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ELECTRONIC SERVICES AS A CREATOR OF COMPETITIVE ADVANTAGE IN CONVENTIONAL SCHEDULED AIRLINES

ABSTRACT

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Electronic services have not yet been studied from the airline industry's point of
view at all. This research starts to study this subject by studying how a conven-
tional scheduled airline can achieve competitive advantage by providing elec-
tronic services for its passengers. This is done by following a constructive ap-
proach. In the beginning of the research, some general knowledge is acquired
by analyzing electronic services of 13 airlines. This is followed by a literature
review after which the airline electronic service model is created. Finally, the
model is validated by interviewing three airline electronic business specialists.

The valid model describes the important components of an electronic service
provision. The important background factors are an airline's strategy, e-
business models, customer relationship management and network partners. In
addition to this, several features of electronic services are validated. It is also
confirmed that passengers' expectations and adoption should be important is-
sues when providing electronic services. The special needs of different passen-
ger groups should also be taken into account as well. The main role of electronic
services is to support the actual travel process of a passenger.

As a result, this research reveals that an airline can reduce costs, can create
switching costs and lock-in, and further, can create competitive advantage by
providing electronic services for its passengers. This requires, however, taking
all above mentioned issues into account.

KEYWORDS: airline, electronic service, competitive advantage, value creation

TIIVISTELMÄ

Lehtinen, Pekka Tuomas

Sähköiset palvelut kilpailuedun luojana perinteisissä reittiliikennettä harjoitta-vissa lentoyhtiöissä / Pekka Lehtinen

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105 p.

Tietojärjestelmätieteen pro gradu –tutkielma

Sähköisiä palveluita ei ole tutkittu lentoyhtiötoimialan näkökulmasta vielä lainkaan. Tämä tutkimus pyrkii käynnistämään kyseisen alueen tutkimuksen tavoitteenaan selvittää kuinka perinteinen reittiliikennettä harjoittava lentoyh-tiö pystyy saavuttamaan kilpailuetua tarjoamalla sähköisiä palveluita matkus-tajilleen. Konstruktiivista tutkimusotetta seuraten tämä tutkimus kartoittaa aluksi 13 lentoyhtiön olemassa olevat sähköiset palvelut, tutustuu tämän jäl-keen kirjallisuuteen ja luo lopuksi lentoyhtiöiden sähköisten palveluiden mal-lin. Lopuksi malli validoidaan haastattelemalla kolmea lentoyhtiön sähköisen liiketoiminnan asiantuntijaa.

Luotu malli kuvaa sähköisten palveluiden tarjoamiseen liittyvät tärkeät kom-ponentit. Merkittäviksi taustatekijöiksi havaitaan lentoyhtiön strategia, sähköi-sen liiketoiminnan liiketoimintamallit, asiakkuuden hallinta ja verkostokump-panit. Itse sähköisistä palveluista havaitaan useita tärkeitä piirteitä. Matkustaji-en odotukset ja heidän kykynsä omaksua sähköisten palveluiden käyttö tode-taan merkittäväksi tekijäksi. Tämän lisäksi erilaisten matkustajaryhmien tarpei-den huomiointi havaitaan tärkeäksi. Sähköisten palveluiden keskeisimmäksi tarkoitukseksi todetaan matkustajan matkustusprosessin tukeminen.

Tuloksena tutkimus toteaa, että tarjoamalla sähköisiä palveluita matkustajilleen lentoyhtiö pystyy vähentämään kustannuksia sekä luomaan vaihtokustannuk-sia ja lukitusta saavuttaen näin kilpailuetua.

AVAINSANAT: lentoyhtiö, sähköinen palvelu, kilpailuetu, arvon muodostus

CONTENTS

FIGURES

TABLES

1 INTRODUCTION

The airline industry pioneered many principles of electronic business by, for example, introducing the first business-to-business electronic information exchange and also industry-wide electronic marketplace (Smith et al. 2001). Even if this happened quite a long time ago, the airline industry is still going strong in the field of electronic business. Today, when technology has developed a lot and the Internet has become one of the major issues in business, the airline industry has developed several new ways to take advantage of new technologies.

Currently, airlines offer their passengers several kinds of electronic services: Tickets can be bought from airline's website, physical tickets are no more needed and check-in can be done with one's mobile phone. In several cases, a passenger can reserve a rental car, a hotel room or even a museum ticket in the destination while reserving the flight ticket in the web store of an airline. Timetables can be browsed with one's mobile phone and flight status information can be received as an SMS-message. As these are just few examples, it's still quite clear where all this is going to. Electronic channels have become a remarkable factor in the airline business.

Whereas electronic business in general is making business through electronic networks, *electronic service (e-service)* is providing a service through electronic networks. So, the approach is very different. The concept of electronic service is still rather new and the amount of research about electronic services is quite limited. This makes the whole area still quite unknown. From the airline industry's point of view, there does not seem to exist any proper research about electronic services at all. The same is true regarding to other transportation industries. As a result, there is no theoretical and scientific backup for the provision of electronic services in the airline industry.

The purpose of this research is to start studying electronic services from the airline industry's point of view. The major objective of the research is to create a valid model that would describe the important factors in the provision of elec-

tronic services in the airline industry. The examination is done from competitive advantage's point of view which means that the focus is rather strategic. The scope of the research is *conventional scheduled airlines* which are airlines that offer their passengers scheduled air transport services and also other value adding services. The reason for this limitation is that the service concept of conventional scheduled airlines is ideal for the topic.

The research problem of this research is the following:

How a conventional scheduled airline can achieve competitive advantage by offering electronic services to its passengers?

The sub-research problems are the following:

What kind of electronic services conventional scheduled airlines currently offer for their passengers?

What are the factors that are needed to be taken into account when providing electronic services?

The research follows a constructive approach. This means that the objective of the research is to construct an innovative model. According to the approach, some basic knowledge is first achieved. This is done by reviewing literature and making an empirical review to the electronic services airlines currently offer. This phase is followed by the actual innovation phase, constructing the airline e-service model. The final phase of the research is proving the validity of the construction. This is done by making three focused interviews for electronic business specialists of two airlines (a weak market test).

As a result, the research finds out that a conventional scheduled airline can achieve competitive advantage with electronic services through cost savings and by creating switching costs and lock-in for passengers. However, this requires understanding and careful planning of several issues. These issues include an airline's strategy, e-business models, customer relationship management, network partners and several features of electronic services. In addition

to this, the development of electronic services has to begin with an analysis of passengers' expectations, needs and an ability to adopt new services. An important issue is also the special needs of different passenger groups and the way an airline chooses to serve them. By taking all these issues into account, an airline can create a service concept that brilliantly combines traditional and electronic services together which helps them to differentiate from competitors and to achieve more competitive advantage.

The structure of the research is the following. First, chapter 2 presents essential key concepts. This is followed by chapter 3 that studies the airline industry in general. Chapter 4 presents an empirical analysis that reveals electronic services currently offered by airlines. Chapter 5 studies the creation of competitive advantage analyzing also the components that create value for a customer in electronic business. Chapter 6 studies services and special features of electronic services. Chapter 7 presents the airline electronic service model and its components. Chapter 8 presents the validation of the model. Finally, chapter 9 concludes the research and presents brief results, limitations of the research and suggestions for further research in this topic.

2 DEFINITIONS OF KEY CONCEPTS

This chapter defines the key concepts used in this research.

2.1 Conventional Scheduled Airline

Term "conventional scheduled airline" refers to normal traditional airlines that operate by pre-planned routes and schedules. The term is presented by Doganis (2001, 160) and the major aim of the term is to create difference between conventional airlines and the quite new phenomenon, low-cost airlines.

According to Doganis (2001, 142), *low-cost airlines* base all their operations on minimizing costs. Typical features of these airlines are high-frequency, scheduled, point-to-point short haul services with low simple fares that are made possible with very low costs. These low costs are enabled by using single aircraft type with high-density seating and high daily usage. Airlines also use secondary and less congested airports to reduce costs related to airport usage and to enable shorter turnaround times and higher punctuality. Also in-flight catering and entertainment is typically minimal. Cost reductions are also sought by bypassing completely all travel agents and selling all their services themselves directly to a customer.

By Doganis' definition of low-cost airline, a distinction between low-cost airlines and conventional scheduled airlines can be made. As conventional scheduled airlines are basically just the opposite of low-cost airlines, it can be concluded that *conventional scheduled airlines* are airlines that offer scheduled flight services and also offer several value adding services in addition to the flight itself. Whereas low-cost airlines' service concept is typically very minimal, conventional scheduled airlines offer typically a wide variety of different kind of additional services.

2.2 Electronic Service

Rust & Kannan (2003) define *electronic service* (e-service) as "the provision of service over electronic networks". However, because of the youth of the concept, there seems exist a wide range of different kinds of definitions. For example, De Ruyter et al. (2001) define electronic service as "… an interactive, content-centered and Internet-based customer service, driven by the customer and integrated with related organizational customer support processes and technologies with the goal of strengthening the customer-service provider relationship." Even though there currently does not exist internationally accepted definition of electronic service, the main idea is, however, providing service over electronic channels. In this research, electronic service refers to any electronic interface offered at an airline passenger.

