, which signify conclusions based on empirical data collected from a sample from that population. In a case study, however, one can only make analytical generalizations, using previously developed theory as a framework and analyze the empirical results from the case study in light of this theory (Yin, 2009). Since the case study serves as the main approach in this thesis, only analytical generalizations will be made. The survey will accordingly only function as a source of these analytical generalizations, and it consequently does not need to be of a statistical generalizable nature.

6.3 Case Selection

Earlier we described and discussed main differences between the LCC and the FSNC business model. Furthermore, we showed how the lines between the two models have become increasingly blurred in recent years. Consequently, we increasingly see the relevance of assessing and analyzing the airline industry as a series of airlines on a scale with the classic full service network carrier on

one side, the absolute low-cost no-frills carrier on the other, and a broad variety of different airlines in between. An example of such a scale is displayed in Figure 7 below.

Figure 7 – Scale of Differences Within the Airline Industry



Source: Own creation

On the background of the latter factors, we recognize a need for different types of cases in order to be able to analyze and assess how different operational emphasis affects the competitiveness of an airline. According to Voss, Tsikriktsis and Frohlich (2002) multiple cases may reduce the depth of the study, but can augment external validity and help guard against observer bias. Consequently, a multiple case study approach seems to be most suitable for conducting this research due to the broad variety of airlines and since it is usually considered to be more robust than single case studies.

6.3.1 Literal and Theoretical Replication

Yin (2009) describes how each case must be selected so that it either predicts similar results, known as literal replication, or predict contrasting results for anticipatable reasons, denoted as theoretical replication. As the European airline industry consists of a broad variety of airlines, we perceive it to be unlikely that the cases will predict similar results, referred to as literal replication. For obvious reasons, some fundamental similarities will exist since the case companies operate within the same industry. However, when analyzing the different emphasis on airline operations, we believe the significant differences between the airlines will lead to somewhat contrasting results but for anticipatable reasons, in line with Yin's (2009) notion of theoretical replication.

6.3.2 Case Sampling Guideline

With regards to case selection, three different processes have been progressively considered, namely the number of cases to be used, how to select the cases, and the case sampling itself. First of all, the number of cases chosen for analysis depend on several factors, such as the number needed to successfully address and answer our stated research question, how many that are feasible to work with in a thesis, and to what depth we want to analyze them. Clearly, the possible analytical depth

will decrease as the number of cases increase. On the other hand, the robustness of the study usually increases as the number of cases increase.

In the process of selecting the cases, there have been two theoretical concepts we have kept in mind during the process. Firstly, according to Voss et al. (2002), it is of utmost importance to consider which parameters that define the population one is to sample from, and thus are to be held constant during the case selection process. We proclaim that in our case these features are believed to be that the carriers predominantly operate flights from European airports and will as a result be considered as European carriers. Moreover, the carriers have to be well established within the industry, having endured the challenging start-up phase historically characterizing the industry. As a last remark, it will solely be the passenger transportation part that will be taken into consideration, excluding freight transportation. With these commonalities in mind, we can direct the attention towards the second important theoretical concept in the case selection process.

Miles and Huberman (1994) describe three different kinds of case instances having the potential to yield high pay-offs. The first instance concerns once you find a typical or representative case of a theoretical proposition you want to generalize, and questions whether you are able to find another one providing similar results. The second instance involves a negative or disconfirming instance leading to a discrepancy between the cases. The third and final instance is to *"(...) identify polar types, cases with sharply contrasting characteristics that will highlight the differences being studied"* (Voss et al., 2002, p. 203). In this example, a sample can be created such as to include cases with deviating performance on a given set of dimensions, allowing for both analyses within each category, as well as critical comparison between the categories. This is certainly in line with our described aim of research. As a result, Voss et al.'s (2002) notion of defined constant parameters of the population, combined with Miles and Huberman's (1994) notion of polar types will function as the guideline with regards to the subsequent case population.

6.3.4 Identification of Case Population

In the aftermath of our industry overview, we identified six different types of carriers with several contrasting characteristics that captivated our attention due to differences in their business model and strategic objectives. As a result, we believe these six categories are characteristic for the European market, and will therefore be applied as the criteria with regards to the subsequent case

sampling. Keeping the earlier discussion about FSNC and LCC distinctions becoming increasingly blurry in mind, these categories are defined as follows:

The first category represents the polar point on the FSNC side of the business model scale. This is a large, multinational, complex airline group with an exceedingly broad network, carrying a high amount of passengers, and consisting of several different carriers with diverse profiles and a broad variety of offerings.

The second category is the archetypical international flag carrier, operating with the traditional hub-and-spoke network from a main hub to a wide range of both short- and long-haul destinations. It typically offers a high frequency of flights to popular destinations, various types of tickets, as well as a multitude of extra services such as enhanced baggage regulations, in-flight catering, and different types of airport lounges.

The third category represents a smaller, regional airline with a focused network of destinations. This carrier is not to be mistaken for a low-cost carrier, as it still operates with main hubs and possess several of the traditional FSNC characteristics such as a high service level, flexible tickets and continual flight departures. However, they target a niche market with fewer carriers and less intense competitive rivalry.

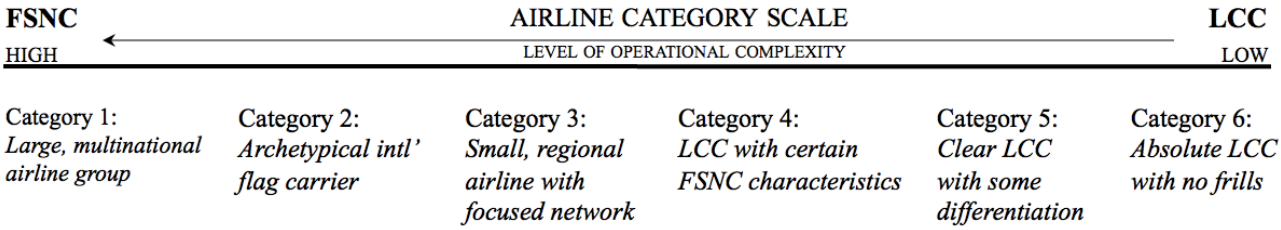
The fourth category is a hybrid carrier with predominant characteristics from the LCC model. However, it has gradually encapsulated a few FSNC characteristics, shifting more towards a hybrid carrier. A typical example of this is expanding from short-haul point-to-point flights, to also include long-haul flights. Other features might be increased focus on different ticket types and extra services.

The fifth category is a clear low-cost carrier, but has typically adapted one or two FSNC characteristics in an attempt to slightly differentiate themselves from the absolute no-frills low-cost carriers. One example is operating flights from primary airports close to city-centers, in contrast to the typical secondary airport locations that LCCs have become known for. However, its sole concentration on short-haul point-to-point flights combined with a focus on cutting costs in a multitude of areas clearly classifies them as a low-cost carrier.

The sixth and final category is the archetypical no-frills low-cost carrier. This type strives to offer the absolute lowest prices on the market, and as a result operates with a sole focus of reducing costs in every possible area. This involves operating flights from secondary airports located significantly outside the city center, and a no-frills in-flight experience with rigid regulations with regards to tickets, check-in and allowed baggage. Furthermore, if passengers yearn for enhanced flexibility with regards to the latter factors, they discover an excessive fee system.

The earlier presented scale of different carrier types within the industry is now modified according to the outlined categories above, and is presented in Figure 8 below.

Figure 8 – Scale of Different Types of Carriers within the Industry



Source: Own creation

6.3.5 Case Sampling

During the actual case selection process, potential case companies have been thoroughly analyzed with the goal of finding as clear fits as possible. Voss et al. (2002) emphasize the importance of applying tests to ensure that each case meets the sample criteria, and that researchers should have the courage to abandon cases that do not provide a clear fit with the research design and sample structure. At an early stage in the case selection process, SAS was considered as a potential case airline, but due to the carrier's lack of clear fit with the category descriptions, in addition to their close cooperation with one of the chosen case airlines, SAS was excluded from the case sample. Aside from this exception, the selection of the different cases proved to be a fairly rigid procedure.

6.4 Data collection: Primary and Secondary Data Sources

When considering what kind of data to collect in order to answer your research question, it is useful to first make a distinction between primary and secondary data. Primary data refers to data you have collected yourself, whereas secondary data refers to data that originate from elsewhere, and accordingly has been collected for another purpose than you intend to use it. Secondary data can either be used as a research basis by itself, or as a supplement to primary data sources (Saunders et al., 2009). The data used in this thesis will solely be of a secondary nature and stem from 2012. The following section will accordingly present the rationale for such a choice, an account of the advantages and disadvantages associated with the use of secondary sources, as well as an outline of how a researcher can make use of data of this nature in the best possible way.

6.4.1 Advantages and Disadvantages Associated with the Use of Secondary Data

There are a number of advantages related to the use of secondary data. One of the main benefits is that it facilitates the possibility to analyze a more extensive amount of data. Another major advantage is the possibility to evaluate the data prior to use, at least to some extent. Furthermore, for some research projects, especially the ones concerning national or international comparison, secondary data may be the only viable source of information (Saunders et al., 2009).

A significant disadvantage with regards to secondary data is the fact that you do not have any real control over the data quality. Moreover, the data has been collected for another purpose, which might make it difficult to fully answer your research question. Additionally, the aggregations and definitions in the data may be unsuitable for your purpose (Saunders et al., 2009).

The comparative focus on operations within a global industry, combined with the use of a multiple case study approach, makes the possibility to collect primary data of sufficient and relevant nature rather minimal. Considering that the information we need is available through the use of secondary sources, we believe that this form for data will best serve the purpose of this thesis. Furthermore, the use of secondary sources will provide us with the opportunity to analyze a more extensive amount of data, and allow us to answer our research question in a comprehensive manner. The main basis of our data has been collected from the case airlines' annual reports and websites. Additionally, other sources have been used as a supplement when needed. We do acknowledge the

disadvantages associated with the use of secondary data sources, and the specific measures we have taken in order to reduce them will therefore be outlined in the next section.

6.5 Evaluating Secondary Data Sources

In order to circumvent some of the disadvantages related to the use of secondary data, Saunders et al. (2009) outline a three-step strategy to evaluate secondary data sources. Both the process and how we have incorporated it in our research will be presented in the following paragraphs.

6.5.1 Overall Suitability

The first step is to assess the overall suitability of the data sources, ensuring that it provides the information needed to answer the research question. When examining the case airlines' annual reports and websites, we discovered that not all the information we needed was available through these sources. Therefore, we saw the need to include other sources in order to be fully able to answer our research question. This includes passenger reviews administered by the aviation research organization Skytrax, on-time performance ratings from FlightStats, as well as the analytical database Airline Profiler.

6.5.2 Precise Suitability

The second step is to assess the precise suitability of the data, focusing both on reliability and validity. The reliability can be assessed by evaluating the authority or reputation of the source, while the validity of the data must be related to the methods the source has used to collect the data, and how the different concepts and definitions are operationalized. Using multiple sources, referred to as data triangulation, will further enhance the validity of the research (Saunders et al., 2009). An account of the reliability and validity of the different sources we have used will accordingly be outlined below.

Company Websites and Annual Reports

Company websites and annual reports will serve as the main basis for our collection of data. When utilizing such data, it is of utmost importance to keep the concept of measurement bias in mind. According to Saunders et al. (2009), this can occur in two different forms, namely deliberate distortions and changes in the way the data is collected. The former refers to instances where data is

intentionally recorded inaccurately, and can be a result of the desire to portray the company in a more favorable light to the target audience. This form of measurement bias is extremely difficult to detect. We can accordingly not guarantee its absence in the data, but we believe the official nature of these data sources decreases the possibility of deliberate distortions. In terms of changes in the way the secondary data is collected, our use of annual reports from different airlines with potentially diverging accounting practices and cycles may cause some difficulties with regards to the comparison of the airlines. However, as the process of preparing an annual report is conducted in accordance with guidelines from independent auditors, we believe that the annual reports serve as credible data sources.

Skytrax

The data used in our assessment of airline quality stems from an extensive number of Skytrax online customer reviews from 2012. Skytrax is a highly recognized privately owned aviation research organization, providing both independent and highly detailed research, as well as administrating the worlds leading airline review site (Skytrax Website, 2013). The reviews are conducted by a broad variety of passengers for selected carriers on a range of different predetermined variables. As a result, there might be variations in quality, thoroughness and number of available reviews. Additionally, one could certainly question the type and differences between customers who submit reviews. However, as we through our case study approach are concerned with analytical rather than statistical generalization, we believe that these uncertainties related to the reviews do not limit us, and accordingly serve our purpose. Moreover, we argue that Skytrax' high recognition and reputation within the airline industry ensures an adequate level of reliability of the data, while the review variables' close interrelation with our theoretical definition of quality ensures that the validity of the data is satisfactory.

FlightStats

One of the measures used in our evaluation of dependability stems from FlightStats. FlightStats is a leading publisher of real-time global flight information, utilizing flight information from various global sources, and tracking a selection of flights (FlightStats Website, 2013). Based on this data, an airline's on-time performance is assessed. Both airline and airports commonly refer to FlightStats, and we argue that this recognition within the airline industry provides the data with sufficient reliability. However, FlightStats' rating is not without weaknesses. When calculating each airline's

performance, an unequal, and sometimes minimal, share of each carrier's flights is tracked. As a result, FlightStats' measure may reflect a higher on-time performance score than reported by the airline itself. Accordingly, we intend to use a third source to collect data on dependability in order to ensure the quality of our data.

Airline Profiler

The third source we use with regards to dependability is Airline Profiler. Airline Profiler is an analytical database for the airline industry, which collects data from multiple sources on various airline related performance indicators, including departure and arrival punctuality. Airline Profiler assesses their own data, and provides them with a reliability rating. The data for one of our chosen case airlines only achieves the second highest possible rating with regards to reliability. However, considering that the rest of the data obtains the highest possible reliability score, and the fact that each airline's on-time performance is based on a vast amount of flights, we argue that the measurements produced by this database are reliable. Furthermore, we argue that since Airline Profiler's on-time performance measures are based on a greater selection of tracked flights compared to FlightStats, and the fact that they are more in accordance with the measures presented by each airline, we assess these measures to be more reliable than those presented by FlightStats.

6.5.3 Cost and Benefits

The third and final step involves comparing the costs and benefits associated with the secondary data. The benefits involve the extent to which the data allows you to answer your research question, while the costs entails the possible lack of reliability and potential biases inherent in the data (Saunders et al., 2009). We firmly believe that the extensive measures we have taken in order to circumvent the disadvantages related to the secondary data ensures that the associated benefits outweigh the potential costs outlined above.

6.6 How the Analysis Will Be Conducted

Eisenhardt (1989) suggests using a two-step approach when conducting an analysis. The first step is to analyze the pattern within each case, providing the opportunity to get to know each case as an individual entity. This first step provides the researcher with comprehensive in-depth knowledge, which forms the basis of the second step. This involves searching for patterns across the different

cases, and is an essential feature in order to increase the generalizability of the findings and conclusions drawn from the different cases. A simple but effective means to facilitate this cross-case analysis is to look for similarities and differences within or across groups of cases (Voss et al., 2002). As a result, this two-step approach will be the utilized in the analysis.

7 Case presentations

In the following section, the different case airlines will be presented, providing a brief overview of the different carriers' history and characteristics.

7.1 Lufthansa Group

The formation of Lufthansa can be traced back to 1926, when Deutscher Aero Lloyd and Junkers Luftverkehr joined forces to found Deutsche Luft Hansa AG. Today, Lufthansa is both one of the world's largest airlines as well as an aviation group with a network comprising more than 400 subsidiaries throughout the world. The Lufthansa Group (LHG) has its headquarter in Cologne, Germany, and operates within five business segments; Passenger Airline Group, Logistics, MRO, Catering and IT services. The core business of the group is passenger transportation. The Passenger Airline Group comprises Lufthansa Passenger Airlines, SWISS, Austrian Airlines and Germanwings, in addition to equity investments in Brussels Airlines, JetBlue and SunExpress. The former four carriers will be analyzed in this thesis, excluding the latter three, as well as the group's charter operations. Lufthansa Passenger Airlines is the group's flagship, aiming to build on its position as Europe's premium-quality carrier. SWISS also focuses on providing premium quality, especially within the business segment, while Austrian Airlines is currently being restructured in order to retain profitability. Germanwings focuses on providing quality within the low-cost sector, equipping the group with a broad reach within different segments. LHG applies a multi-hub strategy with the aim to provide passengers with a vast amount of options for convenient travel on short-, medium and long-haul flights. This is predominantly achieved by travelling through its main airports in Frankfurt and Munich, in addition to airports in Zurich, Vienna and Brussels. As a group, LHG provides passengers with access to approximately 250 destinations in more than 100 countries worldwide. Additionally, as a founding member of STAR Alliance, Lufthansa provides their passengers with an even more extensive number of connecting flights (LHG Annual Report, 2012). On the background

of these factors, the Lufthansa Group appears to be a clear fit with the previously outlined first category.

7.2 British Airways

The origin of British Airways (BA) can be traced back to 1919, when Aircraft Transport and Travel Limited (AT&T) as the first airline in the world launched a daily international scheduled air service between London and Paris. BA was formed as a state company through the merger of four national carriers in 1974, and 13 years later is was partly privatized by the conservative government. Today, BA is owned by the multinational airline holding company International Airlines Group (IAG), which was formed in 2011 as a result of BA's merger with Spanish national airline Iberia (BA Website, 2013b). BA is considered to be one of the world's leading premium carriers, operating a large hub-and-spoke network out of their main hub at London Heathrow Airport. It is the largest UK carrier in terms of fleet size, international flights and number of destinations, and the second largest carrier in terms of passengers. BA operates an extensive global route network, offering a broad variety of both short- and long-haul flights, and is one of the few airlines conducting flights to all six continents. Today, BA operates flights to approximately 170 destinations. Membership in the Oneworld alliance provides them with access to an even more extensive route network (BA Website, 2013a). As a result, BA seems to match the criteria in the second category.

7.3 Aegean Airlines

Aegean Airlines was established in 1999, offering regional flights within Greece. Operating from its main hub in Athens, the company aims to provide full service and premium quality on short- and medium-haul flights (Aegean Website, 2013). Although Aegean operates a number of international routes, it can be characterized as a regional airline due to its strong focus on the Greek market. Operating flights to 59 destinations and carrying more than 6 million passengers in 2012, the company manifested its position as Greece's biggest airline (Aegean Financial Report, 2012). Through its membership in Star Alliance, Aegean is able to offer its passengers with an end-to-end service, ensuring a convenient travel experience across different airlines. Due to the characteristics above, Aegean seems to fit well with the regional carrier outlined in category 3.

7.4 Norwegian

Norwegian Air Shuttle ASA, commercially branded as "Norwegian", was established in 1993. After operating as a regional airline on the west coast of Norway for nine years, the company launched low-cost domestic flights in 2002, and a year later the company was listed on the Oslo Stock Exchange. The company has experienced significant growth in recent years, and by adhering to the vision "Everyone should afford to fly", Norwegian has established itself as the third largest low-cost carrier in Europe in terms of passenger, carrying nearly 18 million passengers in 2012. Norwegian operates 331 routes to more than 120 destinations in Europe, North Africa and the Middle East. In the beginning of 2012, Norwegian signed the largest aircraft acquisition order ever made in European aviation history, comprising 222 aircrafts in total from Boeing and Airbus. This was a part of their scheduled long-haul operations, which Norwegian intend to launch in May 2013, offering flights to New York and Bangkok from both Oslo and Stockholm (Norwegian Website, 2013). Accordingly, Norwegian appears to be a clear fit with the hybrid carrier outlined in the fourth category.