2.3 Competitive Strategy and Competitive Advantage

Competitive environment sets the basic rules for any industry. It determines the critical factors to succeed on an industry and creates pressure for the companies operating on it. According to Porter (1985, 4-8), the main competitive forces are power of buyers, power of suppliers, threat of substitutes, barriers to entry and competitors. These factors set the basic environment in which companies typically operate. (Porter 1985, 4-8)

Competitive strategy means finding a way to compete against the competitive forces. It is like a tool that can be used to obtain a sustainable and permanent position in an industry. In other words, competitive strategy can be seen as a tool to guide a company successfully through competitive environment. The creation of competitive strategy requires an analysis of both the long term profitability of an industry and also the actual internal competition of an industry. Because both of these areas are dynamic, the creation of a competitive strategy is a continuous process which requires a continuous monitoring of an industry. An important point regarding to competitive strategy is also that by using com-

petitive strategy a company can also shape the industry it is in. This means that a company may influence on the competitive forces by using a competitive strategy. (Porter 1985, 1-2)

Competitive advantage, on the other hand, is the objective that a company tries to reach with the usage of competitive strategy. It bases on the value a company can create for its customers with fewer costs than was used to produce the value. As a result, to achieve more value and competitive advantage, a company should produce either a product that offers same advantages than its rivalry products with lower price or a product that offers greater advantages with higher price. Basically, the two ways to achieve competitive advantage are cost leadership and differentiation. (Porter 1985, 3)

3 THE AIRLINE INDUSTRY

The airline industry can be characterized as an industry with marginal and very cyclical profits. Since the 1970s, every five to six years profitable phase has been followed by two to four years of declining profits which can be clearly seen in FIGURE 1. The instability of the industry is basically a result of constant changes and constraints in the field of regulations, operations and used technologies. (Doganis 2001, xi) Also different kinds of catastrophes such as wars or diseases, for example, typically influence the industry. The recent examples of these are, for example, the terrorist attack in New York in 2001, the Iraqi war and the SARS-syndrome, which have all influenced the industry. Another important factor that influences the industry is world economy. International trade in goods and services and other commercial activities have a direct impact on the demand for air travel and air freight. This makes the whole industry quite unstable. (ICAO 2005)
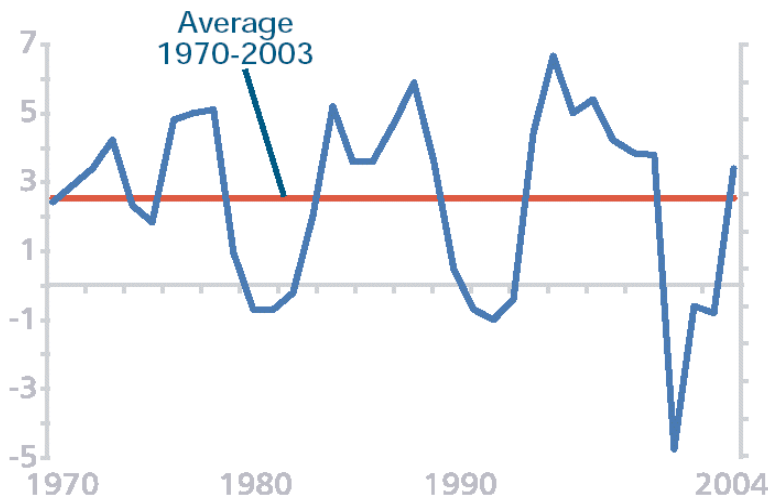

FIGURE 1. Long term operating profitability of the airline industry as a percentage of operating revenues. (IATA 2004).

The features that have created the basis for the current airline industry are liberalization, alliancing, privatization, low-cost airlines and electronic commerce.

Liberalization refers to changes in regulative environment in operations between different countries. Alliancing refers to the trend of forming large worldwide airline alliances. Privatization means movement away from state-owned airlines to privately owned airlines and low-cost airlines are new airlines operating with totally different concept than old airlines influencing heavily on the competition in the industry. Electronic commerce has become a major tool in creating more efficient and cost saving ways to handle transactions with customers. (Doganis 2001, xi) In addition to this, also different kinds of electronic services have become common. These features, as well as the general statistics of the industry, will be presented in the following chapters to create the basics for the further research of the airline industry's electronic services.

3.1   The Airline Industry Statistics

According to International Civil Aviation Organization (ICAO) annual review of civil aviation 2004, there were approximately 900 air carriers offering scheduled international and/or domestic services in the end of 2004. 812 of these carriers offered scheduled passenger services. (ICAO 2005)

The estimate of total scheduled traffic carried by all ICAO member state airlines during 2004 is 460,4 billion tonne-kilometres, which is a combined measure of passengers, freight and mail traffic that takes into account the flown distance. Total amount of carried passengers was 1,887 billion. Geographically 34 percent of all scheduled air traffic is carried by the airlines of North America. However, 36 percent of all international scheduled traffic is carried by the airlines of the European region. Approximately 114 airlines or 13 percent of the total of 900 carries about 90 percent of all scheduled traffic measured in terms of tonne-kilometres. Similarly, 12 percent of the total of 600 airlines operating international scheduled services carries 90 percent of all scheduled traffic on international routes. The top airlines measured by total tonne-kilometres performed on scheduled international and domestic services are American Airlines, United Airlines, Lufthansa, Delta Airlines and Air France. In international services the

top carriers are Lufthansa, Singapore Airlines, British Airways, Air France and Cathay Pacific. The top countries both in terms of total tonne-kilometres and total passenger kilometers are the United States, Germany, China, Japan and the United Kingdom. (ICAO 2005)

Economically, according to preliminary estimates, world's scheduled airlines experienced an operating profit of 0,9 percent of total operating revenues in 2004. This shows a remarkable rise from the loss of 0,5 percent in year 2003. The total operating revenues are estimated at $374,3 billion and the net result at loss of $4,2 billion. (ICAO 2005)

3.2   Bilateralism and Liberalization

One major character of the industry is its history of bilateralism – regulative agreements set between two countries. Until the mid 1980s most airlines were either fully or majority owned by their national governments. (Doganis 2001, 184) As a result, each nation domestically set constraints for their own airlines regulating their market access, pricing policy, output decisions and also competition. International operations based, instead, on bilateralism and political international relationships. Typically two countries agreed on the air services between them and set constraints for points served, traffic rights, prices, designation of airlines, capacity and flight frequencies. (Doganis 2001, 19-20)

In 1978, the United States opened discussion for deregulation and it resulted in the first "open market" agreement with the USA and the countries flying there. Following the USA, also European countries started soon making their own open market agreements and by 1990 several agreements were made around the world. While industry was now a lot more liberal than it used to be, several limitations still existed. In 1992, the USA and the Netherlands signed the first "open skies" agreement which deleted all major restrictions between these two countries. Few years later, the USA signed similar kind of an agreement with nine small West European countries but the major breakthrough happened in

1996 when first big market in Europe, Germany, signed a deal with the USA. This started the major development and by early 2000 approximately 35 new agreements with the USA were made. (Doganis 2001, 23-37)

In contrast to the bilateral country-to-country agreements of the USA, Europe started creating their own multilateral agreement, which was initially set between the countries of the European Union (EU). As a result, after few steps, European Union became an area in which airlines could operate totally freely between all European Union countries and Norway and Iceland. This was the major issue to affect the birth of low-cost airlines in Europe. (Doganis 2001, 38-43) However, even though Europe was now a free aviation area, the traffic outside Europe based mostly still on bilateral agreements. The major advance happened in 2003 when the 5th Worldwide Air Transport Conference approved the declaration of global principles for air transport liberalization. The conference also agreed on different policy guidance materials and, most importantly, specific recommendations on air carrier ownership and control. This was the major step towards world-wide liberalization. (ICAO 2004)

3.3 State-owned Airlines and Privatization

Historically, majority of airlines have typically been state-owned. During the 1980s, however, mainly because of the ongoing liberalization in regulations, privatization became a trend of airlines. A change from tight governmental control to open market made airlines move towards competitiveness and customer-orientation which was practically impossible under government's control. Hence, airlines were started to be privatized to be able to compete in this new and freer environment. (Doganis 2001, 184-185) In 2001, there existed approximately 40 100 % government owned airlines, approximately 30 more than 50 % governmental owned airlines and approximately 15 less than 50 % governmental owned airlines (Doganis 2001, 187). According to ICAO (2005), in 2004, the trend towards partial or full privatization continued but at a slower pace than earlier.

3.4 Alliances

In the late 1990s, several airline alliances were formed probably as a response to the escalating competition and structural changes in the industry resulting from the liberalization. The advantage sought by forming alliances were marketing benefits of large scale and scope, cost synergies and reductions, reduced competition and a bypassing regulatory barriers which created advantage for large airlines and safety for the smaller ones. (Doganis 2001, 98)

According to Doganis (2001, 65-66), airline alliances can be divided into strategic alliances and marketing alliances. In strategic alliances partners pursue for a joint business objective together by using, for instance, same airport terminal facilities, aircraft maintenance bases, aircraft, staff, traffic rights or capital resources. In marketing alliances, on the other hand, partners may have codeshare agreements (two or more airlines use their own flight codes or a common code on a flight operated by one of them), joint frequent flyer programs or block space agreements (block space is a time reserved for a flight at a congested airport). (Doganis 2001, 65-66)

At the end of 2003, there were over 600 commercial agreements between airlines worldwide. These agreements contained codesharing, blocked space, marketing cooperation, pricing, inventory control, frequent flyer programs, schedule coordination, sharing of offices and airport facilities, joint ventures and franchising. (ICAO 2004) According to a quick peak in the www in September 2005, the biggest global alliances seem to be Oneworld, Skyteam and Star. Oneworld is formed by 8 airlines covering 595 destinations in 132 countries. Star Alliance is formed by 16 airlines and they cover 795 destinations in 139 countries. Finally Skyteam is formed by 9 airlines covering 684 destinations in 133 countries. As also ICAO (2004) says, it is quite obvious that alliances are still evolving and the relations are becoming more intertwined and complex. This is an essential challenge for airlines in future.

3.5 Low-cost Airlines

One phenomenon that has shaped the airline industry and its competition enormously during last ten years, is low-cost airlines. As defined in chapter 2.1, low-cost airlines base all their operations on minimizing costs and offering rather simple, "no-frills", service. The concept was originally launched by Southwest Airlines in the United States already in early 1970s but the real boom happened approximately in the mid 1990s. At that time, several new low-cost airlines were launched in the USA and at the same time, mainly because of liberalization, also Europe experienced an arrival of several new low-cost airlines. In Europe, less than three million passengers traveled with low-cost airlines in 1994 but in 1999 the same number was already 17,5 million. Probably one of the greatest changes low-cost airlines have created has been making air transportation available for practically everyone due to low prices. This means that low-cost airlines have been able to find totally new customers, who have been using ground transportation before. The impact for conventional airlines has also been quite significant. According to Doganis (2001, 126), the survey made for British leisure passengers in 1999 revealed that a much higher proportion of people would recommend low-cost "no-frills" airlines than conventional airlines. The interviewees kept many factors in low-cost airlines such as leg room, comfort, catering and cleanliness of cabin as the worst but in terms of value for money low-cost airlines were found as the best. This clearly shows that a huge group of people is ready to travel a bit more uncomfortably to be able to fly more cheaply. (Doganis 2001, 126-128)

According to ICAO (2004), the rapid growth of successful low-cost carriers continued in 2004. Also "an airline in airline" concept got more adoption. This concepts means, that existing conventional airlines start a new low-cost brand airline in order to keep passengers flying with their company. The low-cost phenomenon has obviously created lots of pressure for conventional airlines and they have been forced to search new ways to achieve competitive advantage.

An interesting point is also that some low-cost carriers have already started to enhance their service quality by, for example, offering in-flight entertainment, business class, own lounges at the airport and some electronic services. This obviously creates even more pressure for conventional airlines.