7.5 easyJet

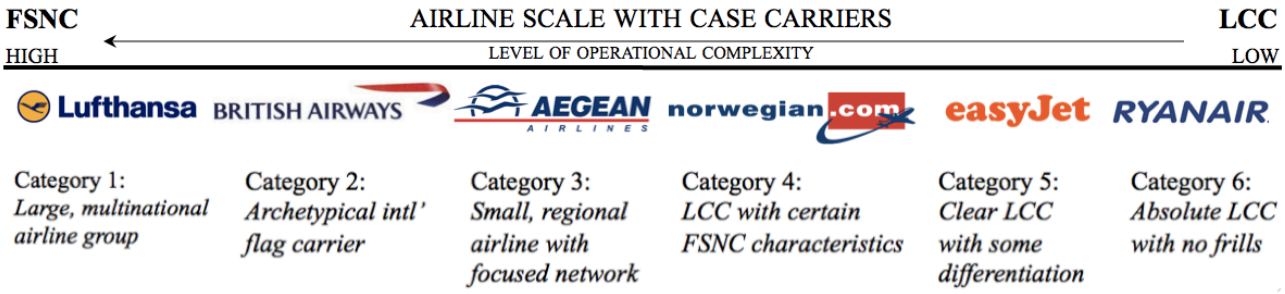
easyJet was founded in 1995 with the intention of offering low-fare flights within Europe. Headquartered in London, they initially conducted flights from Luton to Edinburgh and Glasgow. A year later, easyJet expanded their operations by launching flights to Nice, Amsterdam and Barcelona. Today, their business model is based around the operation of short-haul, point-to-point flights mainly to and from primary airports across Europe. easyJet aims at serving the highest number of Europe's top 100 market pairs, focusing on strong market shares in valuable markets such as London, Paris, Milano, Amsterdam and Geneva. By emphasizing efficiency and low costs, the company strives to make travel easy and affordable for its customers. easyJet currently operates more than 600 routes across 30 countries, carrying more than 58 million passengers in 2012, making it the second largest European low-cost carrier in terms of passengers (easyJet Website, 2013). Accordingly, easyJet seems to correspond well to the criteria outlined in the fifth category.

7.6 Ryanair

Ryanair was founded in 1985, initially operating daily flights from Ireland to London Gatwick. After major losses in 1990, the company went through a substantial restructuring process. Inspired by the US low-cost carrier Southwest, Ryanair have become known for their notorious focus on cutting costs at all means (Ryanair Website, 2013). Today, Ryanair provides frequent point-to-point operations on short-haul routes within Europe, concentrating on the use of secondary and regional airports in and around major populated destinations. By focusing on cost efficiency, and offering low fares in order to generate increased passenger traffic, the company aims to strengthen itself as Europe's largest airline. Ryanair provide flights to more than 1500 routes spread across 28 different countries, and carried more than 76 million passengers in 2012 (Ryanair Annual Report, 2012). On the background of these factors, Ryanair appears to be a clear fit with the low-cost no-frills carrier outlined in the sixth category.

On the background of the case presentations, the final scale is presented in Figure 9 below.

Figure 9 - Airline Scale with Case Carriers



8 Analytical Framework

In the following section the analytical framework is outlined. The different operational dimensions, their corresponding performance indicators, and how they will be measured will be presented and accounted for. Finally, the entire analytical framework will be presented in a summarizing table.

8.1 Quality: An Account of the Indicators

The quality dimension seeks to capture factors that account for passengers' perception of the quality of a given air travel experience. Generally, when price competition is fierce as is the case in the airline industry, quality often emerges as one possible competitive variable. Furthermore, as

described in the theoretical section, it is important to be aware that quality is a multifaceted concept comprising all characteristics that make up passengers' perception of their travel experience. Having this in mind, it is fair to assume that passengers' perception of quality is often influenced by the underlying expectations to the flight, which stems from factors such as the price paid for the fare and the airlines' reputation. As a result, several variables have to be taken into consideration when evaluating the overall quality of an airline.

The data used in our assessment of airline quality stems as mentioned from an extensive number of Skytrax online customer reviews from 2012. These reviews consist of evaluations on a scale from 0 to 5, where 0 is equivalent to no opinion, on the following five variables: Value for money, seat comfort, staff service, catering, and entertainment. Furthermore, an assessment of whether or not the reviewer would recommend the airline, an overall rating out of ten, and a brief text summarizing the experience is given. In order to ensure sufficient data quality, some of the variables have been excluded. The following section will present our rationale for data selection.

Value for money (Q1): Value for money compares the customer satisfaction up against the fare level. For more expensive flights, the value derived from the flight has to be significantly higher than for low-price flights in order to obtain a similar score. Considering that our case airlines operate with considerably different business models, this variable encapsulates both carrier differences, as well as customer segments' diverging willingness to pay. Accordingly, this is a suitable indicator for measuring conformance to expectations.

The remaining indicators *seat comfort (Q2), staff service (Q3), catering (Q4), and entertainment (Q5*) will all be included. Entertainment reviews were not available for all carriers, but have been assessed for those carriers were they were available. All four indicators provide an absolute measurement of various quality facets of air travel without comparing it to fare price. Moreover, we believe that the category *recommended (Q6)* will be a valuable measure, as it sums up and compares passengers' expectations with carriers' actual performance, all in relation with the fare price and purpose.

When entering a review, respondents have to submit a brief text summarizing the flight experience. This, in addition to respondents overall rating of the airline, have both been excluded. The

summarizing text might contain too many highly specific comments based on individual experiences with low possibility of drawing general inferences. Moreover, the overall rating will be excluded, as we fear it could end up as a residual category not providing any concrete information to use in the analysis.

With regards to the actual data processing, all data from customer reviews stemming from 2012, a total of 777 respondents, have been entered and registered in Microsoft Excel. Overall average scores on the five indicators are calculated and compared between all classes and carriers. Responses that are registered as "no opinion", corresponding to the value of 0, are excluded in the calculation of average scores. With regards to the recommended category, customer reviews are noted with a zero for not recommended, and one for passengers recommending the carrier. This will enable us to find an overall average recommendation score for each class and carrier.

Generally we expect premium carriers and business / first class flights to achieve a higher score on most indicators within the quality dimension, as their business model is typically characterized with an increased emphasis on such aspects. However, this does not apply to the categories *value for money* and *recommended*, as these indicators relate quality to respectively fare price and overall experience. As a result, such a broad approach to measuring quality congruous well with the initial treatment of quality as a multifaceted concept. In summary, we believe these indicators will provide us with a comprehensive understanding of the quality performance of each carrier. Furthermore, being able to separate between scores on five different indicators, as well as a recommended-indicator, we hope to be able to draw inferences on how different carriers use their operations to enhance their competitiveness.

Table 1: Quality and Corresponding Performance Indicators

Dimension	**Performance Indicators**	**How to measure**
Quality	*Q1 Value for Money*	*Skytrax Survey*
	Q2 Seat Comfort	*Skytrax Survey*
	Q3 Staff Service	*Skytrax Survey*
	Q4 Catering	*Skytrax Survey*
	Q5 Entertainment	*Skytrax Survey*
	Q6 Recommended	*Skytrax Survey*

8.2 Speed: An Account of the Indicators

According to Slack et al. (2010), speed involves doing things fast. For most production companies, and for some services companies, this would generally refer to the time that elapses from the customer requests the product or service to the time it is received. In the airline industry, however, speed can more accurately be attributed to keeping the time between setting out on a journey and reaching the destination at a minimum. Thus, when considering total travel time, not only the actual flying time has to be taken into consideration, but all flight-related time consumption. This dimension will be measured by conducting a pair-wise comparison of selected carriers on a set of intra-European routes.

Flight time consumption (S1): A flight that involves an intermediate stop, change of aircraft or change of airline consists of different legs. Flight time consumption will be measured by assessing the actual time spent from the origin airport to the final airport on selected routes, and will accordingly involve both the time the aircraft spends in the air, as well as the possible waiting time between the different legs. Airtime will be measured as the average time spent in the air between the origin airport and the final airport, while waiting time will be measured as the average time between scheduled arrival of one leg and the departure of the next. The rationale for route selection will be outlined below.

Non-flight time consumption (S2): Non-flight time consumption comprises transport to and from airports, boarding and baggage pick-up. Average time spent between airport and city center with public transport will serve as an indicator for time consumption to and from primary and secondary airports. With regards to time consumption related to baggage pick-up there is considerable uncertainty connected to this indicator. First of all, external companies handle baggage at several major European airports, which makes a comparison untenable. Furthermore, there is a lack of reliable data depicting actual delivery times, and except for minor airport differences, we believe differences in time consumption waiting for baggage is minimal. As a result, we have left this indicator out of the speed dimension. This is also the case with regards to boarding time, as we were unable to locate any reliable sources providing this type of information. Accordingly, non-flight time consumption will only be measured in terms of average travel time to and from airport with public transport.

Both speed indicators will be measured by conducting a comparison with all six carriers on total travel time on intra-European flights. However, for natural reasons, no single route exists where all six carriers compete. Therefore, a pairwise comparison of contrasting carriers operating the same route will be conducted, investigating both flight and non-flight travel time differences. The selection process is twofold. Firstly, carriers are selected in pairs for route-comparison. The criteria have been that each pair consists of a FSNC and a LCC, and that they operate on the same route. Secondly, the routes and destinations themselves have to be carefully selected. To address what we believe to be significant differences, the routes have been chosen with the following rationale. Firstly, none of the chosen cities can provide a carrier with a sizeable unfair advantage over the other. Obviously, certain company-wise differences and advantages will exist. However, in order to circumvent possible problems related to this, main hubs and airports, as well as large cities in the airline's home region, are considered against each other.

The carriers have been paired in a way allowing us to analyze both the differences between the polar opposites on each side of the scale, as well as the differences between the carriers that are believed to be of a more similar nature. After research of comparable routes on the intra-European market, round-trip flights on the following routes have been identified and analyzed:

Lufthansa Group and Ryanair

1) Frankfurt – London
2) Bremen – Manchester
3) Berlin – Dublin

British Airways and easyJet

1) London – Rome
2) Manchester – Amsterdam
3) Edinburgh – Madrid

Aegean Airlines and Norwegian

1) Athens – Oslo
2) Larnaca - Stockholm
3) Heraklion – Copenhagen

The comparison has been carried out on the scheduled departures and arrivals for the different airlines in week 29 and 39. The rationale behind analyzing two different weeks is to assess whether or not the airlines make any adjustments of seasonal character. Considering the significant differences between the selected carriers, an analysis of time consumption will enhance our understanding of how airlines emphasize different aspects of speed to enhance their competitiveness. Furthermore, due to fundamentally different business models, FSNC-flights on short-haul flights will often be through a main hub, thus increasing overall travel time with two legs. On the other hand, even though LCCs mostly conduct direct flights, they often operate from secondary airports located far from city centers, and are thus likely to increase total travel time in this aspect.

Table 2: Speed and Corresponding Performance Indicators

Dimension	**Performance Indicators**	**How to measure**
Speed	*S1 Flight time consumption*	*Pair-wise comparison on selected routes*
	S2 Non-flight time consumption	*Pair-wise comparison on selected routes*

8.3 Dependability: An Account of the Indicators

Dependability involves doing things on time in order to ensure that customers receive their goods or services when promised. In the airline industry, dependability comprises various elements, with the most prominent one involving whether or not flights depart and arrive on time.

On-time performance (D1): On-time performance can be assessed both in terms of departures and arrivals. As minor delayed departures often tend to be corrected by increasing speed in the air, on-time arrivals can be seen as a better indicator of dependability as it also encapsulates more significant delays. However, as on-time arrivals may be manipulated by incorporating some slack between the scheduled flight time and the actual time needed to reach a destination, on-time departures also serve as a valuable indicator. Accordingly, the performance is measured as the percentage of both on-time departures and arrivals.

Many airlines operate with their own on-time performance measures, which are presented on the carriers' website or in their annual report. The problem with these measures, however, is that there

exist a number of differences in how they are conducted across airlines. Some measure only on-time performance in terms of departures, while others only measure it in terms of arrivals. Moreover, some distinguish minor delays from more extensive ones, while others do not. Additionally, some airlines do not present their on-time performance measures at all. Considering our earlier claim that dependability has the potential to override all other performance objectives over time, airlines clearly have incentives to measure, present or withhold on-time performance in a manner that is favorable to their own company. Accordingly, an analysis solely based on an airline's own on-time performance measures will be of little value.

One way to avoid the weaknesses inherent in these company-based measures is to use independent sources as a basis for evaluating on-time performance, and to triangulate the data based on these. As mentioned in the section regarding data collection, we therefore intend to use both the airlines' annual reports, FlightStats and Airline Profiler when evaluating on-time performance. Together, these three different sources will provide us with a balanced view of the airlines' on-time performance. In cases with significantly diverging ratings, the measures from Airline Profiler will be used, due to the fact that it is of independent nature as opposed to the annual reports, and as Airline Profiler's ratings are based on a greater share of the carriers' flights compared to FlightStats. Naturally, it would be of interest to analyze the reasons for the different delays, as some may be caused by the airline, while others can be attributed to external factors outside the immediate control of the airline. However, due to the immense magnitude of such a topic, an analysis of the underlying reasons for delays will not be conducted.

Potential delays or loss of baggage is another element that can be related to dependability in the airline industry. Accordingly, an indicator encapsulating this would be valuable for the purpose of our analysis. However, due to lack of sufficient and reliable data on the subject, this factor will be left out of the analysis. Furthermore, safety could be seen to represent a significant element with regards to dependability in the airline industry, making the incorporation of an indicator capturing this element useful. However, as this indicator will be approximately identical for all our case airlines, we do not consider this neither appropriate nor valuable for the analysis.

Table 3: Dependability and Corresponding Performance Indicators

Dimension	**Performance Indicators**	**Data Source**
Dependability	*D1 On-time performance*	*Airline Profiler, FlightStats and Annual Reports*

8.4 Flexibility: An Account of the Indicators

Flexibility refers to the ability to adapt and change the operation, and as outlined in the theory section, this can be split into four different categories, namely mix, volume, delivery, as well as product or service flexibility. However, in order to better capture the different elements of flexibility within the airline industry, we have modified some of the categories suggested by Slack et al. (2010) making them more suitable for the purpose of our analysis.

Destinations available (F1): Mix flexibility refers to the ability to offer a wide range of services. As the service an airline offers in its very essence is transportation from one location to another, we argue that a suitable indicator for mix flexibility is the number of destinations available to the passenger. This will both encapsulate a carrier's individual network, as well as the possible network effects of being an alliance member. It would have been beneficial to use routes instead of destinations, as the former encapsulates a more comprehensive description of an airline's network, but due to the lack of comparable data between the carriers with regards to routes, destinations will be used as a proxy for the different airlines' network.

Variety of ticket types (F2): In addition to offer transportation, an airline can offer additional services on the trip, and indicators that capture these elements are accordingly desirable to include when measuring mix flexibility. Consequently, the variety of ticket types offered by an airline will be used as a second indicator of mix flexibility. Considering that airlines operate with numerous different ticket types, these will be aggregated into the classes "Economy", "Flexible", "Business" and "First" in order to make the comparison more comprehendible.

Fleet structure (F3): Volume flexibility means the ability to change the output level of the operation. In the airline industry, the output level is typically seen as the number of available seats offered on a specific route. In cases of low demand and many unsold seats, the ability to change to another aircraft type could be an important source of volume flexibility. Fleet structure, assessed in terms of fleet size and composition, can accordingly be seen as a good indicator for the volume flexibility. A

large heterogeneous fleet will provide an airline with a greater potential for changing the output level. On the contrary, a homogenous fleet will also provide a degree of flexibility in terms of shifting flight and cabin crews between aircrafts. This indicator can thus provide valuable insight. However, one weakness with the fleet structure indicator is that it only measures the possibility of changing output level, instead of whether or not the output level actually is changed.

Flight frequency (F4): Delivery flexibility refers to the ability of an airline, and its passengers, to reschedule trips. If a flight is delayed or cancelled, the ability to provide passengers with an alternative flight would be a source of delivery flexibility. Additionally, the possibility to choose between numerous different departures to their preferred destinations is a source of flexibility for passengers as they plan and embark on either a business or personal trip. Accordingly, we argue that flight frequency is a good indicator for both these two aspects of delivery flexibility. This will be measured on the same selected routes as presented in the speed dimension, using pairwise comparison between airlines that serve the same destinations. The comparison will be carried out on the scheduled departures and arrivals for the different airlines in week 29 and 39. As with the indicator *F1,* this indicator will both encapsulate a carrier's individual flight frequency, and the possible benefits of airline alliances.

It could have been valuable to include an indicator that captures service flexibility, which means the ability to introduce new or modified services. Since the service an airline offers in its very essence is transportation from one location to another, a suitable indicator for service flexibility would have been the number of new routes or destinations launched by an airline on an annual basis. However, some of the case airlines neither publicize such information on their websites or in their annual report, nor would they provide us with it when we made an inquiry. As a result, this indicator has been excluded from the analytical framework.

Overall, it is expected that FSNCs will demonstrate a higher degree of flexibility than LCCs. These four indicators will provide a broad understanding of the dependability of an airline's operations, giving us the following model:

Table 4: Flexibility and Corresponding Performance Indicators

Dimension	Performance Indicators	Data Source / How to Measure
Flexibility	*F1 Destinations Available*	*Annual Reports and Company Websites*
	F2 Variety of Ticket Types	*Company Websites*
	F3 Fleet Structure	*Annual Reports*
	F4 Flight Frequency	*Pair-wise comparison on selected routes*

8.5 Cost Efficiency: An Account of the Indicators

Cost efficiency refers to the productivity of operations. In contrast to many of the other dimensions of competitiveness, there exist a number of more or less standardized measures that can serve as indicators of cost efficiency. Four different measures of cost efficiency have been selected, which are outlined below. The indicators of a financial nature have been converted into EUR using the average exchange rate for 2012 to avoid significant currency fluctuations affecting the results. The average rates stem from Bank of England and the Central Bank of Norway.

Unit cost (C1): Unit cost is an extensively used measure of cost efficiency in nearly every industry. The most common way to measure this in the airline industry is to calculate the ratio between total operating costs and Available Seat Kilometers (ASK). It has been frequently discussed within the industry whether fuel costs should be included in this calculation. Due to its significant presence within an airlines cost structure it has been included in our calculations. Accordingly, this indicator will provide us with a measure that is directly comparable across the different business models represented by our case airlines.

Labor productivity (C2): Labor productivity will be calculated as total passenger revenue divided by labor costs. This indicator will provide a measure of how effectively the employees are utilized in the airline operations in terms of return on each EUR invested in labor. In order to make the comparison between the two different business models feasible, on-board sales will be included in total passenger revenue, as catering tends to be included in the fare when travelling with FSNCs but not in the fare on LCCs.

Fleet productivity (C3): In order to calculate fleet productivity, the ratio between ASKs and total number of aircrafts will be used. This will make it possible to assess how efficiently the different business models are to utilize their fleet in terms of passenger carrying capacity. Due to FSNCs operation of long-haul flights, their production of ASKs is likely to be significantly higher compared to LCCs. However, LCCs higher seat density and higher daily utilization might equalize some of the FSNCs' long-haul advantage within this indicator.

Load factor (C4): The load factor of an airline will be calculated as Revenue Passenger Kilometers (RPKs) divided by Available Seat Kilometers (ASKs). This indicator demonstrates how efficient an airline is to exploit its available seating capacity.