3.6 Electronic Commerce and Electronic Services

The growth of the Internet in the end of the 1990s affected heavily also the airline industry among other industries. By the grown amount of personal computers and the Internet usage, airlines started to create their websites which eventually led into putting their timetables into the web and finally building their own web stores. By the development of technology, airlines continued developing their web services even more and currently the offered services are very versatile.

According to Doganis (2001, 166-172), the main drivers for airlines building electronic systems have been cutting distribution costs, disintermediation, increasing marketing power and making pricing more dynamic, interactive and market-focused. Cutting distributions costs means reducing costs of ticketing, sales and promotion. These costs used to represent approximately 17-18 percent of airlines costs in the end of 1990s and, hence, cutting them by electronic systems has obviously been quite reasonable. Disintermediation refers to bypassing travel agents and other intermediaries by selling tickets directly at customers. This again reduces costs and also makes the whole sales process easier for an airline. Marketing power is increased by the nature of the Internet and the key element here is the website of an airline. An airline can consider its website as the main creator of its public image as the site is available to any person anywhere in the world who has an access to the Internet. Via the website, an airline can offer its customers many kind of information about its products, services or practically anything. Also personal relationships can be created by offering, for instance, customer loyalty services or other electronic services. By creating its website as a centre of communications and services, an airline can

gain customer loyalty and enhanced branding and image. Finally making pricing more dynamic, interactive and market-focused refers to the ability to change prices more quickly by the changes of market. As the pricing is done by electronic systems it can also be communicated quickly via electronic networks. The Internet also enables totally new ways in pricing such as, for example, selling cheapest discount tickets via the website of an airline.

The drivers presented by Doganis obviously focus on early electronic commerce systems that were relatively simple and offered basically in the www. However, the current electronic business systems offered by airlines are a lot more complex and versatile, and this is why the term electronic commerce does not cover them widely enough. Instead, it would be reasonable to use the concept of electronic services, which is a wider concept covering different kind of electronic networks. Of course, there still exist traditional electronic commerce elements in airlines such as web stores, but the concept of electronic services covers them and also many other areas of electronic systems. So, from this on, this research uses the concept of electronic services to describe all electronic systems offered by airlines to airline passengers.

In his writings in 2001, Doganis obviously sees the future of electronic services in the airline industry. According to Doganis (2001, 182-183), the new way to do business in the airline industry is to utilize electronic business systems to offer customers extra value by collecting customer data and then using it in highly targeted marketing. First, an airline should find a way to collect customer data. One proper way Doganis suggests is to use frequent flyer membership information which should be added with different information including travel history and preferences in traveling. After this, a database containing customer profiles should be created. Based on this data, an airline should start finding ways to offer more value to specific passengers basing on their earlier behavior and preferences. In other words, the essential concept behind these electronic services is customer relationship management (CRM). By focusing at specific cus-

tomers, an airline can offer extra value for them, and hence, gain customer loyalty and competitive advantage. By this far, it seems that this is what several airlines have already done.

An important aspect in the future of the industry is also the role of electronic business and services. Doganis (2001, 178-181) sees three different approaches for airlines to develop their electronic business strategy: The first strategy would be to continue in quite a traditional way without offering anything special. This would mean using all distribution channels including travel agents, global distribution systems (GDS), telephone sales and the own website. The website's role would be selling only company's own products while all more complex travel packages would have to be purchased from other travel agents. The website would also be constructed to meet especially the needs of primary customers, not so much the needs of other customers. This option is clearly quite unrealistic as the current situation already shows that this option is not adopted by airlines. The second strategy would be to create an ultimate online travel shop that would offer a complete set of different kind of travel possibilities. The service would provide possibilities to reserve hotels, rental cars or entertainment, for example, or different kind of services for business travelers such as ability to track travel expenses or monitor travel policies. The service offering would actually be only a question of innovation. The creation of such a service concept would probably require teaming up with an Internet service creator/operator who could handle the actual operation of the service. The third strategy would be teaming up with some existing online travel services provider and using it with either of the two strategies mentioned above. This option would offer an airline same advantages than the strategy option two but now the airline would not have to take care of the service provision itself. Of these three strategy visions presented by Doganis, numbers two and three seem the most reasonable for conventional airlines in future and actually versions of these can already be seen. These e-business strategies are clearly a new way for

conventional airlines to create a competitive edge in this changing environment of the airline business.

Currently, the amount of research of airlines' electronic services is very limited. Practically, the only research seems to be Jiang's (2003) study of the airline industry's e-business systems in general. In the research, Jiang has considered electronic business especially from competitive advantage's point of view. He presents insights into the development and implementation of the airline industry's e-business strategies and also presents trends of the Internet usage and some e-business models currently used by airlines. Jiang argues that to succeed in electronic business, airlines should fully understand how the Internet and e-commerce affect their business. He also says that airlines should formulate an overall strategy covering IT-infrastructure, design, content, e-commerce systems, marketing and customer service. As a result of his research, Jiang states that the Internet has a great impact on airlines operation and that by utilizing it airlines could achieve competitive advantage. This all seems to support the writings of Doganis.

3.7   Summary

As described in the previous chapter, during last ten years, the airline industry has been influenced by several special factors. Liberalization, privatization, alliancing, low-cost airlines and electronic business have all heavily influenced on the development of the industry. In other words, the industry has been in a constant change. Also electronic business has developed a lot during the latest years. The first electronic systems in the industry were meant to make operations more efficient and to reduce costs. Now, these systems have transferred to more complex electronic services that focus more on improving customer relationships and loyalty. Due to liberalization, airlines have been able to provide and market services more freely and also electronic services are today provided internationally nearly over the world. Alliancing, instead, has created airlines more complex networks which require electronic services also to be compatible

with other systems. Finally, privatization and low-cost airlines have made the competitive environment tougher which has created pressure to create more and more innovative electronic services to gain competitive advantage.

However, achieving competitive advantage with electronic services requires several issues to be taken into account. Doganis (2001, 162-182) already mentioned that the strategic role of electronic services is one of the most important issues in future creation of services. The way how electronic services are used as a part of the whole service concept influences a lot the actual provision of services. From this on, there is actually nothing that could be based on. The amount of earlier research on airlines' electronic services is small and there is no framework that would tell which aspects are the important ones. Hence, the research has to be started from a clean table. First, the following takes a look at the existing electronic services of conventional scheduled airlines trying to find some basis and categorization for the services. This is followed by the actual literature review that will study existing theories and writings about issues that are found and presumed to be essential in the provision of electronic services in the airline industry.

4 ELECTRONIC SERVICES CURRENTLY OFFERED BY CONVENTIONAL SCHEDULED AIRLINES

This chapter presents electronic services that are currently offered by conventional scheduled airlines basing on an empirical analysis that was performed in May 2005. The purpose of this chapter is to create general knowledge about existing electronic services in the airline industry to create some background information for the literature review presented in the following chapters.

The empirical analysis was done by analyzing websites of 13 pre-selected conventional scheduled airlines. The selection of airlines was done by the author without any scientific method. The reason for this is that the purpose was not to get any scientific result, but only to find a maximal number of different kinds of electronic services. Hence, large airlines around the world were selected. The selected airlines were American Airlines (USA), British Airways (UK), China Airlines (China), Emirates (The United Arab Emirates), Finnair, (Finland), Japan Airlines (Japan), KLM (The Netherlands), Lufthansa (Germany), Northwest Airlines (USA), Quantas (Australia), Scandinavian Airlines (Scandinavia), Singapore Airlines (Singapore) and Varig (Brazil). The websites were browsed through and all electronic services described at the sites were noticed.

As a result, quite a big number of different kinds of electronic services were found. The services are categorized into three categories: web-services, mobile-services and functional services and they are presented in TABLE 1.

4.1   Web Services

Web services are services that are offered via the website of an airline. In every case, an airline's website was obviously created to offer a customer all possible information needed about the airline itself and all services provided by it. The websites typically consisted of large amount of information about the company itself, the flight services, destinations and other services offered by the airline. So, it seems that the website is today considered as an important interface

TABLE 1. Electronic services currently offered by conventional scheduled airlines.

Web services	Mobile Services	Functional Services
Reservations: • flight • hotel • rental car • attractions • airport parking • transfers • vacation packages WWW check-in Flight status Offers Frequent Flyer membership Web store Free seat checking Menu selection Lost luggage tracing	Mobile phone services: • SMS & WAP (flight schedules, flight status, check-in, frequent flyer membership) • WAP (reservation alternation, new reservation in case of cancellation, information about airline contacts and lounges) • Voice check-in • Tailored services for Nokia Communicator PDA services: • flight schedules for different devices, flight status, reservation alternation, new reservation in case of cancellation, frequent flyer membership, information about airline contacts and lounges, terminal maps Pager services: • flight schedules for different devices, flight status, reservation alternation, new reservation in case of cancellation, frequent flyer membership, information about airline contacts and lounges	Electronic ticket Check-in kiosk Automatic departure gate

between an airline and its customers. In addition to the static information offered at the websites, several functional services were found.

Each airline offered its flight schedules with a search function on its website. Also online flight reservations were possible in every airline's website. The most common payment method was a credit card but, for example, Finnair offered a possibility to make the payment immediately by using the web bank services offered by the largest banks in Finland. In addition to flight reservations, several airlines offered a possibility to make reservations also for hotels, rental cars, attractions or vacation packages. Most commonly, hotel, rental car and attraction reservation services were provided by some other travel services provides such as Amadeus, Hotelzon, Travelocity, Worldres and WWTE but also some airlines, such as British Airways and Quantas, offered these services under their own name. British Airways was the only airline to offer a possibility to book parking at the airport and airport transfers while Japan Airlines was the only one to offer railway tickets through Travelocity service. Vacation packages were most typically offered by the airline itself. Travel insurances and travel cheques were also offered by some airlines, but these services were provided by other parties. During the flight reservation process, only few airlines promoted or offered any of these additional reservation services. This seems a bit odd as one would think that a passenger could be influenced to book, for example, hotel room or rental car during his flight reservation process. Instead, these services were found only from the navigation menus. However, this cannot be stated for sure, as the reservation process could not be completed without making the real reservation.

Commonly offered service was also www check-in that was most often called "Internet check-in". This service enables checking in for a flight in the website of an airline by using a booking reference number or by logging in to the site with existing username. In typical www check-in service a passenger can select his seat by himself just by clicking the preferred available seat in the seat con-

figuration map. Then, at the airport a passenger can walk directly at the departure gate leaving his luggage at the luggage collection point. American Airlines had also taken advantage of the service by reminding passenger of the possibility to reserve a hotel room, rental car, travel cheques or travel insurance in the check-in page. Several airlines offered also a possibility to see the flight status information (actual departure and arrival times, gates, or changes at flight schedules) of some particular flight or all flights at the selected airport. Websites were also used to offer different kind of discount tickets in many cases. Some airlines offered discount flights for some particular season but, for example, American Airlines and Finnair sold quick getaway tickets that change every week. Websites were also used to sell concrete products such as airline merchandise or the same products that are sold also during flights. For example, American Airlines and Northwest Airlines sold different kind of airline related products as a typical web store via mail. China Airlines and Singapore Airlines sold, instead, same tax-free products that are available in flight. China Airlines sold products only for people who have a valid reservation. The products could be ordered at the website and they would be delivered and paid in the aircraft. Singapore Airlines, on the other hand, sold products via mail, but to be able to buy them, one must also fly. The products were sold tax free, just like being purchased normally, but they would just be delivered at home. The services that were offered just by one or two airlines were a service to check the amount of free seats on a particular flight, a service to select the food for the reserved flight and a service to trace and track lost luggage.

Another typical set of services on websites was services for taking care of frequent flyer membership. These services required a login and they were used to offer more customized services for a customer. By logging in to the website a customer could update his personal information, set his traveling preferences and frequent routes, check collected reward points, check previous flights or check reservations that have been done. Also some special services such as money calculators were offered for registered users. After login all the website

typically noticed the login and offered more customized services, for example, when making reservations.

The outlook of websites varied greatly and navigation and categorization of different functions and services was implemented in very different ways. A typical front page of a website consisted of fields for flight search, different kinds of news and offerings, navigation menus and a possibility to login to the site. Some airlines offered also some other services on the front page such as an ability to check flight status and an ability to do check-in, for example. Generally, it could be argued that a typical outlook of a front page was quite messy as the amount of information was so large. The navigation was typically implemented with one basic navigation menu that included all major functions and services categorized under approximately 5-10 main categories. In addition to this some airline offered also some quick links for some most important electronic services. To be mentioned, the navigation logic offered by Finnair was the most unique one. Where other airlines' websites' navigation was similar for all the users, Finnair's navigation logic was based on the role of a user. When a user arrived at the site, the leisure traveler role was automatically selected and all the services and functions available for a leisure traveler were only one click away without entering any navigation menu. Then, if the role was changed to business traveler, again new one-click menu was presented. This logic clearly represents the easiness of using the site and reduces the need for browsing menus.

The way how different services, including electronic services, were combined also varied quite much. In several cases services followed the categorization of the whole site, and hence, certain services were found under a suitable menu. For example, several sites included a menu called "reservations" or something like that, which contained all services related to making different kinds of reservations. Several sites also included menu which was titled "services" or "travel information". This menu typically consisted of different information

and services that relate into the trip itself and contained typically also www check-in and presentations for mobile services. Several airlines, however, offered quick links for some most essential services on the front page. For example, China Airlines offered quite a handy-looking menu for electronic services on the upper side of the front page. From the menu a user could enter online-booking, e-shopping, select food for a flight, make check-in, enter flight schedules, check flight status or order flight status reminder service for a mobile phone. Also Finnair used a quick link called "E-services" on the main page, which led into a presentation of all the electronic services provided by the company. Northwest Airlines and American Airlines, instead, offered all main services on the front page including reservations, check-in, flight status checking and ordering flight status information.

As a conclusion, it seems that electronic services are combined to airlines' service concepts quite well and that they follow the categorization of other functions on websites quite nicely. However, a way to improve the efficiency of these services would be to link them even more together. This means that different services could be promoted, for example, during the reservation process or right after it. According to this analysis, it seems that currently only few airlines do this.

4.2   Mobile Services

Mobile services are services that can be used by portable devices such as mobile phone or personal digital assistant (PDA), for instance. The amount of different kind of mobile services was quite large and the services were also quite versatile. Several airlines, especially the ones at Europe and North America, offered a wide range of different mobile services but, on the other hand, some airlines did not offer any.

The offered mobile phone services included SMS (short message services), WAP (wireless application protocol) and voice services. The services offered by both

SMS and WAP included an ability to check flight schedules or flight status, to receive information of changes in flight schedule or departure gate, to do check-in, and an ability to handle frequent flyer membership. To receive SMS information of changes in flight schedule or departure gate one had to sign up for the service at website either by logging in as a (frequent flyer) customer or by signing up for the service on separate page. Check-in service was provided only by Finnair and Lufthansa and it functioned in the same way than www check-in but it was just offered mobile. Finnair's service could be used with SMS and Lufthansa's with WAP. Handling frequent flyer membership included typically possibility to check reward points, to receive different kinds of offers or to upgrade flying class. The services offered only by WAP included an ability to alter reservation or to make a new reservation in case of flight cancellation, and possibility to obtain different kind of information about the airline such as contact information in different countries or the location of lounges at the airport, for example. The voice services included a voice check-in service offered by Lufthansa and Scandinavian Airlines. In Lufthansa's service a passenger was to make check-in by calling at Lufthansa's service and picking up the boarding card at the airport. In Scandinavian Airlines' system, instead, the service was automatic and the service recognized a passenger's speech. As the only airline, Finnair offered also some specially tailored services for Nokia Communicator mobile phone which is widely used phone by business travelers. These services included a flight schedule search, www check-in, frequent flyer services and also some services for special business traveling package (multifly.e) offered by Finnair.

The offered PDA services consisted mostly of offering flight schedules in suitable format for different PDA devices but Northwest Airlines offered also a possibility to check the flight status, alter reservation or to make a new reservation in case of flight cancellation, to handle frequent flyer membership, to see the location of lounges at the airport, to see terminal maps and to find contact information. These services were especially tailored to function with different

PDA devices. Another specialty of Northwest Airlines was the offering of pager services. These services were the exact same services than the PDA services excluding graphical maps and flight schedules.

4.3 Functional Services

The functional services are services that offer some kind of functionality in the flight traveling process. The offered functional services include electronic ticket (e-ticket), check-in kiosks and automatic departure gate. Electronic ticket is a flight ticket that exists only in electronic format. When a passenger makes the reservation via any reservation channel, the reservation exists only in the information system. When the passenger arrives at the airport, the reservation is identified by a personal identification card or a frequent flyer membership card, for example. This reduces ticketing costs from an airline and makes also traveling easier for a passenger. From analyzed airlines, every one offered electronic ticket for a limited amount of routes. However, the volume of electronic ticketing is about to rise heavily during following years. According to International Air Transport Association (IATA), the objective is to obtain 100% usage of electronic ticketing by the end of 2007. Currently the amount of electronic ticket usage is 29% among IATA member airlines but, for example, Finnair reported in the end of May 2005 that 59% of its scheduled services' tickets are electronic.

Check-in kiosks are self-service kiosks at an airport with which passengers can make their check-in by themselves. From analyzed airlines a majority reported offering check-in kiosks at their major airports. The situation with check-in kiosks is quite similar to electronic ticket. According to IATA press release (30 May 2005), electronic check-in kiosks create great saving for the industry, and hence, IATA states that: "We are readying ourselves by developing standards and a common interface for passengers and pushing this out to key airports". So, check-in kiosks are quite likely to become more common.

The automatic departure gate (eGate) offered by Finnair, seems to be quite unique in the industry. The gate is a concrete gate set at the departure gate and a passenger can walk right through it without stopping as the system registers the passenger being boarded. The automatic gate is available only at some domestic airports in Finland for passengers who has Finnair's business traveling package (multifly.e) in use. The system naturally requires the multifly.e card being along as the systems reads the chip in it.

4.4   Summary

As a conclusion, it seems that conventional scheduled airlines offer currently a wide range of different kind of electronic services. This analysis categorized them into three categories: web services, mobile services and functional services. The most common web services were an ability to find flight schedules and to make different kinds of reservations. The most typically reservations could be made for flights but several airlines also offered a possibility to make reservations also for hotels, rental cars, attractions, parking, transfers and vacation packages. These additional reservation services were, however, most typically offered by some travel agency partner. Other common web services were www check-in, flight status checking, different offerings, and frequent flyer membership services. Also some more unique services such as web stores for other goods, menu selection, free seat checking and lost luggage tracing were offered. Mobile services included typically different kinds of mobile phone services as well as services for PDA-devices and pager and, interestingly, they were offered mostly in Europe and in the northern America. Functional services included electronic ticket, that was offered by every airline and that will obviously become a commodity, check-in kiosks and electronic departure gate.

According to this analysis, it seems that the website of an airline has become an important interface between a customer and an airline. First, a customer can become a user of a website or a member of a frequent flyer program by registering at the site. Then a customer can personalize his services and can make dif-

ferent kinds of reservations and also track those reservations. Before the actual travel a customer can also find lots of different kind of information of the travel and can learn about different kinds of helping services such as mobile services or other electronic services. During the travel, a customer can utilize the website by making his check-in online before leaving home or by a laptop. After the actual travel, a customer can finally track probably lost luggage, see his frequent flyer points or update his customer profile to make the next trip easier. Accordingly, it seems that a website plays a remarkable role in the whole traveling process. This makes it clear that airlines should really put efforts on making the websites as a part of the whole travel experience and should include all electronic services into this wholeness. In several analyzed cases, this was not yet fulfilled as websites were unclear and did not really focus at supporting the travel experience of a customer.

Naturally, the service concept including traditional and electronic services depends heavily on the strategy followed by an airline. If an airline wants to offer full travel services, it probably needs to offer a wide range of different kinds of reservation services and many supporting services needed to handle those reservations. If an airline wants to focus, instead, at offering an efficient flight travel experience, it should probably focus more at providing such electronic services that support the travel itself. In any case, electronic services should be used in such a way that they would support the selected strategy as well as possible.

5 COMPETITIVE STRATEGIES AND VALUE CREATION

This chapter starts the actual literature review of this research. The aim of this chapter is to study how the usage of electronic services is supported by the theories of competitive strategies and value creation. First, chapter 5.1 presents competitive strategies which are also discussed from the airline industry's point of view. Then chapter 5.2 analyzes value creation and presents value components of electronic services. Chapter 5.3 finally makes the summary.

5.1 Competitive Strategies

According to Porter (1985, 11), the basis of above-average performance of a company in the long run is sustainable competitive advantage. This can be achieved by either cost leadership or differentiation, which are the two basic types of competitive advantage. All operations performed by a company can be seen as a part of these two basic types.