As with alternatives measures, one could certainly question this approach to assess airline cost efficiency. Traditional cost measures commonly found in academic articles or theoretical publications are typically of a more generic nature, enabling comparisons across industries. Despite this, we have selected four industry-specific indicators allowing for an in-depth analysis of distinct airline characteristics, in addition to securing possibility of comparison between different carriers. Considering that the loss of ability to compare cost-efficiency against other industries is irrelevant in this thesis further supports this approach.

In general, it is expected that the LCCs naturally will perform better on the various cost efficiency measures. Together, these four indicators will provide a comprehensive view of each airline's cost efficiency, resulting in the following model:

Table 5: Cost Efficiency and Corresponding Performance Indicators

Dimension	**Performance Indicators**	**How to measure**
Cost Efficiency		
	C1 Unit Operating Cost	*Operating Costs / ASK*
	C2 Labor Productivity	*Passenger Revenue / Labor Cost*
	C3 Fleet Productivity	*ASK / Number of Aircrafts*
	C4 Load Factor	*RPK / ASK*

8.6 A Complete Overview

A complete overview of the analytical framework is outlined in the table below.

Table 6: Complete Analytical Framework

Dimension	Performance Indicators	How to measure / Source of data
Quality	*Q1 Value for Money*	*Skytrax Survey*
	Q2 Seat Comfort	*Skytrax Survey*
	Q3 Staff Service	*Skytrax Survey*
	Q4 Catering	*Skytrax Survey*
	Q5 Entertainment	*Skytrax Survey*
	Q6 Recommended	*Skytrax Survey*
Speed	*S1 Flight time consumption*	*Pair-wise comparison on selected routes*
	S2 Non-flight time consumption	*Pair-wise comparison on selected routes*
Dependability	*D1 On-time performance*	*Airline Profiler, FlightStats and Annual Reports*
Flexibility	*F1 Destinations Available*	*Annual Reports and Company Websites*
	F2 Variety of Ticket Types	*Company Websites*
	F3 Fleet Structure	*Annual Reports*
	F4 Flight Frequency	*Pair-wise comparison on selected routes*
Cost Efficiency	*C1 Unit Operating Cost*	*Operating Costs / ASK*
	C2 Labor Productivity	*Passenger Revenue / Labor Cost*
	C3 Fleet Productivity	*ASK / Number of Aircrafts*
	C4 Load Factor	*RPK / ASK*

9 Presentation of Data

In the following section, the gathered data will be presented for each of the six case airlines. Unless else is explicitly stated, the information presented stems from the carriers' annual reports. The only exception is Aegean, where the information is derived from their financial report, as their annual report for 2012 is unavailable.

9.1 Lufthansa Group

9.1.1 Quality

In the case of the Lufthansa Group, the scores are presented according to class. Furthermore, since the group consists of Lufthansa, Swiss, Austrian, and Germanwings, each carrier is presented in turn below.

LUFTHANSA	**N(E)**	**ECONOMY**	**N(B)**	**BUSINESS**	**N(F)**	**FIRST**
VALUE FOR MONEY *(Q1)*	116 / 118	3,55 / 5	49 / 49	3,45 / 5	10/10	4,10 / 5
SEAT COMFORT *(Q2)*	115 / 118	3,34 / 5	49 / 49	3,18 / 5	10/10	4,70 / 5
STAFF SERVICE *(Q3)*	116 / 118	3,81 / 5	49 / 49	3,96 / 5	10/10	4,50 / 5
CATERING *(Q4)*	115 / 118	3,36 / 5	48 / 49	3,60 / 5	9/9	4,60 / 5
ENTERTAINMENT *(Q5)*	81 / 118	2,84 / 5	36 / 49	2,83 / 5	9/9	3,70 / 5
RECOMMENDED *(Q6)*	118 / 118	0,68 / 1	49 / 49	0,59 / 1	10/10	1,0 / 1

SWISS	**N(E)**	**ECONOMY**	**N(B)**	**BUSINESS**	**N(F)**	**FIRST**
VALUE FOR MONEY *(Q1)*	79 / 81	3,72 / 5	58 / 58	3,98 / 5	6/6	3,83 / 5
SEAT COMFORT *(Q2)*	81 / 81	3,37 / 5	58 / 58	3,91 / 5	6/6	4,50 / 5
STAFF SERVICE *(Q3)*	81 / 81	3,70 / 5	58 / 58	4,31 / 5	6/6	4,50 / 5
CATERING *(Q4)*	79 / 81	3,41 / 5	58 / 58	4,21 / 5	6/6	4,33 /5
ENTERTAINMENT *(Q5)*	61 / 81	3,52 / 5	47 / 58	3,66 / 5	6/6	2,83 / 5
RECOMMENDED *(Q6)*	81 / 81	0,69 / 1	58 / 58	0,86 / 1	6/6	1,0 / 1

AUSTRIAN AIRLINES	**N(E)**	**ECONOMY**	**N(B)**	**BUSINESS**
VALUE FOR MONEY *(Q1)*	53 / 53	3,13 / 5	18 / 18	3,67 / 5
SEAT COMFORT *(Q2)*	53 / 53	2,87 / 5	17 / 18	2,29 / 5
STAFF SERVICE *(Q3)*	53 / 53	3,26 / 5	18 / 18	4,28 / 5
CATERING *(Q4)*	53 / 53	3,36 / 5	18 / 18	4,28 / 5
ENTERTAINMENT *(Q5)*	41 / 53	2,24 / 5	14 / 18	1,93 / 5
RECOMMENDED *(Q6)*	53 / 53	0,45 / 1	12 / 18	0,67 / 1

GERMANWINGS	N(E)	ECONOMY
VALUE FOR MONEY *(Q1)*	7 / 7	2,86 / 5
SEAT COMFORT *(Q2)*	6 / 7	3,33 / 5
STAFF SERVICE *(Q3)*	6 / 7	2,67 / 5
CATERING *(Q4)*	3 / 7	2,33 / 5
ENTERTAINMENT *(Q5)*	0 / 7	-
RECOMMENDED *(Q6)*	7 / 7	0,57 / 1

9.1.2 Speed

Flight Time Consumption (S1)

In accordance with the outlined presentation and justification of indicators, a pair-wise comparison on selected routes has been conducted based on the scheduled flights in week 29 and 39. With regards to flight time consumption, the gathered data yielded the following results:

FRANKFURT (FRA) – LONDON (LHR)			LONDON (LHR) – FRANKFURT (FRA)		
AVERAGE			AVERAGE		
AIR TIME	WAITING TIME	TOTAL	AIR TIME	WAITING TIME	TOTAL
01:55	00:25	02:20	02:05	00:18	02:23

BREMEN (BRE) – MANCHESTER (MAN)			MANCHESTER (MAN) – BREMEN (BRE)		
AVERAGE			AVERAGE		
AIR TIME	WAITING TIME	TOTAL	AIR TIME	WAITING TIME	TOTAL
03:26	02:22	05:48	03:29	02:28	05:57

BERLIN (TXL) – DUBLIN (DUB)			DUBLIN (DUB) – BERLIN (TXL)		
AVERAGE			AVERAGE		
AIR TIME	WAITING TIME	TOTAL	AIR TIME	WAITING TIME	TOTAL
03:31	02:21	05:52	03:26	02:49	06:15

Non-flight Time Consumption (S2)

The scheduled average travel time with public transportation from the airports on the selected routes is outlined in the table below.

TRANSPORT TO AND FROM AIRPORT (MINUTES)						
	Frankfurt (FRA)	**London (LHR)**	**Berlin (TGL)**	**Dublin**	**Bremen**	**Manchester**
TRAIN/METRO	13	16	-	-	10	20
BUS	30	-	28	28	18	33

9.1.3 Dependability

The tables below outline the data from FlightStats for each carrier in the Lufthansa Group. There were not registered any data on Austrian Airlines.

LUFTHANSA PASSENGER AIRLINES

					DELAYS		
	SCHEDULED	**TRACKED**	**DEPARTED**	**CANCELLED**	**15-30**	**30-45**	**45 +**
DEPARTURES	1237	298	290	8	10	3	5
ARRIVALS	1237	301	293	8	20	2	3

GERMANWINGS

					DELAYS		
	SCHEDULED	**TRACKED**	**DEPARTED**	**CANCELLED**	**15-30**	**30-45**	**45 +**
DEPARTURES	245	9	9	0	1	0	0
ARRIVALS	242	35	35	0	2	0	1

SWISS

					DELAYS		
	SCHEDULED	**TRACKED**	**DEPARTED**	**CANCELLED**	**15-30**	**30-45**	**45 +**
DEPARTURES	383	106	106	0	14	0	2
ARRIVALS	384	79	79	0	5	1	2

On-time Performance (D1)

On time-performance will be presented at the group level for LHG. The underlying rationale is that the data presented by Airline Profiler is aggregated to the group level, combined with the fact that LHG does not publicize their own on-time performance measures. Accordingly, the data from FlightStats have been aggregated to the group level, giving us comparable measures across the two different sources.

	FLIGHTSTATS	AIRLINE PROFILER	STATED BY AIRLINE
DEPARTURES	90 %	86 %	-
ARRIVALS	89 %	78 %	-

9.1.4 Flexibility

Destinations Available (F1)

Lufthansa operated flights to 250 destinations in 2012.

Variety of Ticket Types (F2)

The variety of ticket types offered by the different carriers in the Lufthansa Group is presented below.

LUFTHANSA PASSENGER AIRLINES

ECONOMY	FLEXIBLE	BUSINESS	FIRST
✔	✔	✔	✔

GERMANWINGS

ECONOMY	FLEXIBLE	BUSINESS	FIRST
✔	✔	✖	✖

SWISS

ECONOMY	FLEXIBLE	BUSINESS	FIRST
✔	✔	✔	✔

AUSTRIAN AIRLINES

ECONOMY	FLEXIBLE	BUSINESS	FIRST
✔	✔	✔	✖

Fleet Structure (F3)

LHG's fleet consists of 627 aircraft from Airbus, Boeing, Bombardier, Embraer and several smaller manufacturers. Between the different carriers a total of 20 different types exist, with the vast majority stemming from either Airbus or Boeing.

Flight Frequency (F4)

The flight frequency of LHG is measured on the routes between London (LHR) and Frankfurt (FRA), Manchester (MAN) and Bremen (BRE), and Dublin (DUB) and Berlin (TXL). The table below shows weekly departures in week 29 and 39.

WEEK / DESTINATION	LHR/FRA	FRA/LHR	MAN/BRE	BRE/MAN	DUB/TXL	TXL/DUB
29	137	131	106	100	132	132
39	140	131	118	108	127	133

9.1.5 Cost Efficiency

Unit Cost (C1)

The table below presents LHG's unit cost expressed in EUR. Operating costs equals total operating costs for LHG's Passenger Airline Group.

OPERATING COSTS (EUR)	ASK	UNIT COST (EUR) (C1)
24 228 000 000	254 995 000 000	0,095

Labor Productivity (C2)

LHG's labor productivity is outlined in the subsequent table.

PASSENGER REVENUE (EUR)	LABOR COSTS	LABOR PRODUCTIVITY (C2)
23 559 000 000	3 945 000 000	5,97

Fleet Productivity (C3)

The fleet productivity of LHG is presented in the table below. Aircrafts utilized for cargo operations are excluded.

ASK	NUMBER OF AIRCRAFTS	FLEET PRODUCTIVITY (C3)
254 995 000 000	627	406 690 590

Load Factor (C4)

The table below outlines LHG's passenger load factor.

RPK	ASK	LOAD FACTOR (C4)
200 984 000 000	254 995 000 000	78,8 %

9.2 British Airways

9.2.1 Quality

For British Airways, the customer evaluations have been assessed according to class. The results are outlined in the table below.

INDICATOR	N(E)	ECON	N(B)	BUS	N(F)	FIRST	N(PE)	PR.EC
VALUE FOR MONEY *(Q1)*	86 / 86	3,78 / 5	67 / 67	3,45 / 5	11/1	3,55 / 5	23/23	3,22 / 5
SEAT COMFORT *(Q2)*	86 / 86	3,43 / 5	67 / 67	3,67 / 5	11/1	4,00 / 5	23/23	3,52 / 5
STAFF SERVICE *(Q3)*	85 / 86	4,06 / 5	67 / 67	4,00 / 5	11/1	4,55 / 5	23/23	3,39 / 5
CATERING *(Q4)*	85 / 86	3,41 / 5	67 / 67	3,73 / 5	11/1	3,64 / 5	22/23	3,14 / 5
ENTERTAINMENT *(Q5)*	53 / 86	3,34 / 5	47 / 67	3,32 / 5	7/11	3,43 / 5	22/23	3,05 / 5
RECOMMENDED *(Q6)*	86/ 86	0,78 / 1	67/ 67	0,72 / 1	11/1	0,64 / 1	23/23	0,57 / 1

9.2.2 Speed

Flight Time Consumption (S1)

The tables below summarize the average flight time, waiting time and total time on the selected routes between London (LHR) and Rome (FCO), Manchester (MAN) and Amsterdam (AMS), and Edinburgh (EDI) and Madrid (MAD) in week 29 and 39.

LONDON (LHR) – ROME (FCO)			ROME (FCO) – LONDON (LHR)		
AVERAGE			AVERAGE		
AIR TIME	WAITING TIME	TOTAL	AIR TIME	WAITING TIME	TOTAL
02:27	00:00	02:27	02:40	00:00	02:40

MANCHESTER (MAN) – AMSTERDAM (AMS)			AMSTERDAM (AMS) – MANCHESTER (MAN)		
AVERAGE			AVERAGE		
AIR TIME	WAITING TIME	TOTAL	AIR TIME	WAITING TIME	TOTAL
02:13	03:15	05:29	02:10	03:23	05:33

EDINBURGH (EDI) – MADRID (MAD)			MADRID (MAD) – EDINBURGH (EDI)		
AVERAGE			AVERAGE		
AIR TIME	WAITING TIME	TOTAL	AIR TIME	WAITING TIME	TOTAL
03:54	02:16	06:10	03:43	02:00	05:43

Non-flight Time Consumption (S2)

The average scheduled travel time with public transportation from the airports on the selected routes is outlined in the table below.

TRANSPORT TO AND FROM AIRPORT (MINUTES)						
	London (LHR)	**Rome**	**Manchester**	**Amsterdam**	**Edinburgh**	**Madrid**
TRAIN/METRO	16	30	20	15	-	33
BUS	-	70	33	21	30	38

9.2.3 Dependability

The punctuality data from FlightStats within the given time frame yielded the following results:

					DELAYS		
	SCHEDULED	**TRACKED**	**DEPARTED**	**CANCELLED**	**15-30**	**30-45**	**45 +**
DEPARTURES	832	162	162	0	12	2	2
ARRIVALS	833	129	129	0	16	2	5

On-time Performance (D1)

British Airways uses departures within 15 minutes of scheduled time as their own on-time performance measure.

	FLIGHTSTATS	AIRLINE PROFILER	STATED BY AIRLINE
DEPARTURES	90 %	81 %	79 %
ARRIVALS	82 %	76 %	-

9.2.4 Flexibility

Destinations Available (F1)

British Airways operated flights to 170 destinations worldwide in 2012.

Variety of ticket types (F2)

ECONOMY	FLEXIBLE	BUSINESS	FIRST
✔	✔	✔	✔

Fleet Structure (F3)

The fleet composition is fairly complex with 233 aircrafts on balance sheet and 40 off balance sheet, totaling a number of 273 aircrafts in 2012. Moreover, BA currently possesses 12 different types from Airbus, Boeing, and Embraer, while future deliveries of two additional types is expected within 2014.

Flight Frequency (F4)

BA's flight frequency is measured on the routes between London (LHR) and Rome (FCO), Manchester (MAN) and Amsterdam (AMS), and between Edinburgh (EDI) and Madrid (MAD). The table below shows weekly departures in week 29 and 39.

WEEK/ DESTINATION	LHR/FCO	FCO/LHR	MAN/AMS	AMS/MAN	EDI/MAD	MAD/EDI
29	49	49	140	140	140	140
39	49	49	140	140	140	140

9.2.5 Cost Efficiency

Unit Cost (C1)

BA's unit cost expressed in EUR is presented in the subsequent table.

OPERATING COSTS (EUR)	ASK	UNIT COST (EUR) (C1)
13 019 236 100	158 247 000 000	0,082

Labor Productivity (C2)

The following table outlines BA's labor productivity in terms of passenger revenue generated per EUR invested in labor.

PASSENGER REVENUE (EUR)	LABOR COSTS (EUR)	LABOR PRODUCTIVITY (C2)
11 718 916 300	2 893 026 500	4,05

Fleet productivity (C3)

BA's fleet productivity in terms of ASKs generated per aircraft is presented below.

ASK	NUMBER OF AIRCRAFTS	FLEET PRODUCTIVITY (C3)
158 247 000 000	273	579 659 341

Load Factor (C4)

The subsequent table presents BA's passenger load factor.

RPK	ASK	LOAD FACTOR (C4)
126 436 000 000	158 247 000 000	79,9 %

9.3 Aegean Airlines

9.3.1 Quality

There are 47 customer reviews of Aegean Airlines stemming from 2012. The results are outlined below.

INDICATOR	N(E)	ECONOMY
VALUE FOR MONEY *(Q1)*	47 / 47	3,78 / 5
SEAT COMFORT *(Q2)*	47 / 47	4,00 / 5
STAFF SERVICE *(Q3)*	47 / 47	3,93 / 5
CATERING *(Q4)*	45 / 47	3,30 / 5
ENTERTAINMENT *(Q5)*	36 / 47	3,18 / 5
RECOMMENDED *(Q6)*	47 / 47	0,78 / 1

9.3.2 Speed

Flight Time Consumption (S1)

The tables below summarize the average flight time, waiting time and total time for flights on the selected routes between Oslo (OSLO) and Athens (ATH), Stockholm (ARN) and Larnaca (LCA), and Copenhagen (CPH) and Heraklion (HER) in week 29 and 39.

OSLO (OSL) - ATHENS (ATH)			ATHENS (ATH) – OSLO (OSL)		
AVERAGE			AVERAGE		
AIR TIME	WAITING TIME	TOTAL	AIR TIME	WAITING TIME	TOTAL
04:53	02:28	07:21	05:05	02:21	07:26

STOCKHOLM (ARN) - LARNACA (LCA)			LARNACA (LCA) – STOCKHOLM (ARN)		
AVERAGE			AVERAGE		
AIR TIME	WAITING TIME	TOTAL	AIR TIME	WAITING TIME	TOTAL
06:05	05:58	12:03	06:19	05:40	11:59

COPENHAGEN (CPH) – HERAKLION (HER)			HERAKLION (HER) – COPENHAGEN (CPH)		
AVERAGE			AVERAGE		
AIR TIME	WAITING TIME	TOTAL	AIR TIME	WAITING TIME	TOTAL
04:56	05:20	10:16	04:37	03:23	08:00

Non-flight Time Consumption (S2)

The scheduled travel time with public transportation from the airports on the selected routes is outlined in the table below.

TRANSPORT TO AND FROM AIRPORT (MINUTES)						
	Oslo	**Athens**	**Stockholm**	**Larnaca**	**Copenhagen**	**Heraklion**
TRAIN/METRO	20	40	20	-	15	-
BUS	60	60	45	30	25	20

9.3.3 Dependability

The data from FlightStats is outlined below**.**

					DELAYS		
	SCHEDULED	**TRACKED**	**DEPARTED**	**CANCELLED**	**15-30**	**30-45**	**45 +**
DEPARTURES	128	39	39	0	4	0	0
ARRIVALS	127	31	31	0	0	0	0

On-time Performance (D1)

Aegean does not operate with an on-time performance measure of their own.