To analyze the ways of achieving competitive advantage, Porter has created a theory of three generic strategies for achieving above-average performance in an industry (FIGURE 2). The theory bases on the two basic types of competitive advantage which are combined with company's operation scope.

COMPETITIVE ADVANTAGE

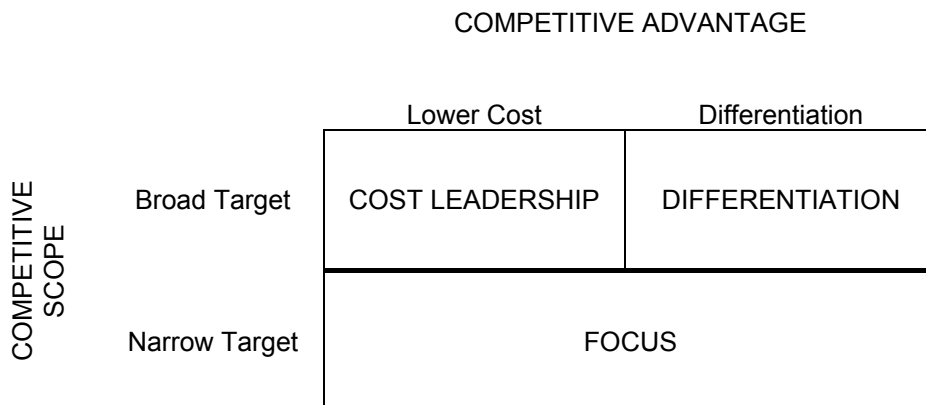|		Lower Cost	Differentiation
COMPETITIVE SCOPE	Broad Target	COST LEADERSHIP	DIFFERENTIATION
	Narrow Target	FOCUS	

FIGURE 2. Three generic strategies. (Porter 1985, 12)

In overall cost leadership strategy, a company's target is to become the low-cost producer of its industry. In practice this means that a company pursues for minimizing its cost in all possible areas of its operations. The source of cost advantage depends heavily on the industry but the sources can be, for example, economies of scale, technology, R&D, low-cost design methods, automated assembly, low-cost labor or efficient training. The main point, however, is that the sources of costs and cost advantage must be found and the costs must be monitored and controlled carefully. A successful cost leadership strategy works as a defense mechanism towards main competitive forces in the industry because a low cost company can achieve higher returns than its competitors. For example, in price competition situations, a low-cost company has an ability to stay profitable much longer due to higher returns. However, a cost leadership must not forget that some amount of differentiation is needed make the product more comparable and acceptable by buyers. Neither must the cost leader forget that the successful cost leadership strategy requires being the cost leader, not just being a company trying to be the cost leader among other companies. (Porter 1985, 12-14)

In differentiation strategy, a company pursues for offering something unique for its customers and charging higher prices for being unique. The uniqueness should be achieved by choosing some attributes that a company finds valued by customers and then trying to make these attributes superior and different from competitors. The attributes can be practically anything that is the part of a company's product such as the product itself, the delivery system of the product or the marketing approach, for instance. The important point, however, is that the attribute must offer some extra value for customers. By offering something unique and superior, a company may sustain differentiation position as long as the costs used of being unique are smaller than the perceived profits. However, a differentiator must also focus at costs, but instead of pursuing for minimizing all costs, a differentiator reduces costs only in the functions that do not affect differentiation. (Porter 1985, 14)

Focus strategy means focusing on a certain buyer group, segment or geographic market. The difference between focus and the two previously mentioned strategies is that whereas cost leadership- and differentiation strategies try to apply their strategy industry wide, focus strategy focuses only on certain segment. This means that inside a certain segment, focus strategy user may also use either cost leadership strategy or differentiation, depending on the situation. A typical segment for focus strategy is such a segment on which competitors are either underperforming or overperforming. In underperforming situation competitors do not meet the needs of some certain segment. This opens a possibility for differentiation focus. In overperforming situation competitors offer, instead, too expensive products. This opens a possibility for cost focus. (Porter 1985, 15-16)

When thinking about Porter's theory from the airline industry's point of view, several features of differentiation can be found in the operations of conventional scheduled airlines. Typically, conventional scheduled airlines try to offer their customers unique product or service, special image or something else to differentiate themselves from other airlines. Today, aircraft are equipped with more and more better seats, amazing in-flight entertainment systems including personal TV-monitors and special in-flight food and drink service. The purpose of this has obviously been to create customers more value during the flight and probably to achieve customer satisfaction and loyalty. Especially when comparing the product of conventional scheduled airlines to the product of low-cost airlines, the differing can clearly be observed. However, when thinking about the competition between conventional scheduled airlines, the situation is a bit more unclear. As Porter presented, the main idea of differentiation is differing from competitors with something unique. Now it seems, however, that all conventional scheduled airlines are offering quite same kind of special features during the flight and that the main idea of differentiation is lost in the competition between conventional scheduled airlines. Today's aircraft are all very modern and comfortable and many airlines offer bigger seats and more leg space.

Personal TV-monitors have become nearly a standard in long-distance flights and food and drink services are quite excellent in every airline. This makes it quite clear that differentiation among conventional airlines is harder and harder with focusing only at the flight itself. Of course it is clear that with great determination on, for example, premium class customers, differentiation can still be obtained, but it has become tough.

Typical ways to offer more value for customers has been frequent flyer reward programs and airline alliances. Frequent flyer programs have been used for several years and they are nothing new anymore. Practically every airline has its own program and the differing value is obviously quite small today. Alliances, on the other hand, are a bit newer phenomenon and they could be seen as one of the current ways to offer differing value for customers. Those airlines who are members of a global alliance can offer their passengers a global network with connections to nearly every part of the world. Also frequent flyer programs are often interlinked inside an alliance, which makes it possible to gain frequent flyer points from any of the member airlines. This obviously creates at least some differing value for the airlines in these global alliances.

However, the recent advancement of information technology and the possibilities offered by electronic environment have born totally new ways to achieve differentiation. Electronic networks enable a huge amount of different kinds of services to be offered to customers in order to create them more value. And the major advantage here is that this entire electronic world is still quite new. This means that airlines can not only offer their customer electronic services, but they can offer them very innovative electronic services which actually can offer some new value. As also Doganis (2001, 178-181) estimated, this electronic environment will affect greatly on the future of airline business. Hence, it could be argued that electronic services are the way to reach for differentiation in future. It should, however, be remembered that the Internet and electronic networks are not necessarily any silver bullet that would automatically create benefits for

a company. According to Porter (2001), electronic channels can create competitive advantage for a company but only when combined to a working business strategy. Porter argues that electronic channels should be used to create more edge for other sources of competitive advantage, not just by themselves. The two ways to do this are operational effectiveness and strategic positioning. Operational effectiveness means faster exchange of real-time information that benefits the entire organization. This has been the original reason for creating most electronic business systems but according to Porter, it has become harder and harder to gain competitive advantage like this. Strategic positioning, instead, is the better way to reach for competitive advantage today. In strategic positioning a company uses electronic channels as a tool to enhance its existing positioning. In other words, electronic means are used to complement the existing product or service concept trying to differentiate from competitors. This is obviously the way how electronic channels should be used to reach for competitive advantage in future and this actually fits quite nicely to the discussion earlier is this chapter.

The final important issue considering differentiation is what Porter (1985, 14) has mentioned. He argued that differentiation strategy requires also focusing at costs of those functions that do not influence on differentiation. This means that in addition to creating differing services, an airline should also focus at costs. Also Doganis (2001, 14) says that cost reduction has become a continuous and a long term necessity for financial success in airline operations. The current competitive environment on the industry and especially low-cost airlines have created heavy cost pressure for conventional airlines, why focusing also at costs is very essential. Even though it can be argued that differentiation is the main strategy of conventional scheduled airlines, it should be noticed that costs are also a very crucial factor in the long term success of conventional scheduled airlines. As a matter of fact this goes very nicely along with the newer writings of Porter (2001) about the strategies in the Internet.

5.2   Value Creation

An important point in an analysis of competitive advantage is to understand that competitive advantage is not created by a company as a whole, but instead, it is created by all the separate functions and activities performed inside a company. (Porter 1985, 33) The way to analyze the creation of competitive advantage through these different functions and activities is to look at the value delivered at a customer. According to Walters & Lancaster (1999), term "value" refers to delivering a customer such a product / service attributes that are needed to create customer satisfaction and to maintain an ongoing customer relationship. Hence, if a company wants consciously to create competitive advantage, it should recognize all the components that affect on its value creation process and try to improve these areas as much as possible.

A traditional and also widely referred method to analyze and represent a company's value creation components is Porter's (1985) value chain framework (FIGURE 3). In his framework, Porter divides a company into primary and support activities. Primary activities are activities that directly create more value for a customer and they include inbound logistics, operations, outbound logistics, marketing & sales and service. Support activities are, instead, activities that enable primary activities and also improve their performance. They include infrastructure, human resource management, technology development and procurement. In the diagram primary activities are described as sequential steps which assume that the output of a previous activity is the input of the next one. The support activities, on the other hand, are described in layered form that refers to the fact that they are performed all the time along the primary activities. Finally the margin in the end of the value chain describes the margin created by all the primary- and support activities. (Porter 1985, 36-39) Porter's framework is widely accepted but, on the other hand, it is also argued to fit only in certain areas. Stabell & Fjeldstad (1998), for example, argue that the problem of the value chain is that it is especially designed to analyze the value

components of manufacturing industries that have clear sequential phases. In addition to this, Cartwright (2000) argues that it is difficult to apply the value chain on the companies whose products have high information content, service companies that have significant human assets, or who operate either partially or completely in electronic market space.
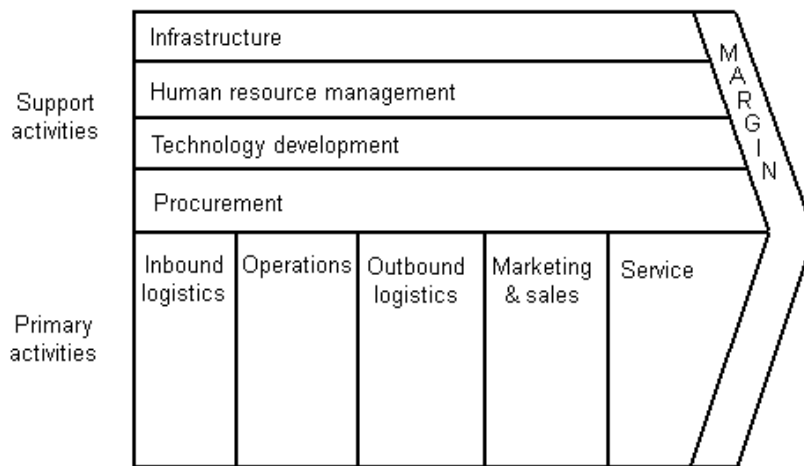
FIGURE 3. The generic value chain. (Porter 1985, 37).

The globalization of business and competition, shorter lifecycle of products and the fast exchange on information provided by developed information technology have changed the structure of business, competition and value creation. Instead of focusing at several functions inside a company, such as different activities in the value chain, companies have been forced to focus primarily on their core competencies. This has led into outsourcing several value creating functions, and thus, into creation of more and more complex strategic corporate networks. (Möller et al. 2004, 17-18) According to Möller et al. (2004, 10), network is "a multi-industrial network tissue formed by relationships between companies and other organizations without any borders". In practice, this means that networks are a combination of several partnerships and collabora-

tions. The way how Möller at al. (2004, 8) have described networking is presented in FIGURE 4. In their description, networking is seen as the combination of vertical and horizontal partners which is influenced by the forces that push a company towards networking. The vertical axis includes suppliers and dealers as well as customers. The horizontal axis, instead, consists of competitors and governmental institutions. The benefits typically sought with networking are improving operational efficiency, improving operational flexibility, reaching for more marketing power and wider market through joining of resources, developing the range of business processes and product range and creating new technologies and new business. (Möller et al. 2004, 24-26) However, reaching these benefits requires a careful control and management. The more complex and deep the networks become, the more dependent the parties become to each other. This creates a certain amount of risk which needs to be understood. (Möller et al. 2004, 8-9)
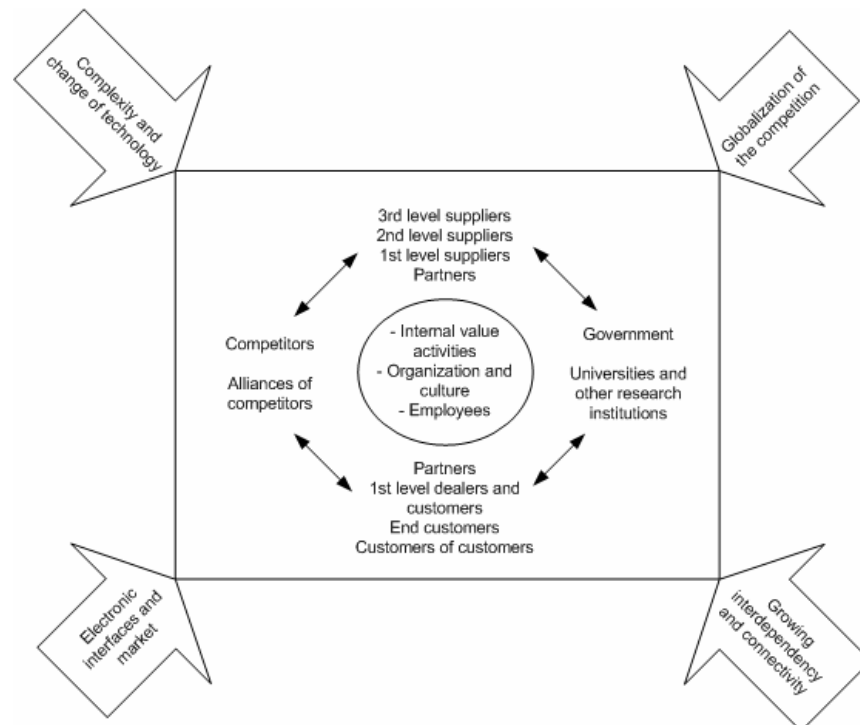

FIGURE 4. The networking of a company through vertical and horizontal relationships. (Möller et al. 2004, 8)

From the airline industry's point of view, this obviously means that network partners have become crucial also on this industry. Probably the most typical form of networks on this industry is airline alliances that can be seen as horizontal networks that are created with competitors reaching for larger market and competitive power. However, in today's competitive environment, is can be argued that networks have become extremely important also in the field of electronic business. Especially when considering electronic services that combine several different kinds of services and activities, it is obvious that networks do play a significant role in the service provision.

To analyze the value creation of electronic services more precisely, the following presents the model created by Amit & Zott (2001). Amit & Zott have studied the sources of value creation in e-business finding four main factors that can create value in electronic environment: efficiency, complementarities, lock-in and novelty. These factors are presented in FIGURE 5. According to Amit & Zott, the components of value creation in e-business are an integration of several frameworks of strategic management and entrepreneurship. They argue that no single existing framework can take all the needed aspects into account and hence, they created a framework that is a combination of several earlier frameworks.

In the framework, efficiency was found out as one of the primary value drivers for e-business. First of all, when comparing e-business to traditional business, e-business reduces search costs. In electronic environment it is a lot easier to find information of products and compare different products. Secondly, improved information can reduce information asymmetries between buyers and sellers and offer customers wider selection range. Thirdly, the electronic environment enhances speed and simplicity of transactions which provides more convenience and easiness. Finally, electronic environment provides customers also an ability to benefit from scale economies by demand aggregation and bulk purchasing. (Amit & Zott 2001)
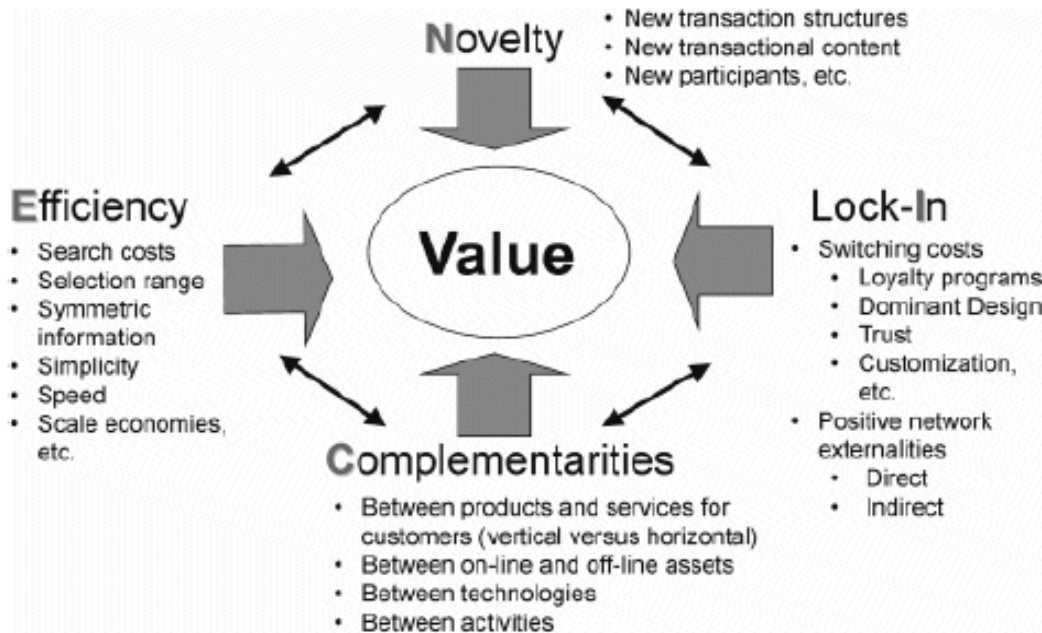
FIGURE 5. Sources of value creation in e-business. (Amit & Zott 2001)

Complementarities mean different packages of products that combine two separate products into one. In practice, this may mean either vertical complementarities such as after-sales services or horizontal complementarities such as one-stop shopping or cameras and films. The idea of complementary products is to add value of the original product by adding, for example, convenience for a customer. An example of this can be found in the airline industry when thinking about airlines offering their customers also vacation packages, tickets to transportation, attractions and so on. In e-business, complementarities typically mean a combination of online and offline products. This means that in electronic environment, several complementary products can be offered through electronic channels. And by doing this, a company may create more value to its customers. E-business can also create value by complementing different activities like in supply chain integration or with complementary technologies in different business processes. (Amit & Zott 2001)

Lock-in refers to preventing customers and strategic partners from switching to competitors. In practice, this is done by motivating customers to make repeated transactions or by strengthening the relationship by some other means. A major part of this all is creating switching costs. Switching costs mean making it easy for a customer to stay a customer of this particular company and making it harder to switch to another company. This can be obtained with several means. First of all, customer retention can be achieved by loyalty programs. With loyalty programs customers can be rewarded from repeated transactions, and hence, they are less interested in switching to another company. Secondly, the user interfaces or other such designs can be customized so that they require at least some amount of learning. Once a customer has learnt one interface, he will probably be less interested in switching into another one. Also an ability to customize or personalize products, services or information enhances lock-in. Finally switching costs can be created by offering a customer secure and safe services. This trust enhances the relationship and also enhances lock-in. In addition to switching costs, another important way to create lock-in is virtual communities. The virtual environment in which electronic business typically happens enables companies to create virtual communities that bond its users to some particular e-business. Examples of these might be, for example, online auctions. In this virtual environment, e-business companies typically connect several network externalities with each other, directly or indirectly. In direct connection customers gain directly advantage the larger the member base is. In indirect situation the result is the same, the benefit is only gained indirectly. In both cases, however, a company may create loyalty and enhance transaction frequency. (Amit & Zott 2001)

Finally, novelty means making innovations such as new products, services, methods of production, distribution or marketing. In electronic business innovations can be achieved by offering new transaction structures, new transactional content or by acquiring new participants. First of all, a company may develop a new way to handle transactions. By offering customers some new to-

tally different way to do business might separate a company from its competitors and might create more value. Offering new transactional content means offering something totally new services, combinations of products and services or practically anything that can create more value for a customer. The developed technology has made nearly everything possible and companies have lots of possibilities to create something new. Amit & Zott also point out that for e-business innovators, it is easier to create switching costs and to develop brand awareness and reputation. Finally, new participants mean that companies can find new partners to combine different products or services with each other. (Amit & Zott 2001)

All the previously presented four areas are also connected with each other. First of all, efficiency factors create the basis for creating complementarities by enabling all electronic services. On the other hand, complementarities improve efficiency from customer's point of view by, for example, reducing search costs. Efficiency and complementarities also create lock-in. As customers find services efficient or find complementary services excellent, they may be interested in staying a customer of this particular firm. Lock-in, instead, can improve efficiency and encourages creating more complementary services. For example, in online auctions customers may rate each others' credibility. This function clearly makes it easier for other customers to use the service which again improves efficiency. Complementary products are, instead, created more because lock-in makes it reasonable to create more services for frequent customers. Finally novelty influences on lock-in, complementarities and efficiency. First of all, innovations create lock-in and e-business innovators have also better chances to attract and retain customers than other companies. Secondly, innovations are often taking advantage of other complementary elements such as resources and capabilities. Hence, complementarities also influence on innovations. Finally, innovations may create efficiency by offering several new and more efficient ways to do transactions. (Amit & Zott 2001)