	FLIGHTSTATS	**AIRLINE PROFILER**	**STATED BY AIRLINE**
DEPARTURES	90 %	89 %	-
ARRIVALS	100 %	75 %	-

9.3.4 Flexibility

Destinations Available (F1)

Aegean operates flights to 24 domestic and 35 international destinations, resulting in 59 destinations in total excluding their charter operations.

Variety of Ticket Types (F2)

ECONOMY	**FLEXIBLE**	**BUSINESS**	**FIRST**
✔	✔	✔	✖

Fleet structure (F3)

By the end of 2012, Aegean Airlines operated a fleet consisting of 28 aircrafts. All the aircrafts are in the Airbus 320-series.

Flight Frequency (F4)

Aegean's flight frequency is measured on the routes between Oslo (OSL) and Athens (ATH), Stockholm (ARN) and Larnaca (LCA), and Copenhagen (CPH) and Heraklion (HER). The table below shows weekly departures in week 29 and 39.

WEEKEND / DESTINATION	OSL/ATH	ATH/OSL	ARN/LCA	LCA/ARN	CPH/HER	HER/CPH
29	7	11	22	35	61	32
39	8	6	8	15	41	23

9.3.5 Cost Efficiency

Unit Cost (C1)

Aegean's unit cost expressed in EUR is presented below.

OPERATING COSTS (EUR) [1]	ASK [2]	UNIT COST (EUR) (C1)
667 315 490	8 346 000 000	0,080

Labor Productivity (C2)

The table below outlines Aegean's labor productivity.

PASSENGER REVENUE (EUR)	LABOR COSTS	LABOR PRODUCTIVITY (C2)
653 388 410	69 875 230	9,35

Fleet Productivity (C3)

Aegean's fleet productivity is presented in the table below.

ASK	NUMBER OF AIRCRAFTS	FLEET PRODUCTIVITY (C3)
8 346 000 000	28	298 071 429

[1] Including personnel expenses and depreciation in order to get comparable numbers

[2] The number of ASKs is derived from Airline Profiler due to lack of information in Aegean's financial report

Load Factor (C4)

The table below presents Aegean's passenger load factor.

RPK [3]	ASK	LOAD FACTOR (C4)
5 132 000 000	8 346 000 000	61,5 %

9.4 Norwegian

9.4.1 Quality

There were only 10 available reviews of Norwegian stemming from 2012. The results are presented below.

INDICATOR	N(E)	ECONOMY
VALUE FOR MONEY *(Q1)*	10 / 10	4,50 / 5
SEAT COMFORT *(Q2)*	10 / 10	3,90 / 5
STAFF SERVICE *(Q3)*	10 / 10	4,30 / 5
CATERING *(Q4)*	6 / 10	2,83 / 5
ENTERTAINMENT *(Q5)*	6 / 10	3,33 / 5
RECOMMENDED *(Q6)*	10 / 10	1,0 / 1

9.4.2 Speed

Flight Time Consumption (S1):

The tables below summarize the average flight time, waiting time and total time for flights on the selected routes between Oslo (OSLO) and Athens (ATH), Stockholm (ARN) and Larnaca (LCA), and Copenhagen (CPH) and Heraklion (HER) in week 29 and 39.

OSLO (OSL) – ATHENS (ATH)			ATHENS (ATH) – OSLO (OSL)		
AVERAGE			AVERAGE		
AIR TIME	WAITING TIME	TOTAL	AIR TIME	WAITING TIME	TOTAL
04:16	03:58	08:14	04:15	02:36	06:51

[3] The number of RPKs also stem from Airline Profiler

STOCKHOLM (ARN) – LARNACA (LCA) AVERAGE			LARNACA (LCA) – STOCKHOLM (ARN) AVERAGE		
AIR TIME	WAITING TIME	TOTAL	AIR TIME	WAITING TIME	TOTAL
05:09	02:58	08:07	05:10	03:50	09:00

COPENHAGEN (CPH) – HERAKLION (HER) AVERAGE			HERAKLION (HER) – COPENHAGEN (CPH) AVERAGE		
AIR-TIME	WAITING-TIME	TOTAL	AIR-TIME	WAITING-TIME	TOTAL
04:32	03:20	07:52	04:32	03:20	07:52

Non-flight Time Consumption (S2):

The average scheduled travel time with public transportation from the airports on the selected routes is outlined in the table below.

TRANSPORT TO AND FROM AIRPORT (MINUTES)						
	Oslo	**Athens**	**Stockholm**	**Larnaca**	**Copenhagen**	**Heraklion**
TRAIN/METRO	20	40	20	-	15	-
BUS	60	60	45	30	25	20

9.4.3 Dependability

The data from FlightStats is outlined below.

					DELAYS		
	SCHEDULED	**TRACKED**	**DEPARTED**	**CANCELLED**	**15–30**	**30-45**	**45 +**
DEPARTURES	484	73	73	0	4	0	0
ARRIVALS	486	51	51	0	0	0	0

On-time Performance (D1)

The different on-time performance measures are presented in the table below. Norwegian uses departures within 15 minutes of scheduled time as their own on-time performance measure.

	FLIGHTSTATS	**AIRLINE PROFILER**	**STATED BY AIRLINE**
DEPARTURES	95 %	93 %	85 %
ARRIVALS	100 %	89 %	-

9.4.4 Flexibility

Destinations Available (F1)

In 2012, Norwegian operated flights to 121 destinations.

Variety of ticket types (F2)

ECONOMY	FLEXIBLE	BUSINESS	FIRST
✔	✔	✖	✖

Fleet Structure (F3)

Norwegian operated a rather homogenous fleet by the end of 2012. It consisted of 68 aircrafts in total, split between 58 Boeing 737-800s and 10 Boeing 737-300.

Flight Frequency (F4)

Norwegian's flight frequency is measured on the routes between Oslo (OSL) and Athens (ATH), Stockholm (ARN) and Larnaca (LCA), and between Copenhagen (CPH) and Heraklion (HER). The table below shows weekly departures in week 29 and 39. Norwegian operates with seasonal adaptation on the Copenhagen – Heraklion route in week 39.

WEEK / DESTINATION	OSL / ATH	ATH / OSL	ARN / LCA	LCA / ARN	CPH / HER	HER / CPH
29	11	7	10	7	5	5
39	6	6	2	1	-	-

9.4.5 Cost Efficiency

Unit Cost (C1)

Norwegian's unit cost expressed in EUR is presented in the table below.

OPERATING COSTS (EUR)	ASK	UNIT COST (EUR) (C1)
1 668 168 517	25 920 000 000	0,064

Labor Productivity (C2)

The subsequent table presents Norwegian's labor productivity in terms of the return of each EUR invested in labor.

PASSENGER REVENUE (EUR)	LABOR COSTS (EUR)	LABOR PRODUCTIVITY (C2)
1 719 720 476	276 608 533	6,22

Fleet Productivity (C3)

Norwegian's fleet productivity in terms of ASKs generated per aircraft is listed below.

ASK	NUMBER OF AIRCRAFTS	FLEET PRODUCTIVITY (C3)
25 920 000 000	68	381 176 471

Load Factor (C4)

The table below outlines Norwegian's passenger load factor.

RPK	ASK	LOAD FACTOR (C4)
20 353 000 000	25 920 000 000	78,5 %

9.5 easyJet

9.5.1 Quality

For easyJet, there were 181 customer surveys reviews available. No evaluations on the entertainment-indicator (Q5) existed, which we consider to be a result of their low-cost/low-price offering.

INDICATOR	N(E)	ECONOMY
VALUE FOR MONEY *(Q1)*	177 / 181	3,74 / 5
SEAT COMFORT *(Q2)*	181 / 181	3,37 / 5
STAFF SERVICE *(Q3)*	179 / 181	3,74 / 5
CATERING *(Q4)*	120 / 181	3,33 / 5
ENTERTAINMENT *(Q5)*	-	-
RECOMMENDED *(Q6)*	181 / 181	0,74 / 1

9.5.2 Speed

Flight Time Consumption (S1)

The tables below summarize the average flight time, waiting time and total time for flights in week 29 and 39 on the selected routes between London (LGW) and Rome (FCO), Manchester (MAN) and Amsterdam (AMS), as well as Edinburgh (EDI) and Madrid (MAD).

LONDON (LGW) – ROME (FCO)			**ROME (FCO) – LONDON (LGW)**		
AVERAGE			**AVERAGE**		
AIR TIME	WAITING TIME	TOTAL	AIR TIME	WAITING TIME	TOTAL
02:31	00:00	02:31	02:39	00:00	02:39

MANCHESTER (MAN) – AMSTERDAM (AMS)			**AMSTERDAM (AMS) – MANCHESTER (MAN)**		
AVERAGE			**AVERAGE**		
AIR TIME	WAITING TIME	TOTAL	AIR TIME	WAITING TIME	TOTAL
01:25	00:00	01:25	01:20	00:00	01:20

EDINBURGH (EDI) – MADRID (MAD)			**MADRID (MAD) – EDINBURGH (EDI)**		
AVERAGE			**AVERAGE**		
AIR TIME	WAITING TIME	TOTAL	AIR TIME	WAITING TIME	TOTAL
03:00	00:00	03:00	02:50	00:00	02:50

Non-flight Time Consumption (S2)

The average scheduled travel time with public transportation from the airports on the selected routes is outlined in the table below.

TRANSPORT TO AND FROM AIRPORT (MINUTES)						
	London (LGW)	**Rome**	**Manchester**	**Amsterdam**	**Edinburgh**	**Madrid**
TRAIN/METRO	30	30	20	15	-	33
BUS	65	70	33	21	30	38

9.5.3 Dependability

The data from FlightStats is outlined in the table below.

					DELAYS		
	SCHEDULED	TRACKED	DEPARTED	CANCELLED	15 - 30	30 - 45	45 +
DEPARTURES	1308	212	212	0	17	7	4
ARRIVALS	1305	142	142	0	4	3	1

On-time Performance (D1)

easyJet uses arrivals within 15 minutes of scheduled time as their own on-time performance measure. The results are outlined in the table below.

	FLIGHTSTATS	AIRLINE PROFILER	STATED BY AIRLINE
DEPARTURES	87 %	92 %	-
ARRIVALS	94 %	88 %	88 %

9.5.4 Flexibility

Destinations Available (F1)

In 2012, easyJet operated flights to 128 different destinations.

Variety of Ticket Types (F2)

ECONOMY	FLEXIBLE	BUSINESS	FIRST
✔	✖	✖	✖

easyJet only offers one ticket type. However, passengers can pay for speedy boarding which ensures reduced time spent in check-in and boarding.

Fleet Structure (F3)

easyJet has a fleet consisting of 219 aircrafts. The airline solely relies on Airbus as its aircraft provider, and operates with Airbus 319 and 320 aircrafts.

Flight Frequency (F4)

easyJet's flight frequency is measured on the routes between London (LGW) and Rome (FCO), Manchester (MAN) and Amsterdam (AMS), as well as Edinburgh (EDI) and Madrid (MAD). The table below shows weekly departures in week 29 and 39.

WEEK / DESTINATION	LGW/FCO	FCO/LGW	MAN/AMS	AMS/MAN	EDI/MAD	MAD/EDI
29	24	21	13	13	7	7
39	26	26	13	13	7	7

9.5.5 Cost Efficiency

Unit Cost (C1)

easyJet's unit cost in EUR is presented below.

OPERATING COSTS (EUR)	ASK	UNIT COST (EUR) (C1)
4 363 596 900	72 182 000 000	0,060

Labor Productivity (C2)

The labor productivity, expressed as the return on each EUR invested in labor, is outlined in the subsequent table.

PASSENGER REVENUE (EUR)	LABOR COSTS (EUR)	LABOR PRODUCTIVITY (C2)
4 754 679 800	532 958 400	8,92

Fleet Productivity (C3)

The table below presents the number of ASKs generated per aircraft in easyJet's fleet.

ASK	NUMBER OF AIRCRAFTS	FLEET PRODUCTIVITY (C3)
72 182 000 000	219	329 598 174

Load Factor C4)

easyJet's passenger load factor for 2012 is outlined below.

RPK	ASK	LOAD FACTOR (C4)
65 227 000 000	72 182 000 000	90,4 %

9.6 Ryanair

9.6.1 Quality

There were 194 available reviews of Ryanair from 2012. They are all presented in the table below.

INDICATOR	N(E)	ECONOMY
VALUE FOR MONEY *(Q1)*	191 / 194	3,11 / 5
SEAT COMFORT *(Q2)*	192 / 194	2,87 / 5
STAFF SERVICE *(Q3)*	193 / 194	2,90 / 5
CATERING *(Q4)*	113 / 194	2,34 / 5
ENTERTAINMENT *(Q5)*	-	-
RECOMMENDED *(Q6)*	92 / 194	0,47 / 1

9.6.2 Speed

Flight Time Consumption (S1)

The tables below outline the average flight time, waiting time and total time for the selected routes between London (STN) and Frankfurt (HHN), Manchester (MAN) and Bremen (BRE), and Dublin (DUB) and Berlin (SFX) in week 29 and 39.

LONDON (STN) – FRANKFURT (HHN)			FRANKFURT (HHN) – LONDON (STN)		
AVERAGE			AVERAGE		
AIR TIME	WAITING TIME	TOTAL	AIR TIME	WAITING TIME	TOTAL
01:20	00:00	01:20	01:22	00:00	01:22

MANCHESTER (MAN) – BREMEN (BRE)			BREMEN (BRE) – MANCHESTER (MAN)		
AVERAGE			AVERAGE		
AIR TIME	WAITING TIME	TOTAL	AIR TIME	WAITING TIME	TOTAL
01:35	00:00	01:35	01:40	00:00	01:40

DUBLIN (DUB) – BERLIN (SFX)			BERLIN (SFX) – DUBLIN (DUB)		
AVERAGE			AVERAGE		
AIR TIME	WAITING TIME	TOTAL	AIR TIME	WAITING TIME	TOTAL
02:15	00:00	02:15	02:30	00:00	02:30

Non-flight Time Consumption (S2)

The average scheduled travel time with public transportation from the airports on the selected routes is outlined in the table below.

TRANSPORT TO AND FROM AIRPORT (MINUTES)						
	Frankfurt (HHN)	**London (STN)**	**Berlin (SFX)**	**Dublin**	**Bremen**	**Manchester**
TRAIN/METRO	-	48	55	-	10	20
BUS	105	65	60	28	18	33

9.6.3 Dependability

The data from FlightStats is presented in the table below.

					DELAYS		
	SCHEDULED	**TRACKED**	**DEPARTED**	**CANCELLED**	**15-30**	**30-45**	**45 +**
DEPARTURES	1716	289	289	0	19	1	2
ARRIVALS	1708	156	156	0	4	2	0

On-time Performance (D1)

Ryanair operates with arrivals within 15 minutes of scheduled time as their on-time performance measure. The table below presents their results within on-time performance.

	FLIGHTSTATS	**AIRLINE PROFILER**	**STATED BY AIRLINE**
DEPARTURES	92 %	91 %	-
ARRIVALS	96 %	91 %	91 %

9.6.4 Flexibility

Destinations Available (F1)

Ryanair operated flights to 168 different destinations in 2012.

Variety of Ticket Types (F2)

The variety of ticket types offered by Ryanair is outlined below:

ECONOMY	FLEXIBLE	BUSINESS	FIRST
✔	✖	✖	✖

Ryanair only operates with one ticket type, with no possibility to reserve seats. However, passengers do have the possibility to pay for priority boarding, enabling them to circumvent the boarding queue.

Fleet Structure (F3)

In 2012, Ryanair operated a homogenous fleet of 294 aircrafts, solely consisting of Boeing 737-800s.

Flight Frequency (F4)

Ryanair's flight frequency is measured on the routes between London (STN) and Frankfurt (FRA), Manchester (MAN) and Bremen (BRE), and Dublin (DUB) and Berlin (SFX). The table below shows weekly departures in week 29 and 39.

WEEK / DESTINATION	STN/FRA	FRA/STN	MAN/BRE	BRE/MAN	DUB/SFX	SFX/DUB
29	14	14	3	3	5	5
39	15	15	3	3	5	5

9.6.5 Cost Efficiency

Unit Cost (C1)

The table below presents Ryanair's unit cost expressed in EUR.

OPERATING COSTS (EUR)	ASK	UNIT COST (EUR) (C1)
3 707 000 000	114 488 000 000 [4]	0,032

[4] The number of ASKs stems from Airline Profiler, as Ryanair only operates with Available Seat Miles instead of kilometers

Labor Productivity (C2)

The labor productivity of Ryanair in terms of the return of each EUR invested in labor costs is outlined below.

PASSENGER REVENUE (EUR)	LABOR COSTS (EUR)	LABOR PRODUCTIVITY (C2)
4 390 200 000	415 000 000	10,58

Fleet Productivity (C3)

The subsequent table outlines Ryanair's fleet productivity in terms of ASKs generated by each aircraft in their fleet.

ASK	NUMBER OF AIRCRAFTS	FLEET PRODUCTIVITY (C3)
114 488 000 000	294	389 414 966

Load Factor (C4)

Ryanair's passenger load factor for 2012 is presented below.

RPK	ASK	LOAD FACTOR (C4)
94 282 000 000 [5]	114 488 000 000	82,4 %

[5] The number of RPKs also stems from Airline Profiler

10 Analysis

As outlined in the methodology section, the analysis follows Eisenhardt's (1989) two-step approach. Firstly, an analysis will be conducted case by case, examining each airline's operational performance within the different dimensions. Secondly, a comprehensive cross-case analysis will be conducted, comparing the performances across the different cases in order to identify possible patterns. Finally, the findings will be related to financial and market share performance. This approach will enable us to answer our research question and the related sub-questions.

10.1 Case by Case Analysis

10.1.1 Lufthansa Group

The overall scores within the quality dimension are mediocre for Lufthansa as a group. SWISS is the individual carrier that seems to perform best in terms of quality, especially with their business class, while Austrian Airlines' economy class and Germanwings are the carriers that display the worst performance. Lufthansa Passenger Airlines, the group's flagship, is characterized by mediocre results in terms of quality. The only exception is their first class concept, which attains high scores on all indicators. Moreover, when aggregating the individual carriers' scores according to class, the group's business concept seems to outperform the economy concept in terms of quality. With regards to speed, LHG keeps the average waiting time, and correspondingly the average total flight time, low on the route between Frankfurt and London by operating a large proportion of direct flights. However, the picture is quite different on the routes that do not involve one of their main hubs. LHG operates with both one and two intermediate stops on the route between Manchester and Bremen, and the route between Berlin and Dublin. This causes a large proportion of waiting time, which correspondingly increases the total flight-time consumption for their passengers. However, they only operate flights to primary airports, keeping the non-flight time consumption to a minimum for their passengers. In terms of dependability, LHG's operational performance is average, and the group seems to perform better with regards to on-time arrivals than on-time departures. A significant proportion of this can probably be associated with the operation of flights with intermediate stops, where delays on feeder flights cause subsequent delays on the connecting flights. With regards to flexibility, LHG's operations are characterized by high performance on all indicators, which partly can be attributed to the sheer size of the group. This is

evident in the number of destinations available, 250 in total. However, it is worth mentioning that 200 of these are singlehandedly served by Lufthansa Passenger Airlines. Furthermore, the broad variety of ticket types, combined with a large, heterogeneous fleet and a high flight frequency, provides the group with an even greater degree of flexibility. Moreover, there does not seem to be any seasonal adjustments within flight frequency, and with regards to ticket types, Germanwings is the only carrier in the group that does not offer business class to its passengers. In terms of cost efficiency, however, the performance of LHG's operations is seemingly low. A noteworthy exception is the performance in terms of fleet productivity, where they display rather good performance, despite their large fleet. This can partly be associated with the operation of long-haul flights, resulting in the production of a substantial amount of ASKs. A polar representation of Lufthansa Group's performance within the different dimensions is presented in Figure 10.

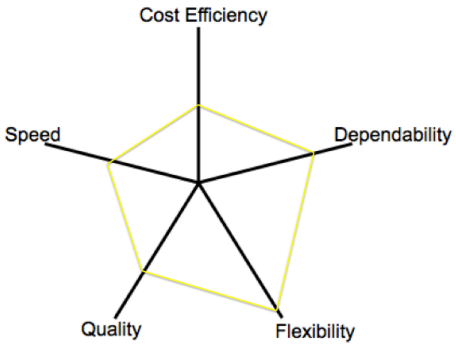


Figure 10 - LHG Polar Representation

10.1.2 British Airways

BA is characterized by good performance within the quality dimension, both with regards to their economy class, their business class and their first class concept. The latter concept displays better overall performance than their business class concept, which in turn seems to outperform their economy class. A noteworthy exception is in terms of value for money, where BA's economy class seems to perform better than both business class and first class. This can probably be related to the higher fare level on business and first class ticket. BA's premium economy concept seems to perform consistently worse than the three other quality indicators. One possible explanation might be that the experience does not justify the rise in expectations that follows from the higher fare level on premium economy tickets. With regards to speed, BA keeps the total time low between London and Rome by solely operating direct flights on this route. However, the picture changes once they move outside their main hub. Due to both one and two intermediate stops between Manchester and Amsterdam, and between Edinburgh and Madrid, average waiting time accounts for a large proportion of the total flight time consumption on these routes. However, BA only operates flights

to primary airports closer to city centers on the selected routes, keeping non-flight time consumption to a minimum. The performance in terms of dependability is rather low, both with regards to departures and arrivals. A substantial proportion of this can probably be attributed to the operation of both one and two intermediate stops, increasing the possibility of delays. Within the flexibility dimension, BA's operations are characterized by high performance on all indicators. A vast amount of available destinations is combined with a high flight frequency, especially on the route between Manchester and Amsterdam, and the one between Edinburgh and Madrid. Additionally, passengers are offered a broad variety of ticket types. Moreover, BA's heterogeneous fleet enhances the flexibility of the operations even further. However, the inherent complexity related to flexibility can be said to affect the cost efficiency, which is clearly evident in BA's poor performance within this dimension. The only exception is fleet productivity, where they are able to produce a substantial number of ASKs per aircraft, predominantly stemming from their long-haul operations and high flight frequency. A polar representation of BA's overall performance on all five dimensions is presented in Figure 11.

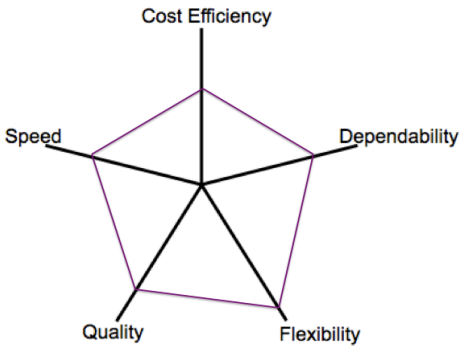


Figure 11 - BA Polar Representation

10.1.3 Aegean Airlines

Aegean seem to display varying performance in terms of quality. The most remarkable results are the airline's good performance in terms of seat comfort, while the score on entertainment is rather low, resulting in variable results within the quality dimension. With regards to speed, Aegean's use of both one and two intermediate stops results in a large proportion of average waiting time. This causes longer total travel time consumption for passengers, which is especially evident on the route between Stockholm and Larnaca. This might be attributed to their operation of a condensed regional network, depending on a number of feeder flights from areas with different population density. Additionally, the average waiting time and the correspondingly average total time on the flights between Copenhagen and Heraklion are significantly longer than on the flight from Heraklion to Copenhagen. One possible explanation could be that they need to wait on passenger from connecting flights on the flight to Heraklion, but only need to drop them off on the returning flight.

Furthermore, Aegean's use of primary airports on all the selected routes keeps the non-flight time to a minimum. With regards to dependability, Aegean's operations are characterized by low performance, especially in terms of on-time arrivals. Considering that dependability as mentioned has the potential of overriding all other criteria, this might have significant implications for Aegean's competitiveness. However, their regional emphasis and the seemingly lower competition on main routes may reduce the impact from a rather low dependability. The performance in terms of flexibility appears to be somewhat varying. On one hand, Aegean operates flights to relatively few destinations with a homogeneous fleet, while on the other they offer a broad variety of ticket types, and a high flight frequency, except on the route between Oslo and Athens. The flight frequency seems to be adjusted according to the season, with a higher frequency in week 29 on both the route between Stockholm and Larnaca, and between Copenhagen and Heraklion. With regards to cost efficiency, Aegean's operations are characterized by low performance on all indicators, except for labor productivity, where they seem to perform fairly well. The most noteworthy results are the poor performance in terms of load factor and fleet productivity. Both can be related to their regional focus, resulting in flights between less populated destinations, which causes a limited production of ASKs. Aegean's overall performance is depicted in figure 12.

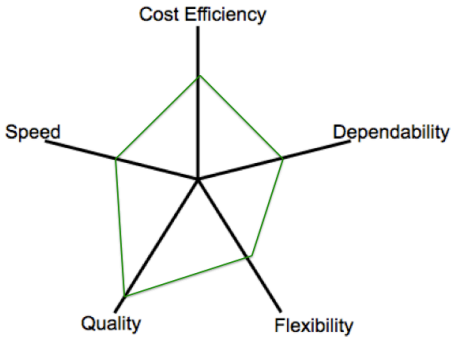


Figure 12 – Polar Representation of Aegean

10.1.4 Norwegian

Norwegian's operations are characterized by high performance within the quality dimension. This is especially evident in terms of value for money, where they obtain almost top scores. Moreover, Norwegian achieves a 100% recommendation rate. With regards to speed, the large proportion of waiting time on almost all routes drives up the average total flight time consumption. However, Norwegian only operates flights to primary airports on the selected routes, limiting the non-flight time consumption. The dependability of Norwegian's operations is rather good, as the company performs well both with regards to departures and arrivals. In terms of flexibility, Norwegian operates a rather diverse network, serving 121 destinations. However, the fact that the company does not offer business class tickets, combined with their homogeneous fleet and their rather low

flight frequency, suggests limited flexibility within the operations. Furthermore, there seems to be a case of seasonal adaptation on the selected routes, with noticeably higher flight frequency in week 29. When it comes to cost efficiency, Norwegian displays good performance in terms of unit cost and fleet productivity. However, the results with regards to labor productivity and load factor are only mediocre. Considering the rather average flight frequency and the seasonal adaptation, one might expect a higher load factor. However, the multitude of routes to various locations, and the homogeneous fleet preventing Norwegian from changing to a smaller aircraft in times of low demand can be influencing factors. Figure 13 depicts Norwegian's overall performance in a polar representation.

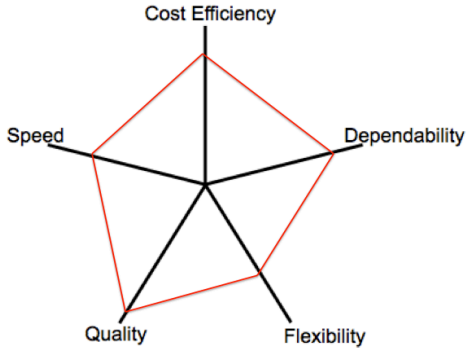


Figure 13 – Polar Representation of Norwegian

10.1.5 easyJet

easyJet's operations are characterized by fairly good performance in the quality dimension. Most notably are the high scores within value for money and staff service, as well as the fact that every three out of four respondents would recommend easyJet. In terms of speed, flight time consumption is kept to a minimum due to their point-to-point model, completely removing waiting time on all selected routes. Non-flight time consumption, however, reveals lower performance on the route between Rome and London. This is due to the fact that easyJet conduct flights from London Gatwick instead of London Heathrow, causing an increase in transportation time to the city center. With regards to dependability, easyJet performs well on both departures and arrivals. Moreover, with regards to the flexibility dimension, varying performance is revealed. The number of destinations served, 128 in total, is fairly high. However, easyJet consistently only offers one type of ticket, and their fleet is completely homogeneous, implying a low degree of flexibility. The flexibility is also low in terms of flight frequency, the only exception being a higher frequency of departures on the route between London and Rome. Moreover, there are no noticeable differences with regards to flight frequency between the two different selected weeks. Within the cost efficiency dimension, easyJet displays good operational performance. Especially noteworthy is their exceptional load factor, which can possibly be attributed to their relatively low flight frequency,

combined with a strong focus on operating between big and popular city-pairs. easyJet's overall performance is depicted in the polar representation in figure 14.

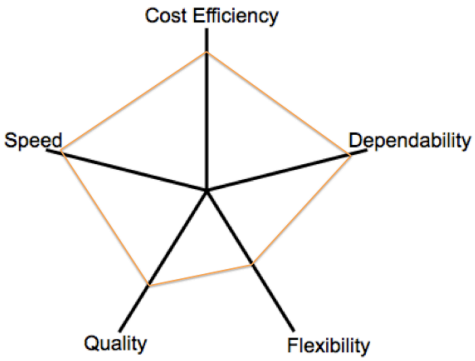


Figure 14 – Polar representation of easyJet

10.1.6 Ryanair

Ryanair's operations are characterized by rather low overall scores within the quality dimension. This is especially illustrated by the fact that less than half of the respondents would recommend Ryanair. The only minor exception from the low overall scores on quality is their performance in terms of value for money, which indicates that the low quality is somewhat compensated by the low price level. With regards to the speed dimension, Ryanair's point-to-point business model results in the complete removal of waiting time between flights, keeping the flight time consumption low. However, Ryanair's operation of flights to secondary airports, such as London Stansted, Frankfurt Hahn and Berlin Schönefeld, increases the non-flight time consumption, resulting in longer total travel time and possibly additional costs for passengers. This is especially evident on the route between London and Frankfurt. Another characteristic of Ryanair's operations is the strong performance within the dependability dimension, both in terms of on-time departures and arrivals. This can partly be attributed to their point-to-point operations, but Ryanair nevertheless seems to perform very well within this indicator. With regards to flexibility, the data displays mixed results. In terms of available destinations, Ryanair scores exceedingly well. However, by only offering one ticket type, combined with a homogeneous fleet structure and a rather low flight frequency, Ryanair displays low operational flexibility. The only exception in terms of flight frequency is on the route between London and Frankfurt, where the frequency is remarkably higher than on the two other selected routes. Another important characteristic with regards to Ryanair's operations is the high degree of cost efficiency, especially in terms of unit cost. The cost of 3,2 cents per generated ASKs is nothing less than extraordinary. This is a result of their absolute no-frills policy as well as their high labor productivity. The overall performance of Ryanair is depicted in the polar representation in Figure 15.

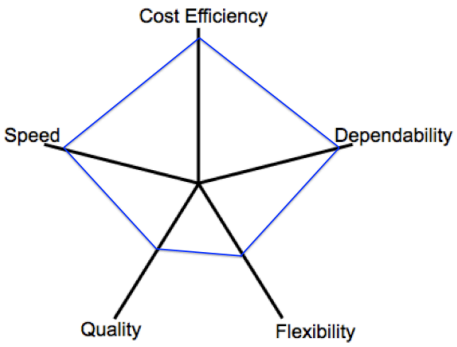


Figure 15 – Polar Representation of Ryanair

10.2 Cross-case Analysis

In this section, an analysis across the different cases will be conducted. The aim is to look for patterns and findings indicating a trend on how the broad set of carriers use different aspects of their operations to enhance their competitiveness. The analysis will be organized dimension-wise.

10.2.1 Quality

Judging briefly by the results within the quality dimension, it becomes evident that the carriers' performance is more ambiguous than expected. With the preliminary belief that the quality dimension is FSNCs forte, LCCs Norwegian and easyJet perform surprisingly well, whilst the most extreme low-cost no frills carrier Ryanair consistently obtains the lowest score on all indicators. This confirms that the LCC is a more multifaceted concept than initially anticipated.

Value for Money

On the value for money indicator, the carriers' performance is fairly wide spread. LCCs Norwegian and easyJet, as well as regional carrier Aegean, display the best performance on this indicator. LHG and BA obtain identical results, while Ryanair falls far behind with the noticeably lowest score. This is quite interesting considering their strict focus on offering the absolute lowest fare prices on the market. Given that they succeed with such a mission, one would presume customers' expectations to be rather low giving Ryanair the possibility to achieve a rather decent score on this indicator. Therefore, a result pointing to the contrary, whilst the carrier experiences substantial growth, implies that different customers have diverging views on the importance of the quality dimension.

Seat Comfort

In terms of seat comfort, the carriers' performance seems to be in line with the results observed within the value for money indicator, the only exception being BA surpassing easyJet. One could surmise that large FSNCs, such as BA and LHG, would perform better in this aspect, both due to their long-haul flights, as well as their network model with on average higher fare prices. This however does not seem to be the case, with regional carrier Aegean seemingly performing best, scarcely before Norwegian. Conceivably, one could argue that higher expectations towards FSNCs'

seat comfort, as well as the typical customer segment having inherently higher requirements, increases the difficulty for FSNCs of obtaining strong results. When analyzing the performance of LHG and BA, this certainly seems to be the case, considering that LHG is outperformed by easyJet, and that BA only briefly surpasses them. However, following this logic, the low expectations towards Ryanair's seat comfort, as well as their customers' modest requirements, could possibly boost their results. Nevertheless, Ryanair again seem to perform decidedly worst, indicating that even though expectations might have some impact, customers seem to provide an absolute judgment of carrier performance.

Staff Service

With regards to staff service, the slight pattern is further developed. Keeping the business model scale in mind, the two carriers closest to the center, Aegean and Norwegian, have so far consistently placed amongst the top three carriers. While this is also the case with staff service, FSNCs BA and LHG perform significantly better than on earlier indicators. We can observe a clear gap to LCCs easyJet and Ryanair as their score is notably lower in this aspect. A large proportion of this can probably be attributed to the LCCs no-frills service, often consisting of a smaller cabin crew on each flight and consequently less attention per passenger. Furthermore, if one is to accept recent years media attention on poor working conditions for LCC flight staff, there is certainly less incentives for the on-board flight crew to strive for excellent service.

Catering and Entertainment

The gap between the LCCs and their FSNC counterparts is further emphasized when reviewing the performance in terms of catering. BA and LHG perform significantly better than all other carriers, which is consistent with their full service model, where enhanced focus on catering becomes a more natural part of the flight. In terms of entertainment, there are no noteworthy differences between the carriers, and the comparatively high FSNC results observed on the two last indicators are no longer present. Due to their no-frills service, easyJet and Ryanair are as mentioned earlier not evaluated by customers within this aspect.

Recommendation Ratio

With regards to the recommendation score, there are several findings worthy of attention. First of all, Ryanair obtains a recommendation ratio of only 47%, which means that not even every second

passenger travelling with Ryanair would recommend the carrier. This is interesting considering Ryanair's continuous growth the last decade, establishing themselves as the largest LCC in Europe both in terms of passengers transported, as well as ASKs and RPKs generated (Ryanair Annual Report, 2012). This could primarily be explained by two underlying aspects. On one hand, Ryanair continuously find new markets and customers, considering that so few would recommend flying with them again. On the other, even though customers state that they wouldn't recommend flying Ryanair, they continue to travel with them in lack of a matching alternative. Neither of the latter explanations are unlikely, considering that Ryanair with their low fare flights introduced flying as an option to certain European customers segments that otherwise could not afford it. In light of this, one could speculate whether Ryanair's commoditization of air travel has made them less susceptible to detrimental critique since the overall demand for their services is fairly stable, and entails much less volatility than FSNCs business and first class tickets.

However, it is important to consider the possible long-term effects of such evaluations. easyJet, the European carrier most comparable to Ryanair, have also experienced rapid growth, especially within the last 5 years(easyJet Annual Report, 2012). Simultaneously, they obtain a far better recommendation ratio of 74%, and given fairly similar prices between the two airlines, this could have long-term effects for both parties. Relating such a gap in recommendation ratio to easyJet's consistently higher performance on all the preceding quality indicators, it is well worth surmising whether Ryanair will encounter even tougher competition on routes where both carriers operate. Furthermore, it is noteworthy that even though BA obtains higher scores with their economy class and LH with their first class, easyJet's recommendation ratio also surpasses the total aggregated scores of both these carriers. Moreover, it is interesting how the two carriers closest to the center of the scale once again seem to perform best within the quality dimension. Combining this with easyJet's remarkable recommendation ratio and Ryanair's poor scores, it most certainly calls for a discussion on how expectations influence various facets of the total flight experience. However, due to the magnitude and scope of this topic, such a discussion lies outside of this thesis.

In summary, the results within the quality dimension reveal an interesting pattern. LCCs perform surprisingly well on many indicators traditionally known to be FSNCs cornerstones. As such, these results confirm the LCCs influence on both customers' expectations and pre-existing carriers. Furthermore, LCC easyJet's overall scores are very similar to those of both LHG and BA, but they

seem to peak on different indicators. Moreover, a significant gap is detected between Ryanair and easyJet on several indicators, further emphasizing the larger differences within the LCC model than first anticipated.

10.2.2 Speed

The performance of the FSNCs and the LCCs are varying within the speed dimension. The subsequent section will present the results with regards to the two different indicators.

Flight Time Consumption

All the FSNCs operate with direct flights on the routes that originate from their main hubs, although to a varying degree. BA operates solely direct flights on the route between London and Rome, while LHG mostly conducts direct flights from Frankfurt to London, with certain exceptions. Additionally, Aegean operates with a small proportion of direct flights on the route between Athens and Oslo. However, on the selected routes outside their main hubs, all the FSNCs operate with connecting flights, splitting the flight into different legs. Some flights involve two intermediate stops, causing a large average proportion of waiting time, and consequently longer average total flight time consumption on these routes. Norwegian is the only LCC that operates both direct flights and flights with intermediate stops on all the selected routes. Aegean also operates with direct flights, in addition to both one and two intermediate stops. On the flights with two intermediate stops, both are often made within Greece, which is natural due to their regional focus. As a result of these intermediate stops, Norwegian demonstrates a better overall performance than Aegean, with lower average waiting time and correspondingly lower total flight time consumption on all the selected routes. The only exception is on the flight between Oslo and Athens, where Aegean displays a marginal better performance in terms of average waiting time and total flight time consumption. This can be attributed to the fact that Aegean operates some direct flights on this route. With regards to easyJet and Ryanair, both carriers solely operate with direct flights on all the selected routes. This results in a complete elimination of all waiting time, keeping the average total flight time consumption to a minimum. The overall picture in terms of flight time consumption is consequently characterized by better overall performance in favor of the LCCs, although the data reveals that there are exceptions on some of the selected routes. However, these exceptions are related to the routes involving the main hubs of the FSNCs.

Non-flight Time Consumption

In terms of non-flight time consumption, however, the picture is quite different. The FSNCs solely operate flights to primary airports on all the selected routes, keeping the non-flight time consumption to a minimum. This is also the case for Norwegian. The two other LCCs, however, both fly to secondary airports on some or all of the selected routes. easyJet operates flights to and from London Gatwick instead of London Heathrow, which doubles or quadruples the average non-flight time consumption, depending on whether passengers utilize the train, metro or bus. Ryanair solely operate flights to secondary airports in London (Stansted), Frankfurt (Hahn), and Berlin (Schönefeld). This increases the non-flight time consumption for their passenger on flights to London with three or four times, varying with the use of respectively the train / metro or the bus. On flights to Frankfurt, the non-flight time consumption for passenger travelling with Ryanair is more than three times as high than for passengers traveling with LHG, while it is two times as high with regards to Berlin. Except for Norwegian, the LCCs accordingly seem to display a lower overall performance in terms of non-flight time consumption.