When thinking about the framework of Amit & Zott (2001) from the airline industry's point of view, it is clear that the framework can be a useful tool when analyzing the value creation of electronic services in the airline industry. The framework presents several critical factors that can be essential when trying to create value with electronic services. First of all, the efficiency part is naturally essential in every electronic service. Today's customers do want that the services they use are easy, fast and simple or otherwise they just stop using it and move into another service. Hence, it can be argued that efficiency is one of the most important basic factors in the electronic services of airlines. Complementarities, instead, are actually what electronic services in airlines really are. They are complementarities. As the actual service of airlines is transportation, electronic services offer something extra to this by making traveling easier. For example, today's airline industry is already full of complementing electronic services: Several electronic services that complement the actual traveling process such as www check-in, websites that work as the main communication channel between airlines and customers or web services that allow customers to reserve rental cars, hotel rooms or transportation. Also electronic services have become complementarities for each other: in several websites, electronic services were bundled as one separate section to guide passenger to use them wisely. However, this might also be the point of development. As mentioned in chapter 4.1, even if electronic services were presented in one place, they were generally not combined into the actual traveling process well enough. This means that there might still be some points of development in complementing different services. Lock-in provides also several possibilities for airlines. Switching costs is something that airlines have been trying to create for a while already. Probably one of the most well known methods have been loyalty programs that practically every traditional airline seems to offer. During latest years, loyalty programs have been transferred into the electronic environment by offering several electronic services for loyalty program members. This includes typically a section in the website that a member can use for taking care of his membership or person-

alizing and customizing his services or electronic services offered only for loyalty program members. This actually leads into the final area: novelty. Even if there are several important areas that might create more value for a customer, they are nothing without novelty. Without new innovations, staying in the pace of technology development and creating new services all the time, there is no possibility to create value with any of these areas. So, as a conclusion, it can be argued that to create value with electronic services, an airline should provide innovative and efficient electronic services that ingeniously complement the actual traveling process and create switching costs.

5.3   Summary

The contribution of this chapter was to find out that a typical strategy used by a conventional scheduled airline is differentiation which is, however, extended with a focus at costs. The major argument was that electronic services are a considerable way to support differentiation of an airline as it has become hard to differentiate with only the flight service. The value creation chapter took the analysis further and it concluded that competitive advantage is formed out of different activities and functions inside a company that add value for a customer. It was also pointed out, that corporate networks are a very important factor in today's business. A remarkable result was the value creation potential of e-business systems derives from four main interdependent dimensions: efficiency, complementarities, lock-in and novelty. This led into a conclusion that to create value with electronic services, an airline should provide innovative and efficient electronic services that ingeniously complement the actual traveling process and create switching costs.

6 SERVICES AND ELECTRONIC SERVICES

Whereas the earlier chapter presented the basics for creating competitive advantage and value with electronic services, this chapter moves the focus into the details of actual services and electronic services. First, the chapter presents services in general and presents also term "service quality". This is followed by chapter 6.2 that takes a look into existing studies of services in the airline industry. Chapter 6.3 moves the study into electronic services and presents issues relating to their provision, adoption by customers and e-service quality. The chapter also presents e-business models and special issues that relate into them. Chapter 6.4 finally concludes the chapter.

6.1   Features of Services

Several authors have been writing about services but this review is done by basing mostly on probably the most appreciated authors Zeithaml & Bitner and Grönroos. According to Grönroos (2001, 79), several definitions for service were presented during the 1960s, the 1970s and the 1980s but no generally accepted definition was found. Basing at previous writings and definitions, Grönroos (2001, 79) himself defines service as follows: "Service is, at least in some extent, a process consisted of a set of intangible functions, in which functions are offered as resolutions for problems of a customer and which are usually, but not always, delivered in an interaction between a customer, service employees and/or physical resources or products and/or systems of service provider." The definition provided by Grönroos is obviously quite comprehensive but also quite complex. Zeithaml & Bitner (2003, 3), instead, use a bit simpler definition by saying that "services are deeds, processes and performances". This definition seems to simplify the idea but contains, however, the basic idea of service. Another quite describing definition that Grönroos mentions in his book is a definition presented by Gummesson. Gummesson argues that service is something that can be purchased and sold but that cannot be dropped on one's toes.

This funny definition is actually quite describing as it emphasizes the fact that services are intangible.

When describing service products, typical things to be mentioned are intangibility, heterogeneity, simultaneous production and consumption and perishability. These are also essential challenges for services' marketing. Intangibility refers to the fact that services are performances and actions which cannot be touched. This means that they cannot be inventoried, patented or displayed. Heterogeneity means that services are typically a result of some performance often done by a human, and hence, the result often depends on that human. In other words, some particular service might be different depending on person who performs or delivers the service. This makes it hard to control the quality of service. Simultaneous production and consumption refers to the fact that services are usually produced and consumed at the same time. Also customer is typically a part of the production of service and customers might also affect on each other. For example, a restaurant evening, a haircut or a bus trip are all consumed while they are produced and a customer is a part of the production. At the same time there are also other customers present why they also affect on the service delivery. Perishability means that services cannot be saved, stored, resold or returned. For example, free seats in a bus or in an airplane cannot be stored and sold afterwards. (Zeithaml & Bitner 2003, 20-22) Another feature that describes the nature of service product is also that they are processes which consist of actions or a set of actions. Hence, services are typically a combination of several actions that each influence on the formation of service. (Grönroos 2001, 81)

The special elements in service product can be seen through the services marketing mix. The traditional marketing mix consists of 4P:s: product, place, price and promotion which describe the basic elements of any marketing situation. However, because of the special character of services, the service marketing mix has been enhanced with three additional variables: people, physical evidence

and process. These additional variables try especially to emphasize the special features of services. As services are rather abstract, the service is often evaluated by its physical parts such as people and physical evidence. This means that personnel, human contacts, facilities, equipment and other tangible elements are very essential when providing services. Also the service process is an essential part of the service provision why the flow of activities, different steps and customer involvement are important areas of analysis. (Zeithaml & Bitner 2003, 24-25) However, Grönroos (2001, 323) criticizes the usage of marketing mix in an analysis of any marketing situation by arguing that definition of any phenomenon basing at a list cannot fit in every situation or the list might get old. The argument of Grönroos is probably correct, but in this situation presenting the services marketing mix clearly emphasizes the special features of services and generally describes what the critical factors in services marketing are.

When thinking about the situation from the airline industry's point of view, it is obvious that the airline industry is a service industry. Also Zeithaml & Bitner (2003, 4) ascertain this in their table that presents industries classified within the service sector. In the table, air transportation is a subcategory of transportation which is further a subcategory of transportation and public utilities. The service provided by airlines is a transportation service that transports people and goods from a place to another. First of all, air transportation service is rather intangible. Transportation cannot be touched, inventoried or displayed. Secondly, the service is very heterogeneous. How the actual service is provided depends on pilots, cabin crew, other staff of an airline at airport and also other airport staff. Also other passengers influence the travel experience. Thirdly, the transportation service is also produced and consumed at the same time. Fourthly, the service is perishable. Free seats that are not sold when the plane leaves, cannot be stored. Neither can the service be returned. Finally, the whole service product consists of a set of actions. The whole travel process consists of several phases that usually are and have to be completed in certain order. So, how about the services marketing mix? The services marketing mix illuminates

a set of important factors that needs to be taken into account in an airline. First of all, people are an essential part of the whole transportation service. The staff of an airline is in crucial part when thinking about how a passenger can value the service. The actions of airline's staff at contact center, at airport and in an airplane are very essential when a customer evaluates the whole service. Secondly, facilities, equipment and other physical elements are also very important. Again a customer evaluates the service by facilities, aircraft, outfits of personnel, offered servings an so on. Finally, also the whole travel process is something that is important to a customer. A customer will probably evaluate the whole service by the easiness of the whole travel process including all single actions during the travel.

An essential issue in service concept, and especially in an airline's service concept, is service package. According to Grönroos (2001, 227-230) there exist three different groups in service package: a core service, assisting services and supporting services. A core service is the main reason why a company is on the market. For example, in airline the core service would be the air transportation. However, a company may offer more than one core services. Assisting services are services that exist to make the actual core service possible. In the airline industry, this kinds of services could, for instance, check-in services or other services needed to make the actual flight service possible. Finally supporting services are services that exist to add value to the core service. These services are not actually needed to make the core service possible, but they do add value for the actual service and are a way to differentiate from competitors. Electronic services could be these kinds of services in the airline industry.

6.1.1 Service Quality

Probably one of the most important factors in service industries is focus at customer and service quality. According to Grönroos (2001, 100-104), quality is often considered as one of the key factors in determining the success of a company, and by offering high quality products and services, a company may

achieve competitive advantage. However, Grönroos points out that the quality of an end result (technical quality) of service process is too often the main focus of quality. In companies operating at same industry, the end result is typically quite similar to each other and very remarkable differentiation is hard to be achieved. For example, in every restaurant a customer gets his meal, every airline transports a passenger to his destination and an in every hotel a guest gets his room. Hence, Grönroos suggests that the main source of differentiation should especially be the functional quality of service. This means that instead of trying to improve the quality of an end result, a company should focus on improving the quality of the way service is provided. The outlook, appearance, and behavior of personnel, environment, or the way how service is provided affect heavily on customer and these features are also easier to be differentiated from competitors. These are actually also the same issues that were included in the services marketing mix.