In terms of speed in general, LCCs perform better with regards to flight time consumption and accordingly enhances their competitiveness compared to FSNCs. This emphasis on speed might be seen as an order-winning factor on certain short-haul routes. Moreover, Ryanair and easyJet are the carriers that by far display the best performance in terms of flight time on the selected routes. However, these carriers are also the ones that perform worst with regards to non-flight time consumption. Consequently, these airlines can be said to pass on some of the total travel time to their passengers, resulting in somewhat longer total travel time for their customers. This decreases the LCCs' advantage in terms of flight time consumption, and may accordingly reduce their competitiveness. This is especially the case for Ryanair, as this carrier serves a significantly larger proportion of secondary airports than easyJet.

10.2.3 Dependability

The LCCs seem to display a higher degree of dependability within their operations than the FSNCs. This is evident both in terms of departures and in terms of arrivals, especially with regards to the latter, which arguably is more important for passengers. According to the measures from Airline Profiler, on-time arrivals for the airlines on the LCC side is close to or over 90 % for all three

carriers, with Ryanair obtaining the highest score of all with 91 %. The corresponding numbers for the FSNCs are below 80 % for all three airlines. These carriers additionally seem to have a larger share of arrivals that are more than 45 minutes delayed compared to the LCCs, according to the data from FlightStats. This can be associated with the fragility of the network model, where all the feeder flights from the different spokes have to arrive at the hub on time in order to prevent delays from propagating from the different legs to the connecting flight. The possibility of minor delays on feeder flights accumulating into a more comprehensive delay in terms of arrival at the final destination further increases if the flight involves multiple intermediate stops. This may also explain why the FSNCs seem to perform better in terms of on-time departures than on-time arrivals, as flights may depart on time from the origin airport, but arrive later than scheduled at the final airport due to delays on the different legs. LCCs, on the other hand, generally steer clear of this issue by flying point-to-point, providing them with a greater extent of robustness with regards to dependability. However, it is worth mentioning that LHG has the highest percentage of on-time arrivals amongst the FSNCs. One might surmise that this partly can be related to the group's LCC Germanwings, which contributes to a better overall performance due to its point-to-point flights.

An alternative explanation for FSNCs lower performance in terms of dependability might be the fact that they operate a greater number of flights, which naturally would increase the possibility for delays. However, one may also argue that the FSNCs should have developed more dependable operations due to the leaning effects associated with conducting a substantial amount of flights. It is consequently difficult to ignore the fact that the FSNCs display significantly lower performance in terms of dependability than the LCCs.

The tables below summarize the on-time performance for the different airlines according to the numbers from Airline Profiler.

Table 7 – On-time Performance for All Carriers

	Lufthansa	BRITISH AIRWAYS	AEGEAN AIRLINES	norwegian.com	easyJet	RYANAIR
Departures	**86 %**	**81 %**	**89 %**	**93 %**	**92 %**	**91 %**
Arrivals	**78 %**	**76 %**	**75 %**	**89 %**	**88 %**	**91 %**

10.2.4 Flexibility

The airlines on the FSNC side of the scale seem in general to be characterized by better performance within the flexibility dimension. This is especially the case for LHG and BA, with both airlines being able to combine the operation of flights to a vast amount of destinations with a remarkably high flight frequency. The frequency of departures of all the FSNCs, especially LHG and BA, is of another magnitude than the LCCs. LHG conducts more than 100 flights per week on all the selected routes, while BA operates with a flight frequency of a similar size on the route between Manchester and Amsterdam, as well as between Edinburgh and Madrid. On the other hand, easyJet, the LCC with highest flight frequency, conducts at most around 20 weekly flights on the selected routes. Accordingly, FSNCs seem to serve a substantial part of the total demand, whereas LCCs do not have the capacity to operate in a similar manner.

Due to their regional focus, Aegean's flexibility in terms of destinations is limited, and all the carriers on the LCC side operate flights to more destinations than Aegean. They are, however, not able to compete with Aegean in terms of flight frequency. This can partly be attributed to the benefits associated with airline alliances. The LCCs are able to serve a respectable number of destinations, but because they neither have capacity enough alone nor have the backing of an alliance they are only able to maintain a limited flight frequency. Aegean, however, is in cooperation with its STAR Alliance affiliates able to maintain a high frequency of departures. The FSNC case airlines accordingly demonstrate differences in their use of alliance benefits. LHG and BA use their alliances and affiliated carriers to enhance their size and their global profile by focusing both on serving a vast amount of destinations and maintaining a high flight frequency. Aegean, on the other hand, do not use their alliance membership to expand their network but rather to increase their flight frequency within their network, strengthening their competitiveness on these routes.

Table 8 – Number of Destinations for All Carriers

Lufthansa	BRITISH AIRWAYS	AEGEAN AIRLINES	norwegian.com	easyJet	RYANAIR
250	170	59	121	128	168

In terms of variety of ticket types, the FSNCs also display more flexibility than the LCCs. All the FSNCs offer flexible, business, and first class tickets, in addition to economy tickets. On the contrary, Ryanair and easyJet only offer one ticket type, as well as the possibility of speedy / priority boarding, while Norwegian offers both economy and flexible tickets. As a result, both the LCCs and the FSNCs accordingly seem to focus on flexibility in terms of the core service of an airline, namely transportation, by serving a vast amount of destinations. However, only the FSNCs, especially LHG and BA, simultaneously seem to provide their passenger with additional elements of flexibility. For certain customer segments, it is highly like that such elements are considered to be order-winning factors. This is in line with the two different business model's contrasting emphasis on the flight experience, where LCCs can be said to define air travel merely as a means to an end, while FSNCs see the travel experience itself as playing a bigger part.

Carrier	**Economy**	**Flexible**	**Business**	**First**
Lufthansa Group	✔	✔	✔	✔
- *Lufthansa*	✔	✔	✔	✔
- *Germanwings*	✔	✔	✖	✖
- *SWISS*	✔	✔	✔	✔
- *Austrian Airlines*	✔	✔	✔	✖
BA	✔	✔	✔	✔
Aegean	✔	✔	✔	✖
Norwegian	✔	✔	✖	✖
easyJet	✔	✖	✖	✖
Ryanair	✔	✖	✖	✖

In terms of fleet structure, the airlines on the FSNC side of the scale, except from Aegean, seem to operate with a far more heterogeneous fleet than the LCCs. This may partly be attributed to the differences between the carriers in terms of the stage lengths they operate on. All three LCCs, as well as Aegean, mainly conduct short-haul flights, while LHG and BA additionally operate on long-haul routes. This might explain why Aegean as the only FSNC operates with a fleet of a homogeneous nature. However, although different stage lengths require different aircraft types, there are other factors that also affect the composition of an airline's fleet, such as the operation of routes with varying demand patterns. BA and LHG's heterogeneous fleet provide them with more

flexibility within their operations, allowing them to switch between aircrafts of different size in accordance with the shifting demand for the different flights. Accordingly can these carriers utilize larger aircrafts in cases of strong demand, which again can result in increased incremental revenue. At the same time, they are able to switch to smaller aircrafts when demand is low, making it possible to achieve a better utilization rate in terms of passenger load factor. The flexibility inherent in a heterogeneous fleet can thus result in a number of benefits. However, such a fleet also increases the complexity of the operations, making it more difficult to standardize. This is one of the greatest advantages with a homogeneous fleet, as it enables standardization in terms of training and certification for both flight crew and cabin crew. This makes it easier for an airline to shift and reallocate flight and cabin crews when unforeseen events occur. Consequently can a homogeneous fleet also be associated with a degree of flexibility. Furthermore, it provides the benefit of standardization in terms of maintenance, in addition to a potentially more stable relationship with an aircraft supplier, and possible discounts with regards to the acquisition of aircrafts. Accordingly, although the operation of a homogeneous fleet is accompanied by a lack of flexibility in some ways, it is also associated with a number of benefits.

Another interesting element with regards to fleet composition is that the airlines located on each end of our business model scale are the ones with the most divergent fleet structure. LHG operates the by far most heterogeneous fleet, while Ryanair operates a completely homogeneous one. The similarities and differences regarding BA and Ryanair's fleet composition are also noteworthy. Their fleets are approximately the same in terms of size, operating respectively 273 and 294 aircrafts by the end of 2012. With regards to structure, however, they are completely different. BA, as opposed operates a rather complex fleet, comprising both aircrafts of varying size, in addition to aircrafts from different aircraft manufacturers. This underlines the two different business model's emphasis on operations within the flexibility dimension. FSNCs LHG and BA emphasize complexity, allowing them to exercise a greater degree of overall flexibility, while the LCCs, especially Ryanair, emphasize simplicity, which in some ways comes at the expense of flexibility. As demonstrated in the next section, contrasting priorities with regards to flexibility can have major implications for the cost efficiency dimension.

10.2.5 Cost Efficiency

The performance with regards to cost efficiency displays a distinct pattern in favor of the LCCs. The results yielded within each indicator will be presented in the following.

Unit Cost

The results in terms of unit cost, measured as the carriers' cost per generated ASK, display a distinct pattern in favor of the low cost business model. The unit cost is constantly decreasing as we move further down the business model scale from left to right, confirming the relevance of such a scale. At one end of the continuum, LHG operates with a cost of 0,095 EUR per generated ASK, while Ryanair at the other side achieves a unit cost of 0,032 EUR. Considering that two of the most predominant cost elements for carriers are fuel and labor, a difference of almost three times is quite astonishing, regardless of business model variations. Although FSNCs LHG and BA produce a considerably larger amount of ASKs than their LCC counterparts, their operating costs are so substantial that neither of them are capable of matching the unit cost achieved by the LCCs. Furthermore, despite rather low operating costs, Aegean's regional focus only results in a limited production of ASK, making them unable to obtain the low unit cost demonstrated by the LCCs. By further breaking down the different airlines' operating costs using their annual reports, the underlying reasons for the differences between them become more apparent. A significant proportion of easyJet and Ryanair's competitiveness in terms of unit cost can be attributed to their low proportion of personnel costs, totaling respectively merely 12,2% and 11,2%.

There are substantial differences in-between the LCCs as well. While both Ryanair and easyJet strive to be a low-cost low-fare airline, it costs easyJet almost 100% more to produce one ASK compared to Ryanair. A decomposition of the carriers operating expenses reveals that some of this can be attributed to easyJet's operation of flights to primary airports, in contrast to Ryanair's focus on secondary airports. While airport charges account for 14,9 % of Ryanair's operating costs, easyJet's corresponding share constitutes 27%. Despite airport differences, it is striking that Ryanair achieves such a gap towards the second-most cost efficient carrier.

Table 9 - Unit Cost in EUR Cents per Generated ASK

Lufthansa	BRITISH AIRWAYS	AEGEAN AIRLINES	norwegian.com	easyJet	RYANAIR
0,095	0,082	0,080	0,062	0,060	0,032

Labor Productivity

The carriers' labor productivity, measured as the revenue generated per euro invested in labor, demonstrate similar results as the observations above. There are indications that LCCs are able to yield more revenue from their investments in labor. This can be related to the simpler nature of their operations, as well as offering less attention and customized personal service in-flight, thus reducing labor costs. Furthermore, LCCs are known for shifting a certain proportion of otherwise labor-related work towards customers, such as requiring self check-in with regards to boarding pass and baggage, solely offering online-booking, and establishing sizable administration fees for extra services that customers might desire. Low-cost carrier Ryanair is well known for practicing such a strategy, charging customers heavily for services that are most certainly free of charge within the FSNC business model. These measures result in a reduced need for employees for LCCs, enabling them to keep labor costs at a lower level than their peers.

Nevertheless, some ambiguity is also present within this indicator that are worthy of attention. Firstly, a large gap exist between regional carrier Aegean and LCC Norwegian in favor of the former. Aegean's strong performance is predominantly influenced by significant differences in wage levels between carriers' country of origin. Operating with personnel from geographical areas characterized by a lower wage level than in the northern part of Europe, they are able to reduce overall costs significantly. This is clearly depicted in CAPA's graph on labor costs for European Airlines (Appendix 1), demonstrating that Scandinavian carriers in general struggle with a wage level far above any competitors. This suggests that it is not necessarily merely operational emphasis, but geographical home base that to a large degree affect cost efficiency, in an industry where labor costs are one of the major cost drivers.

On the FSNC-side, LHG operates with almost 50% higher labor productivity than BA. Considering that Lufthansa Passenger Airlines and BA operate in a fairly similar manner, some portion of this can be attributed to Lufthansa's group strategy. Carriers such as Germanwings and to a certain extent Austrian Airlines operate in a less complex manner, thus enabling cost savings in terms of the number of personnel.

Table 10 - Labor Productivity as Revenue Generated per EUR Invested in Labor

Lufthansa	BRITISH AIRWAYS	AEGEAN AIRLINES	norwegian.com	easyJet	RYANAIR
5,97	4,05	9,35	6,21	8,92	10,58

Fleet Productivity

When considering the carriers' fleet productivity measured as the number of ASKs generated per aircraft, the trend changes considerably. FSNCs LHG and BA display a superior performance compared to the LCCs as a result of their significantly higher amount of ASKs. This is clearly illustrated by the major differences between UK carriers BA and Ryanair. With respectively 273 and 294 aircrafts, their fleet is fairly similar in terms of size. Nonetheless, due to their long-haul operations and high flight frequency, BA is able to generate a far greater amount of ASKs. However, as a result of their different ticket classes, they also have to operate with a lower seat density, preventing them from carrying as many passengers per flight as Ryanair and other LCCs. Pointing back to two of the central features of the LCC model, namely higher seat density and higher daily utilization of aircrafts, can explain why the LCCs still score relatively well within this indicator, as these two features allow them to produce a fairly high amount of ASKs, despite not conducting long-haul flights. Another aspect worthy of attention is the fleet productivity of FSNCs LHG and BA. One could surmise that LHG's large fleet combined with their flexible operations and a multitude of different destinations would enable them to achieve a very high fleet productivity. This however does not seem to be the case, as BA with about 40% of their fleet size is able to achieve a significantly higher productivity level. Consequently, this can be viewed as an indication that size does not always seem to correlate with productivity or scale efficiency within the airline industry. Nevertheless, the major FSNCs still seem to perform better overall in terms of fleet productivity, which can be attributed to their long-haul operations and their high frequency of departures.

Table 11 - Fleet Productivity in Millions of ASKs Generated per Aircraft

Lufthansa	BRITISH AIRWAYS	AEGEAN AIRLINES	norwegian.com	easyJet	RYANAIR
406″	579″	298″	381″	329″	389″

Load Factor

The pattern identified initially with LCCs outperforming FSNCs is also present with regards to the load factor. Ryanair and easyJet obtain by far the highest score on this indicator, but the difference between them is also interesting. Even though Ryanair seems superior on all other cost efficiency indicators, easyJet achieves a significantly higher load factor. One possible explanation of this could be easyJet's more narrow focus on primary airports between popular city-pairs, instead of heavily expanding the route network to also include less populated cities likely to have more

volatile demand and thus lower load factors. An illustrative example of such a network is the regional carrier Aegean, operating flights between a broad set of Greek destinations with varying population density. This is reflected in their load factor of 61,5 %, which is significantly below all other carriers. Given their regional focus, one is inclined to surmise to what degree seasonal influence and the current economical recession in Greece have also affected 2012's scanty load factor. However, we consider this to be one of the inherent risks of operating as a regional carrier, in contrast to the two other FSNCs that possesses a broader network of destinations to operate on if certain routes experience a downturn in demand.

In summary, the natural dominance of the LCCs within the cost efficiency dimension is confirmed by our analysis. With a lower unit cost than FSNCs, they are able to conduct operations in an entirely different manner, resulting in fare levels FSNC's can certainly not match with their current unit cost. However, LCCs also depend on such a low unit cost, considering that FSNCs are able to generate a more substantial amount of passenger revenue, demonstrated by the labor productivity indicator.

Table 12 - Load Factor in RPKs as a Percentage of ASKs

Lufthansa	BRITISH AIRWAYS	AEGEAN AIRLINES	norwegian.com	easyJet	RYANAIR
78,8%	79,9%	61,5%	78,5%	90,4%	82,4%

10.3 Putting the Pieces Together

As mentioned earlier is the role of the operations function to find the balance between the different performance dimensions. Accordingly will the next section summarize how the different dimensions are balanced in our case airlines, and how the performance within one dimension may have influence on the performance within others.

10.3.1 Speed and Dependability

The FSNCs operations seem in general to be characterized by a rather low performance in terms of speed and dependability. The nature of their hub-and-spoke business model entails flights with intermediate stops, causing a high proportion of waiting time, which consequently results in longer

total flight time for passengers. These intermediate stops and the operation of connecting flights directly affect the dependability of their operations, as minor delays seem to propagate and cause more severe delays. As a result, FSNCs' mediocre emphasis on the speed dimension accordingly has implications for their performance within the dependability dimension, which might have severe consequences for their competitiveness, for those customer segments where dependability functions as an order-winning factor. It is, however, important to highlight that the FSNCs' high flight frequency to some extent may compensate for this, as it provides them with the opportunity to redirect passengers to corresponding flights when delays occur. Moreover, solely operating flights to primary airports reduces some of the total travel time for passengers, as these airports are located closer to the city center. However, these factors do not appear to counterbalance the FSNCs low performance in terms of both speed and dependability.

LCCs, on the other hand, seem to be characterized by good performance both in terms of dependability and speed. By the nature of their business model, LCCs emphasize speed by flying point-to-point instead of operating a hub-and-spoke network, resulting in the complete removal of all waiting time and dependence on connecting flights. An emphasis on speed within the operations can accordingly seem to be related to dependability, providing a robustness that might be vital for an airline's competitiveness. It is however important to highlight that the LCCs conduction of flights to a number of secondary airports adds to the total travel time for their customers. Although this does not affect their dependability, it can to some extent reduce their attractiveness, as it prolongs the total travel time of their passengers, and certain customers are likely to perceive flights from primary airports as a qualifying factor. Nevertheless, LCCs seem to outperform FSNCs both within the speed and the dependability dimension.

10.3.2 Flexibility, Quality and Cost Efficiency

An important characteristic of FSNCs' operations seem to be the combination of high performance in terms of flexibility and low performance in terms of cost efficiency, with the former seemingly affecting the latter. Conducting flights to a vast amount of different destinations, while simultaneously operating with a high flight frequency can be seen as one of the main reasons for the FSNCs' lower capacity utilization compared to the LCCs as shown by the load factor. Additionally, the nature of their model implies that the destinations covered by the FSNCs may include less

populated cities, as they are dependent on the operation of feeder flights to carry passengers from different spokes to their major hubs. Accordingly, the frequency of departures from a broad variety of spokes have to correspond to the flight frequency of the connecting flights from the hubs, which may result in a lower load factor on these routes. The FSNCs' heterogeneous fleet could compensate for this, as it allows them to operate smaller aircrafts when needed. However, their load factor is nevertheless significantly lower compared to the LCCs. In the case of Aegean, the problem does not seem to be the number of destinations, as their network is fairly limited and condensed, but rather their regional focus, resulting in a fairly homogeneous portfolio of destinations. This means that they are more exposed to seasonal fluctuations in demand, in addition to being more susceptible towards downturns in the national economy. LHG and BA circumvent these problems by operating flights to a diverse set of destinations, reserving such problems for regional carriers, as these cannot relocate focus towards other geographical positions in times of low demand. Furthermore, Aegean's regional emphasis inevitably entails the operation of flights to destinations with varying population density. In combination with their homogeneous fleet, which prevents them from switching to smaller aircrafts in times of low demand, this may be a complementary explanation for their poor load factor.

On the contrary, the LCCs operations seem to be characterized by low performance in terms of flexibility and good performance in terms of cost efficiency. Flexibility within the operations seems to be less emphasized by the LCCs, although the rather vast amount of destinations provides them with some degree of flexibility. This is however coupled with a limited frequency of departures, enabling low-cost carriers to achieve a high load factor. This limited flight frequency can be attributed to the freedom associated with the LCCs' point-to-point model, as they do not have to adjust the frequency of departures from less populated destinations in accordance with connecting flights from hubs. Passengers consequently have to adapt to the LCCs' limited flight schedule, ensuring a high load factor even between destinations with lower population density. Another illustrative example of passengers having to adapt to LCC operations, is evident with regards to the use of secondary airports. As mentioned, these airports are often located far outside the city center shifting some of the total travel time from the airline to the passengers.

With regards to variety of ticket types, offering business and first class tickets causes the need for a larger cabin crew in order to provide passengers with the higher service level associated with these

ticket classes. Furthermore, these ticket types also entail an increase in the seat pitch per aircraft in order to provide better legroom. This consequently decreases the possible number of passengers per aircraft. These two factors may partially explain the FSNCs LHG and BA's low performance in terms of labor productivity. Similarly, by refraining from offering business and first class tickets, LCCs can minimize the seat pitch, making them able to carry more passengers per flight compared to FSNCs. Another implication of only offering economy tickets, in combination with a no-frills policy, is that the cabin crew per flight can be kept to a minimum. Taken together, these factors can partially explain the LCCs high performance in terms of labor productivity. However, the FSNCs' broad variety of ticket types, and the accompanied higher fare level, also provides FSNCs with a greater ability to generate passenger revenue, which has the potential to compensate for the substantial labor costs. Although both LHG and BA generate a significant amount of passenger revenue compared to the LCCs, the results in terms of labor productivity indicate that this does not compensate for their substantial labor costs. This is further underlined by the decomposition of the carriers' operating expenses, revealing that personnel costs accounted for 12,2% for easyJet and 11,2% for Ryanair in 2012, while the corresponding proportion constituted 16,3% and 22,2% for respectively LHG and BA.

In terms of quality, the two carriers located at the center of our business model scale, namely Aegean and Norwegian, seem to perform best. Keeping the notion of good quality as exceeding customers' expectations in mind, one might surmise that the initial expectations towards the quality of these carriers are lower than the expectations towards LHG and BA, as the latter carriers traditionally are associated with a greater emphasis on quality. This, combined with Aegean's FSNC features, and Norwegian's hybrid tendencies that involve some FSNC elements, can possibly explain these carriers' good quality scores.

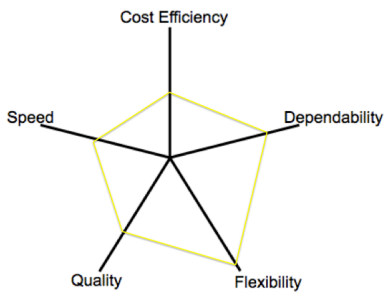
Although the overall quality for the other carriers do not seem to indicate that the FSNCs outperform the LCCs, this dimension is undoubtedly emphasized to a greater extent within the FSNC model. This is particularly noticeable in terms of staff service and catering. On these indicators, FSNCs demonstrate a better performance than the LCCs, which is further substantiated by comparing LHG and BA with Ryanair. This has repercussions within the cost efficiency dimension, and by refraining from offering any entertainment, LCCs easyJet and Ryanair are able to further reduce their operating expenses. Moreover, the LCCs, especially Ryanair's, use of

secondary airports enabling them to keep the airport charges proportion of operating costs low, further reinforcing their cost advantage.

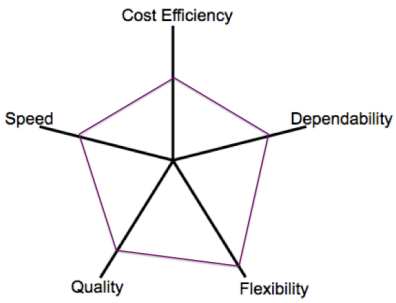
10.3.3 The Cost of Complexity

The overall simplicity of the LCC model exemplified above is reflected in their unit cost performance. By mainly focusing on the pure transportation part of the airline service both with regards to flexibility and quality, LCCs are able to keep operating costs at a minimum. Combined with a rather high production of ASKs, which can be attributed to their higher seat density and aircraft utilization, it results in a low unit cost enhancing their competitiveness if they are able to transfer this into offering cheap flights, as low fare levels seems to be an increasingly important order-winning factor within the airline industry. Although the FSNCs produce a significant amount of ASKs, their substantial operating expenses makes them unable to achieve the same unit cost as their LCC counterparts. In general, FSNCs emphasis on flexibility and quality within their operations accordingly seem to be accompanied by a greater complexity of the operations, which consequently causes lower performance with regards to cost efficiency. Considering that the FSNCs emphasis on quality does not yield the overall scores one could expect, combined with their high unit cost, it is worth surmising whether the focus on quality pays off in terms of financial performance. This is one of the main elements that will be dealt with in the next section.

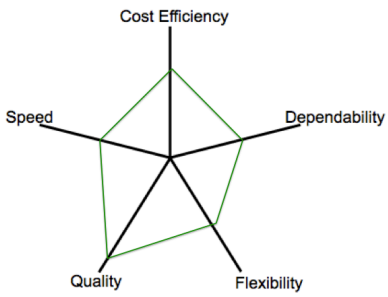
LHG



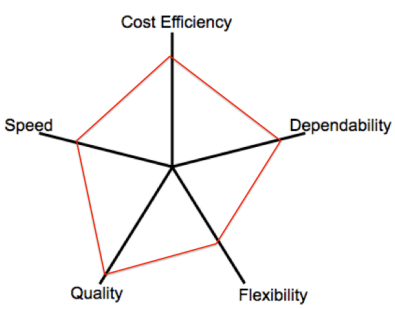
BA



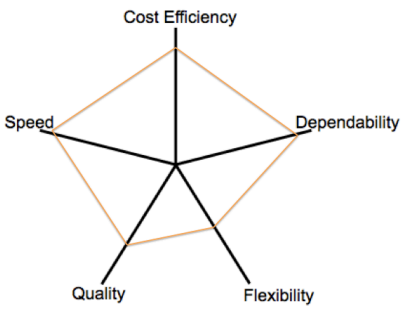
Aegean



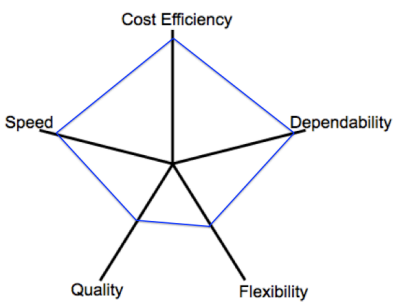
Norwegian



easyJet



Ryanair



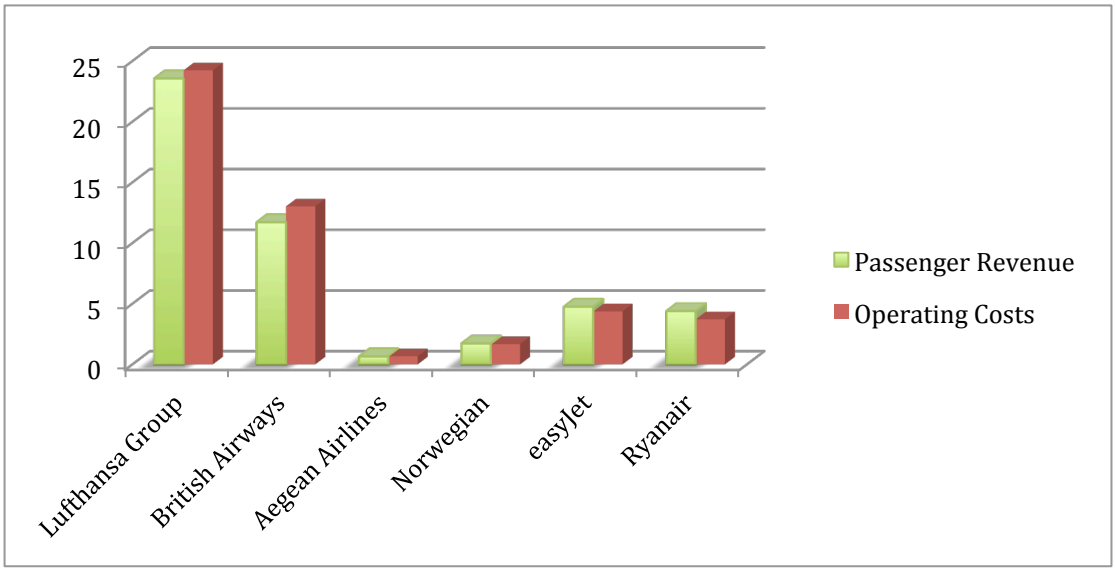
10.4 Financial and Market Share Performance

As demonstrated throughout the analysis, the different airlines are characterized by diverging emphasis within their operations. LCCs have proven superior to FSNCs with regards to cost efficiency, especially in terms of unit cost. However, cost efficiency is no guarantee of profit if an airline is unable to generate the corresponding revenues necessary to cover such costs on a long-term basis. As highlighted in our theoretical section on competitiveness, even though a broad set of goals may exist for an organization on a short-term basis, the company has to generate profit in the long run to satisfy its shareholders and ensure its long-term competitiveness. Accordingly, it is of utmost importance to accommodate for the other side of the profit equation and evaluate the corresponding revenues. As a result, the following section will link the airlines diverging operational focus with their financial and market share performance. This will enhance the eligibility of assessing the competitiveness of the different carriers, and additionally draw inferences about the future development of operational emphasis within the European airline industry. The structure will firstly be to look at the passenger revenue and corresponding operating cost, which subsequently will lead us to the different carriers' operating profit. Secondly, an analysis of the unit revenue and unit cost is conducted to gain a deeper understanding of underlying elements. Finally, a closer examination of labor cost is performed in order to comprehend its potential impact on airline profitability.

10.4.1 Passenger Revenue, Operating Costs and Operating Profit

As seen in Figure 16 below, FSNCs BA and LHG display both passenger revenue and operating cost of another magnitude than all other carriers. Despite vast differences, it appears that the three LCCs are the only carriers where passenger revenue surpasses operating costs within the fiscal year of 2012.

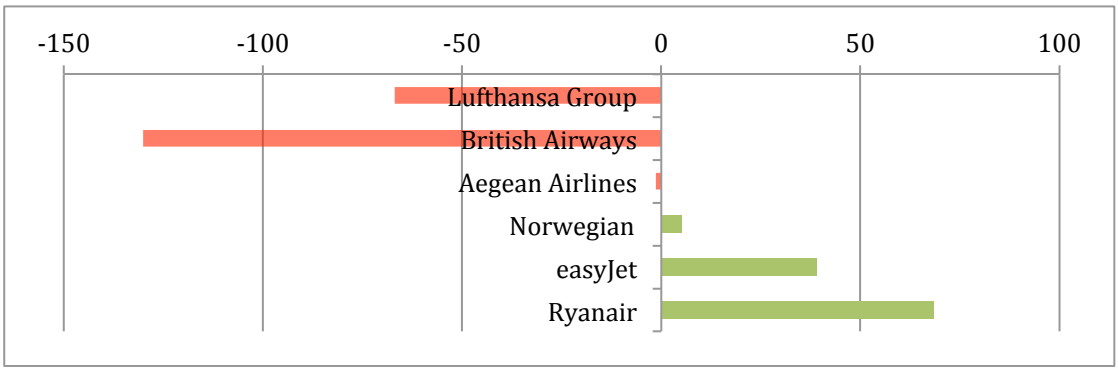
Figure 16 - Financial Performance in terms of Passenger Revenue and Operating Costs



Source: Own creation based on annual reports. Numbers in tens of millions EUR.

These differences are clearly illustrated in Figure 17 below, where the operating profit or loss of each carrier is depicted. Furthermore, although easyJet generates more passenger revenue than Ryanair, their operations also necessitate correspondingly higher operating costs. As a result, when calculating the operating profit, Ryanair outshines all other carriers. Moreover, with an operating loss of 1.3 billion in 2012, BA is unquestionably in a state of crisis.

Figure 17 - Operating Profit 2012 in tens of millions EUR

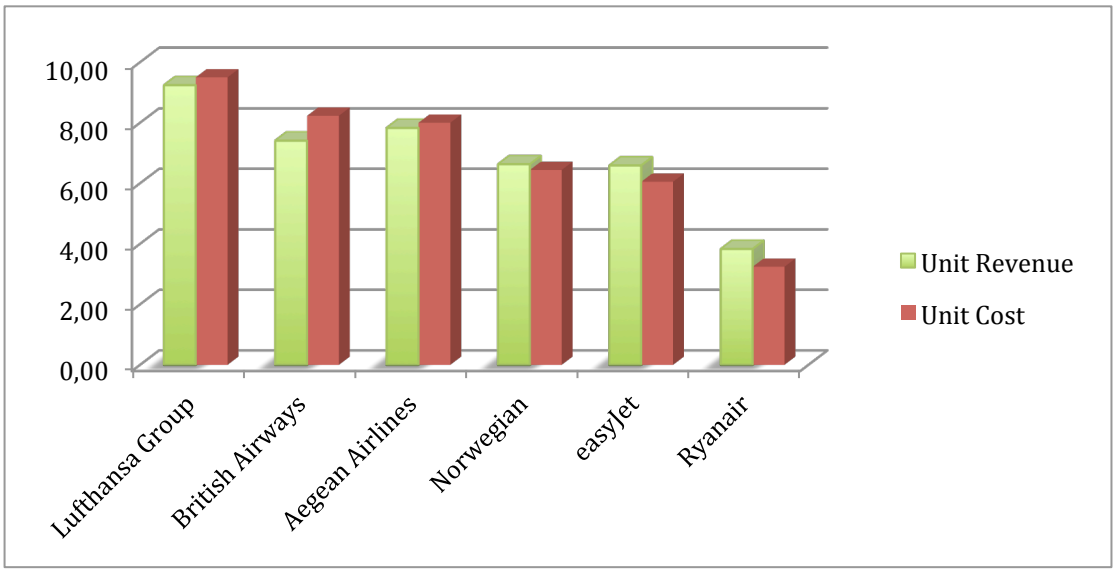


Source: Own creation based on annual reports and enclosed Excel calculations

10.4.2 Unit Cost and Unit Revenue

A closer examination of the unit costs and associated unit revenues can yield further insights to the carriers' performance. This is depicted in Figure 18 which reveals several noteworthy observations. First of all, as noted in the analysis, Ryanair achieves an outstanding unit cost compared to all other carriers. Keeping in mind that labor and fuel are the predominant cost drivers, it is remarkable how they are able to generate ASKs at almost half the cost of easyJet. Naturally, their unit revenue is of corresponding size and significantly lower than easyJet's. Be that as it may, considering how this translates into operating profit, it becomes clear that the absolute no-frills LCC is currently most profitable.

Figure 18 - Unit Revenue and Unit Cost per ASK generated in EUR cents



Source: Own creation based on annual reports and Excel calculations

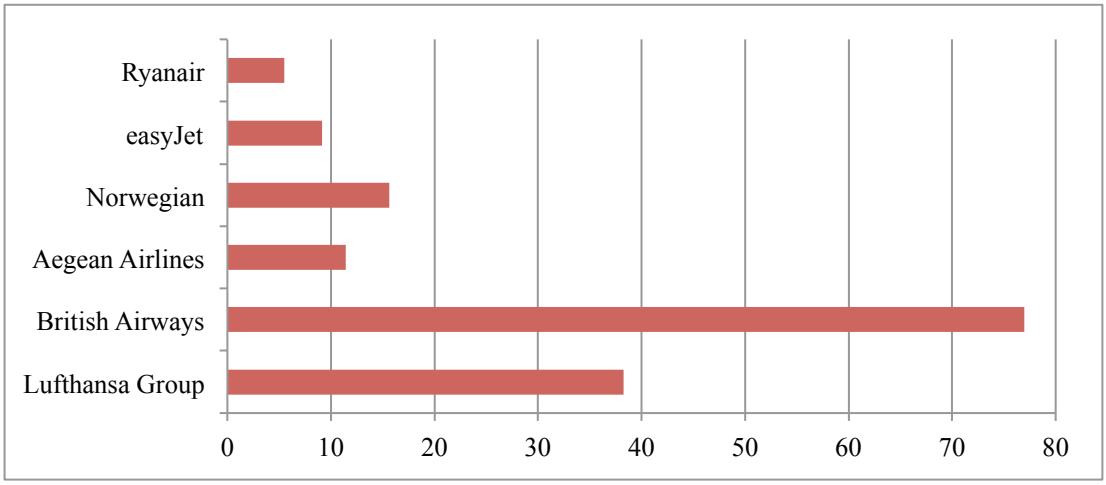
All FSNCs are characterized by a rather high unit revenue and unit cost. Therefore, a gap towards LCCs is quite natural considering the varying degree of complexity within their operations and the comparatively larger passenger revenues and operating costs. However, taking figure 17 into account, depicting the various carriers' operating profit, raises an important question on whether the general FSNC balance between emphasizing quality and flexibility with the associated costs is skewed. According to the operating profit illustrated above, this investment clearly does not pay off. On the background of the analyzed annual reports, the most sizable cost drivers of high quality

operations appears to be labor, as well as investments in various assets such as upgraded aircraft seating and improved dining.

10.4.3 Labor as an Important Cost Driver

Considering labor costs relative size, we consider a closer examination of labor costs to be in order, to evaluate and elaborate on the existing differences between the carriers. Due to vast size differences, absolute measures seem to be of little value. Therefore, in Figure 19 the carriers labor costs are illustrated relative to the number of passenger transported (PAX).

Figure 19 - Direct labor cost in EUR per passenger transported



Source: Own creation based on annual reports and Excel calculations

One aspect of labor cost differences becomes clear in the graph above. By relating labor costs to the total number of passengers, it becomes evident that FSNCs operate with immensely larger labor costs per passenger transported. Ryanair is able to transport almost 15 passengers at the equivalent cost of BA transporting one passenger. The significant gap between LHG and BA is also noteworthy, where the former operates with approximately half of the latter. Based on our analysis, this is perceived to be a result of two factors. Firstly, LHGs group strategy enables them to operate carriers, such as Germanwings and the currently restructured Austrian Airlines, in a simpler manner with correspondingly lower labor costs. Secondly, BA's enhanced focus on long-haul operations entails fewer flights, fewer passengers, as well as longer stage lengths, and a typically higher number of employees associated with these types of flights. Despite long-haul operations, it is utterly clear that BAs operations are currently not profitable, something that has received

scrupulous media attention in recent years, pinpointing precisely high labor costs as the predominant underlying reason. Steeped in aviation tradition, BA's labor force is currently based on a costly seniority system, where wage distinctions are made between staff on a broad number of variables, and promotion is based on length of employment. Over time this has led to rigid, high-demanding labor unions with an aversion towards amending current wage levels. Comparing BA with their British counterparts on long-haul flights, Virgin Atlantic, exemplifies the latter as they operate with half of the flight and cabin crew salaries compared to those of BA (The Guardian). This is most certainly substantiated by Figure 19 above.

As a result, it becomes utterly clear that labor cost is a major challenge for FSNCs to survive both in the short and long-term, and that it appears to be one of the most influential drivers of unprofitable operations. While the FSNC's earlier were able to defend such costs with correspondingly high revenues, the presence of LCCs has made such a strategy increasingly difficult. As a result, several alterations, both in terms of labor costs and the level of complexity are in order to ensure profitable FSNC operations in the time to come.

It must be noted that FSNCs still serve the majority of short and long-haul flights both on the European and the global market (CAPA, 2013c). Accordingly, a demand for their flights is most certainly present that LCCs are neither currently nor in the foreseeable future able to serve, despite their momentous growth in traffic the last decade. Accordingly, it is not necessarily solely the introduction and foothold of the LCC model that strangles European FSNCs. An important effect is also the resulting influence and to some degree shift of large customer segments' expectations and requirements towards air travel, making the previous FSNC cost level no longer tenable. This is further substantiated by the results yielded within the quality dimension of the analysis. With this in mind, clear indications exist that the leading question moving forward is not whether LCCs will capture the entire intra-European market, but rather how European FSNCs can restructure their operations in order to reduce their inherent cost disadvantage, enhance their competitiveness, and gradually start serving the substantial demand in a profitable manner.

11 Conclusion

As demonstrated throughout the analysis, FSNCs seem to be characterized by an enhanced emphasis on flexibility and quality within their operations. However, the focus on the latter does not appear to yield corresponding results in terms of customer evaluations, initiating a discussion of the balance between quality and flexibility on one hand, and cost efficiency on the other. Within the cost efficiency dimension, there exists a noteworthy gap between FSNCs and LCCs, especially in terms of unit cost. However, as cost efficiency is no guarantee of profit, it is important to accommodate for the revenue side as well. Due to the presence of LCCs, which seemingly has influenced and shifted customer expectations and requirements towards air travel, the FSNCs seem to be prevented from extracting correspondingly high revenues, ultimately resulting in unprofitable operations. Accordingly, the FSNCs' weight between quality and flexibility on one side, and cost efficiency on the other, appears to be uneven. This was especially noticeable when relating the analytical findings to the different carriers' financial performance, which undoubtedly has repercussions for their long-term competitiveness.

On the contrary, LCCs are characterized by a greater emphasis on cost efficiency within their operations, and their good performance in terms of speed and dependability seem to be an inherent part of their business model. Point-to-point operations ensure direct flights with a high degree of dependability, as there are no connecting flights increasing the possibility of delays. The combination of these elements appears to provide the LCCs with a solid basis for competitiveness, as their low unit cost and the stable demand for inexpensive air travel seem to ensure profitable operations. This is reflected in the carriers' operating profit, where the LCCs are the only ones able to yield positive results for the fiscal year of 2012. Moreover, it became evident that the notion of the LCC is a more multifaceted concept than initially anticipated. Broad differences were identified between the sample carriers, both in terms of their operational emphasis and unit cost structure. As such a structure has long-term implications, there is no reason why these differences would diminish on either a short or long term basis.

As a result, the diverging operational emphasis demonstrated by the different variations of the two models can be said to influence their competitiveness in different ways. LCCs will undoubtedly continue to enchant customers with a desire for inexpensive flights, if they are willing to obey to their rigid guidelines. On the other hand, FSNCs' highly flexible operations, and the accompanied

possibility of convenient travel, can prove to be order-winning factors for certain customer segments. However, due to FSNCs current level of unprofitability, significant alterations must be carried out to transform operations towards a profitable manner in order to ensure their long-term sustainability.

12 Potential Operational Emphasis in the Time to Come

"Their business model – essentially designed to take anyone from anywhere to everywhere seamlessly – was a great innovation, but is no longer economically sustainable in its current form" (Hansson, Ringbeck, & Franke, 2002, p. 1).

The analysis of the different carriers' operations has demonstrated that the emphasis on quality associated with the FSNC model does not seem to yield the corresponding results. Furthermore, focusing on quality and flexibility neither seems to pay off in terms of financial performance. This implies, as highlighted by the introductory quote, that the FSNC model no longer is sustainable in its current form, and that some alterations with regards to their operations are in order to improve their future competitiveness. The following section will discuss some of these possible alterations, as well as outline future challenges of the LCC model. This will be related to the possible corresponding operational emphasis for the different models in the future.

12.1 Reducing the Cost Gap

A number of initiatives have already been carried out by FSNCs generally in order to enhance their competitiveness in the face of LCC opposition. Due to the FSNCs low performance with regards to cost efficiency, a natural emphasis have in the recent years been to reduce the existing unit cost gap towards the LCCs. The recent successive restructuring of SAS' is just one of many examples, and focusing on cost efficiency will arguably also be of importance in the time to come. The enormous differences outlined in the analysis between the FSNCs and the LCCs in terms of unit cost illustrates the nearly impossible task the FSNCs are faced with in order to sufficiently reduce this gap. However, Derek Sharp, managing director of the global distribution system Travelport, pinpoints the essence of the differences between the two models, stating that "*FS[N]Cs don't need to get costs down to LCC levels, as the value proposition is different*" (CAPA, 2013a). This is

substantiated by the emphasis on flexibility displayed by the FSNCs throughout the analysis, considerably outperforming the LCCs in terms of flight frequency. This flexibility may attract certain customer segments with a higher willingness to pay, resulting in potentially higher passenger revenue. Accordingly, FSNCs do not need to compete directly with LCCs by striving to achieve their low cost level, but they do need to sufficiently reduce their inherent cost disadvantage in order to ensure profitable operations. The differences between Norwegian, easyJet and Ryanair with regards to unit costs also highlight the enormous disparities amongst the LCCs. This confirms the importance of our initial argument with regards to conceptualizing the different airlines as representing different parts of a scale.

As already mentioned, the operational emphasis and corresponding value proposition offered by the FSNCs does not seem to pay off in its current form. However, the quality scores within some of the different business and first class segments seem to indicate that an emphasis on quality has the potential to yield correspondingly good results. The business class of LHG carrier SWISS is an illustrative example, achieving scores close to or over 4 out of 5 on all categories, as well as a recommendation rate of 86%. This is also the case for Lufthansa Passenger Airlines' first class, the only difference being their recommendation rate of 100%. Furthermore, BA's first class also seems to yield scores that are more in line with the associated quality emphasis. The common denominator for both LHG and BA first class is that neither airlines offer these tickets on short-haul flights. Accordingly, the FSNCs' quality emphasis only seems to yield corresponding high quality scores on long-haul flights, and one might surmise that they consequently should focus their efforts within these ticket types on long-haul operations. One possibility is to reduce short-haul operations, entrusting the LCCs with the general responsibility for the short-haul market. Another option is to attempt to serve short-haul routes with less complex operations. An example of the latter is SAS' recent removal of their once so innovative and successful business class concept on intra-European flights, and the corresponding cut of average fare level on these routes (Pedersen, 2013). Moreover, several other European flag carriers, such as Aer Lingus and Iberia, have abandoned complimentary in-flight food on short-haul routes, and now only offer the possibility to buy drinks and snacks on these flights (The Economist, 2013). Although reducing operating costs, these measures do not seem to be sufficient. The illustrations of labor costs per passenger presented in the previous section depict that labor costs seem to be the most crucial area for the FSNCs. Accordingly, more drastic measures is needed in order to improve their competitiveness.

One example of such an extreme measure is LHG's expanded transfer of all short-haul operations to LCC Germanwings in 2013, except the ones that depart from their main hubs. This will allow LHG to emphasize quality and flexibility on long-haul routes, while simultaneously operating with less complex operations on short-haul flights. By utilizing Germanwings point-to-point flights, LHG can enhance the performance of their operations in terms of speed. As highlighted in the analysis, this may further enhance their dependability. Moreover, transferring parts of their operations to LCC will allow them to reduce labor costs, an area with large potential for improvement as depicted by the figure 19 presented earlier. These graphs illustrate that LHG performs second worst of all the case airlines, both in terms of direct labor costs per passenger transported, as well as passenger revenue and ASKs generated per EUR invested in labor. Accordingly, a reduction of labor costs is of the utmost importance in order to improve their competitiveness. Germanwings CEO Thomas Winkelmann has stated that the carrier's cost base in general will continue to be 20% lower than Lufthansa Passenger Airlines (CAPA, 2013b). This might indicate that there are a number of operational advantages related to hand over parts of operations to a LCC. However, keeping the earlier discussion of the importance of unit revenue in mind as well, it will be interesting to see whether Germanwings are able generate a corresponding unit revenue, ensuring profitable operations in the long run. As LHG operates with joint traffic and financial data for their flag carrier Lufthansa and Germanwings for 2012, the carriers' individual performance is difficult to compare and assess. However, CAPA – Center For Aviation - has used Germanwings' traffic and financial data for the fiscal year 2011, comparing it with data for LHG's operations on short- and medium haul operations in 2012 in order to predict the potential outcomes of LHG's transferal. These results indicate that Germanwings will operate with a unit cost 23% lower than LHG on similar routes, confirming the statement of Germanwings CEO Winkelmann. However, the results also indicate that Germanwings' corresponding unit revenue appears to be 28% lower than LHG's, ultimately resulting in less profitable operations (CAPA, 2013b). This implies that the operational benefits associated with such a move may involve difficulties in terms of converting them into profitability.

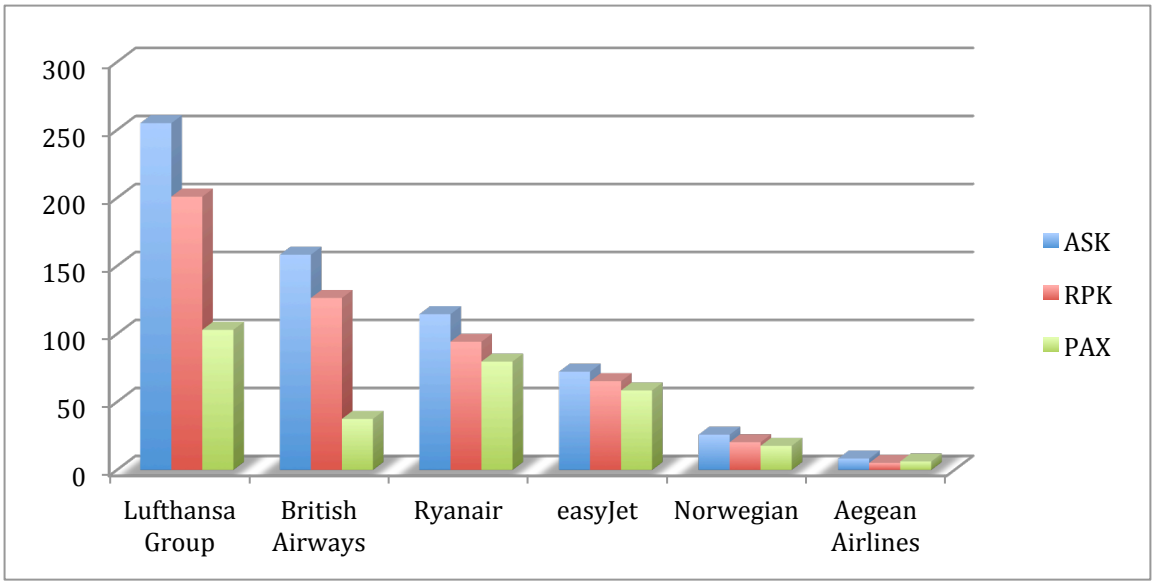
Moreover, there are additional disadvantages related to incorporating a LCC as part of a group. The fact that LHG to a large extent emphasizes quality within its operations can have undesirable repercussions, as passengers travelling with their affiliated low cost carrier Germanwings might have unrealistic expectations that exceeds the actual experience, possibly leading to low quality scores. However, our analysis do not seem to indicate that low quality scores necessarily are

associated with unprofitability, as Ryanair seem to perform worst in terms of quality, but still manages to generate a substantial profit.

12.2 Capacity as a Basis for Future Competitiveness

Although the operational analysis, coupled with the carriers' financial performance, implies that LCCs seem to be equipped with a greater competitiveness than the FSNCs, there are a number of other factors clearly indicating that there is a future for the FSNC model as well. The figure below present the ASK, RPK and PAX numbers accounted for by the different case airlines, which can be seen as an indicator of the capacity served by the different carriers.

Figure 20 - Operational Capacity and Passengers. ASK and RPK in billions, PAX in millions.



Source: Own creation based on annual reports and Airline Profiler.

This figure clearly depicts that the FSNCs account for a substantial part of the capacity in terms of ASKs and RPK, and market share in terms of passengers carried compared to the LCCs. Furthermore, it is also evident that the LCCs are not able to serve the entire market by themselves in the near future. Although LCCs have increased their share of the market at the expense of the FSNCs in recent years, their high aircraft utilization, load factors, and labor productivity indicate that the LCCs already exploit both their fleet and their workforce to the fullest. Accordingly, there seems to be a basis in terms of capacity and market share that can be used as a foundation for the FSNCs future competitiveness, as long as its combined with an enhanced emphasis on cost efficiency.

12.3 Low-cost Challenges Moving Forward

The challenges for the LCCs going forward will be to continue to expand while simultaneously maintaining their cost efficiency. In that regard, is noteworthy that easyJet and Norwegian operate with a fairly similar unit cost, despite vast size differences in terms of PAX, ASKs and fleet size. As depicted in Figure 20 above, easyJet carries almost four times as many passengers, produces three times the amount of ASKs, as well as operating three times as many aircrafts. Thus, a similar unit cost between the two carriers underlines both the difficulties of achieving substantial economies of scale in the industry, as well as the potential effects of growth, where an increase in size can be associated with an increase in complexity, and thus possibly making it more difficult to operate cost efficiently. Therefore, it will be interesting to see whether Norwegian are able to maintain their comparatively low labor costs, or possibly an even further reduction through outsourcing some parts of the expensive Scandinavian labor force. Considering their historic order of 222 aircrafts in total from both Boeing and Airbus in 2012, they seem to be heavily committed to expanding their operations, whilst maintaining or reducing their cost base. This initiative represents an enhanced emphasis on flexibility within their operations, both in terms of destinations and in terms of fleet heterogeneity. As outlined in the analysis, the implications of emphasizing flexibility seem to have negative repercussions with regards to cost efficiency. However, as LCCs tend to couple their vast amount of destinations with a fairly limited flight frequency, their high load factors may still be attainable. Moreover, as long-haul operations in general are associated with cost benefits, especially in terms of fuel consumption, and the production of a large amount of ASKs, Norwegian might be able to maintain their cost efficiency, if they are able to maintain or reduce labor costs from the current level. Whether the other LCCs follow in Norwegian's long-haul footsteps, or choose to focus their expansion within the European short-haul market, remains to be seen. Nevertheless, it appears that both the FSNC and the LCC model have a future, although the FSNC' operational emphasis is in need of significant alterations. Accordingly, the airline industry is now faced with an exciting and decisive period.

13 Discussion

In this section, a critical assessment of the findings presented in this thesis, as well as the limitations related to our approach, will be outlined.

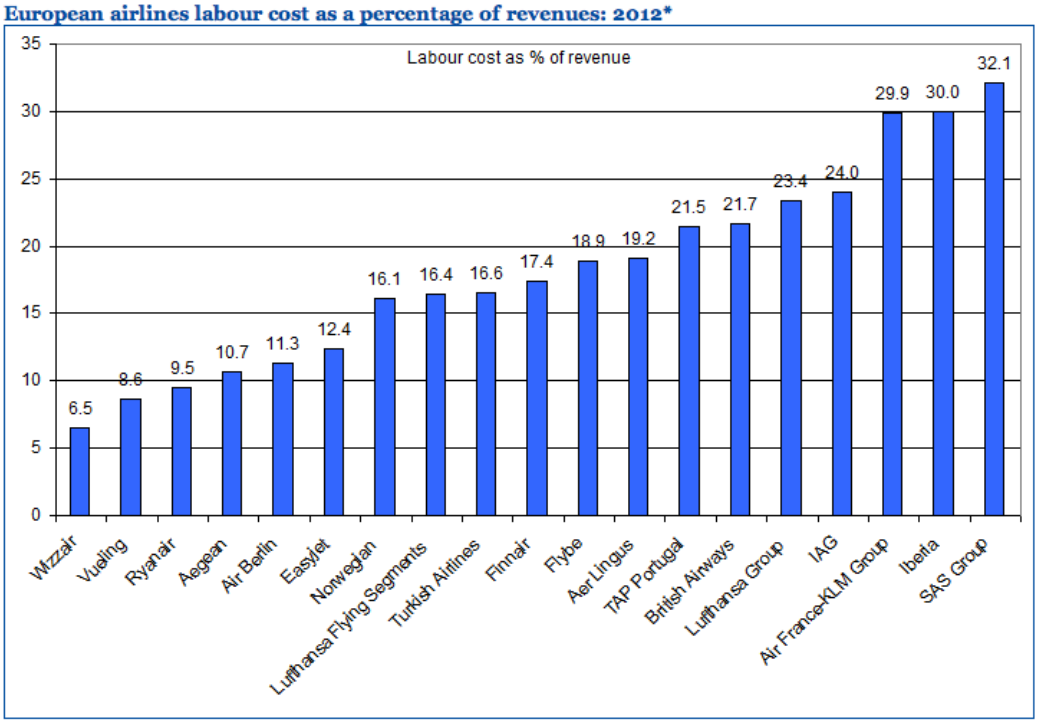
The aim of this thesis has been to analyze how different airlines, both full service network carriers and low-cost carriers, emphasize diverging aspects of airline operations in order to enhance their competitiveness. The use of a multiple case study based on secondary data sources allowed for a comparison within and across the two business models, providing a vast amount of information. The sample case airlines that were used as a basis for the analysis are believed to represent different variations of the two business models. As demonstrated throughout this thesis, these airlines seem to emphasize diverging aspects of airline operations, which in different ways can be said to influence their competitiveness. However, although a multiple case study allows for a thorough investigation, the nature of this approach also means that it is not possible to generalize directly from the findings in the sample investigated to the population as a whole. Moreover, as we did not analyze data for successive years, we are unable to further substantiate the findings in this thesis through the possible identification of trends with regards to recent years' operational emphasis and corresponding financial performance. Nevertheless, the aim has not been to make absolute statistical generalizations, but rather to enhance the understanding of the link between diverging operational emphasis, the various internal and external effects, and the subsequent influence on competitiveness. On a last note, the varying degree of available information between the different case airlines somewhat complicated the process and made it more challenging to include all the measures we wanted in an analysis.

In hindsight, it would have been interesting to supplement the use of secondary data sources with primary data in the form of interviews with operation managers from the different case airlines. This would have given us the opportunity to gain an insight to the rationale behind the different case airlines' diverging emphasis within the different dimensions, and get a grasp of how the direction of their emphasis would develop in the future. However, due to the magnitude of such an approach, as well as the difficulties of gaining access, this was considered to be too comprehensive for a thesis.

14 Appendices

Appendix 1: CAPA graph

European airlines labour cost as a percentage of revenues: 2012*



*2011 for TAP Portugal. 2012 financial year ends for all others as follows: Ryanair, Flybe, Wizz Air to Mar-2012; easyJet to Sept-2012; SAS to Oct-2012; Lufthansa, Air France-KLM, IAG, Turkish Airlines, Norwegian, Vueling, Aer Lingus, Finnair, airberlin, Iberia, British Airways to Dec-2012.
Source: CAPA – Centre for Aviation analysis of airline company financial and traffic statements.

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