Central issues in service quality are customer's expectations and the quality experienced by a customer. Customer's expectations are typically formed by promotion, image, relationship handling and customer's own needs and culture. Quality experienced by a customer, instead, depends on how well these expectations are met with the service offered by a company. If a customer gets what he expects, experienced quality is good. If a customer disappoints, experienced quality is bad. (Grönroos 2001, 104-106) In addition to this, according to Zeithaml & Bitner (2003, 63), customers also have a certain zone of tolerance, that contains the area on which the experienced service quality is lower than expected, but is still adequate. An essential point here is that the expectations of a customer are crucial in estimating the quality of a service. From a company's point of view the main point here is that promotion is one of the main factors that a company can use to influence on customer's expectations. By giving correct information of its services, a company does not create any false expectations. The image of a company and customer relationships are factors that can be only partially controlled as a part of them depends also on history. The

needs of a customer and culture are issues that cannot be influenced but that, naturally, has to be taken into account. (Grönroos 2001, 104-106) The situations by which a customer finally makes his judgment of the quality of service are called the moments of truth. These moments are all the situations of interaction between a company and a customer. For a company this means that these moments are the only possibilities to show the quality of service for a customer. (Grönroos 2001, 112)

Another important issue relating to service quality is its measurement. A good and also well-known method to measure service quality is SERVQUAL developed by Berry, Parasuraman and Zeithaml. In SERVQUAL method five factors of service quality formation, tangibles, reliability, responsiveness, assurance and empathy are used to measure how customers feel about service quality. The research is done by gathering information by surveying customers and results should present the experienced quality of customers. (Grönroos 2001, 115-117) However, according to Grönroos (2001, 118), the SERVQUAL method should be applied with care as different service environments are very different. Hence, Grönroos suggests that in each case the SERVQUAL factors should be adjusted to suite the current situation.

6.2   Services in the Airline Industry

Services and service quality in the airline industry have been studied by Sultan & Simpson (2000) and Gustafsson et al. (1999). In his book Grönroos (2001, 114) also mentions a research made by British Airways in the 1980s.

The British Airways research was to find out the most important factors in flight experience and the study revealed that the most important factors were caring, spontaneity, problem solving and normalization. These factors are obviously important factors in the airline business even today.

Gustafsson et al. (1999) took this analysis a bit further. In their report they describe the research made by Scandinavian Airlines System (SAS) in effort to

identify the actual needs and concerns of airline passengers and to use this information in creation of design principles for company's strategy and innovation development. Basing on its earlier research, SAS analyzed the travel process experienced by its passengers. As a result, the process formed out of five parts: check-in counter, lounge, gate, in-flight and baggage claim. The actual research was done by videotaping passengers in these situations. Basing on the video data, SAS created clusters of similar customer behavior and this resulted in creating three categories: procedural, personal and planning & preparing activities. Procedural activities included activities of exchanging value and navigating. Exchanging value means activities where a customer gives something and receives something like, for example, at a check-in counter or at a gate. Navigating, instead, means activities needed in proceeding thought different environments and procedures. Personal activities were also found very important part of traveling and they included resting, working, entertaining, socializing and personal care. Planning & preparing activities included planning their trip ahead and also during the trip, packing and also repacking during the trip and linking which refers to all the planning and preparing activities to make the travel more comfortable. The identified components were found as an important tool to understand the needs and expectations of passengers and they can also be used in creation of new service concepts. They can also be used to evaluate how new service concepts affect on customer satisfaction and how new services fit into overall development strategies.

Even though the research made by Gustafsson et al. (1999) seems to give very useful information for airlines, it does not take electronic environment into account at all. The reason for this is probably the fact that the research is done in the late 1990s when electronic environment was not yet so important on the industry. In the research Gustafsson et al. identified five parts in travel process: check-in counter, lounge, gate, in-flight and baggage claim. As can clearly be seen, all these phases need to be realized either at airport or in an aircraft. However, today, as electronic environment has developed a lot, it can be argued that

some new parts should be added in the travel process. As mentioned earlier in this research, a website of an airline has become an important connection point between an airline and a customer. A customer can use a website to find information about the company itself, its services, prices and flight schedules. Also many kinds of reservations can be made. Hence, there are several functions a customer may perform at the website before the actual travel. Same is also true after the actual travel. A customer may enter the website of an airline after the trip to perform some tasks relating to the trip that was made. Based on these arguments, the travel process presented by Gustafsson et al. (1999) is converted to a more modern form. The enhanced travel process is presented in FIGURE 6.
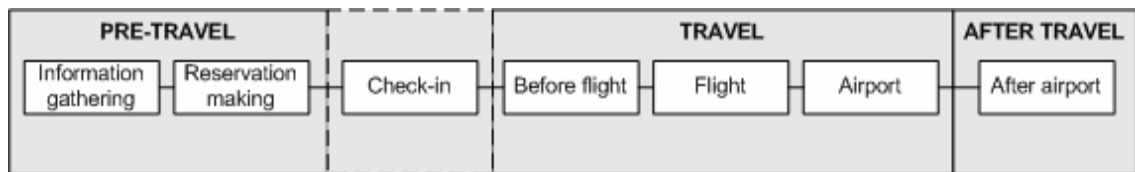
FIGURE 6. The travel process.

The travel process presented in FIGURE 6 describes the whole travel process in such a way that also electronic services can be taken into account. Pre-travel tasks consist of information gathering and reservation making. These can be done either electronically, or in a traditional way. Check-in lies between pre-travel tasks and actual travel tasks. The reason for this is that check-in can be performed either traditionally at airport, from a website or by mobile device from anywhere. Hence, check-in cannot be bond in any location anymore. The actual travel tasks consist of before flight tasks, flight itself and the task performed at airport in the destination. Before flight tasks are tasks that are performed after arrival at airport and before the actual flight. Hence, it consists of all tasks performed at airport excluding check-in. The flight does not need any explanations; it is the actual flight service. The tasks at airport in the destination

consist of everything after walking out of an aircraft and before leaving airport. Finally, after travel tasks consist of all tasks that might be needed to do after the actual travel. These tasks might be sending either positive or negative feedback or solving possible problems. With this enhanced travel process model, an airline can analyze its operations in a way that also takes an electronic environment into account. With the model an airline can also analyze the targets for electronic services and can think the role of electronic services especially from the travel process' point of view. Hence, the model should be used as the basis for the creation of electronic services.

The research made by Sultan & Simpson (2000) studied differences of customer expectations and perceptions of service quality between European and American airline passengers by using the SERVQUAL method. The main idea of the research was to find out whether European passengers expect and percept service quality differently from American passengers. As a result, the research found out that European passengers have higher service quality expectations than American passengers and European airlines offer better service quality than American airlines. From electronic services' point of view, the result may benefit especially airlines that operate both in America and in Europe. In these cases airline should think about the quality issues of their services even more carefully than normally.

6.3   Electronic Services

Latest years of rapid technological development have changed the provision of services quite much. Improvements in telecommunications, electronic networks, multimedia, Internet access, connectivity and interactivity have created several new opportunities to offer services and indeed the service sector has changed fast. (Javalgi et al. 2004) New services provided over electronic channels have born and this has created many issues that are different from traditional services. Especially the lack of human intervention and increased auto-

mation in services are new issues that have arisen many questions for the further research. (Voss, 2003)

As mentioned in chapter 2.2, electronic services (e-services) are services provided over electronic channels. According to Hoffman (2003), the major advantages of today's e-services are mobility, flexibility, interactivity and interchangeability. Mobility enables users to take advantage of the services from practically anywhere. Earlier the only way to access many e-services was the Internet which required a presence right next to a computer. Today electronic services can be used by mobile phone, digital TV, directly from an automobile's systems, in the Internet or by a personal digital assistant (PDA) without any location requirement. This makes the usability of electronic services enormous. The rest benefits mentioned by Hoffman are more technical. Flexibility means that e-services can be used as modular customizable building blocks from technical perspective. As customization is easy, services can easily be linked with other applications and can be used as tools for mass customization. Interactivity refers to the technical structure of e-services. Typically, e-services are from the beginning designed to communicate with other systems and services which makes it easy to create versatile services for customers. As services can be made to communicate with others, a wide range of interlinked services can be created. Interchangeability refers to a situation where services are so standardized that interlinked partner can easily be changed. This kind of situation could be like a travel e-service that requests bids from several airlines. As services are quite standardized new airlines can easily be added to the service. This enables easy alternation of services.

According to Rust & Kannan (2003), the actual core of electronic service is customer centric view and creating revenues by improving customer satisfaction and retention. In other words, electronic service provisioning is using technology and electronic environment to stay competitive and customer centric. The main point here is that the objective of electronic services is not so much to re-

duce costs through automation and increased efficiency but to focus more on expanding revenues by improving services and creating profitable customer relationships.

To achieve a customer centric view with electronic services, a company should focus on creating value on both strategic and tactical levels. Strategic level means orientation from products and transactions to services and relationships as well as building customer equity. Tactical level, on the other hand, focuses on personalization, customization, self services, privacy and security risk management and electronic service measurement. Orientation to services means that companies need to transform their physical products into service products to stay competitive in today's electronic world. This is actually the basis for modern traditional services too. Building customer equity means that company should start thinking its services from customer equity's point of view and try to create as much value for its customers as possible. By doing this, a company can achieve competitive advantage though increased value to customers, by creating switching costs and by choosing the right customers. Personalization and customization should be used to create more specialized services and hence higher switching costs and higher customer equity. Self services can create great benefits for a customer as he can now use the service as 24/7 or at least more freely. This creates customer satisfaction and also leads to customer equity. Privacy and security risk management means focusing on privacy and security issues of services to create less threatening environment for customers. Finally electronic service measurement is needed to maintain a successful electronic service. Without continuously knowing how satisfied customers are with the service it is impossible to create competitive advantage with it. (Rust & Kannan 2003)

Like in traditional services, an important issue in electronic services is also customer expectations. In electronic services this refers to the fact that the more technology advances the more advanced services customer expect. If one com-

pany creates an innovative service, others will copy it and soon the services is expected from every company. This makes it necessary for companies to follow the advancement of technology closely to stay in the pace of customer expectations. (Rust & Kannan 2003)

Electronic services can also overcome some basic challenges experienced with traditional services. One basic feature and challenge of traditional service was intangibility which meant that services cannot be touched, seen or displayed. However, as e-service customer can be offered more concrete presentation of the service by using a website. A website can be used to offer a customer a visual view of service related issues such as facilities or staff, for example. Also web cameras can be used to give customers more tangible feeling about the service. Thinking about the looks, content, fastness, ease of navigation, automated order confirmations and information updates of website a company can also improve the tangibility of the service. Another challenge of traditional services is heterogeneity which means that service quality may vary depending on a provider. In electronic services, this problem is minimal as the services are provided by fixed electronic means without actual human intervention. Also possible problems are continuously monitored by other applications and this reduces the possibility of an error. E-services can also be tested before they are actually put in use unlike traditional services. A challenge of traditional service was also simultaneous production and consumption. In traditional service, the service is produced and consumed at the same time and both the provider and consumer has to be at present for the transaction. In e-service, instead, a company can create the services earlier and a company representative does not really have to be present when a customer uses the service. Services can also be mass-customized for customers by certain definitions and settings set by customers themselves or by transaction history. Finally, traditional services were perishable which makes it impossible to store unused services. E-services, instead, are operative 24/7 and, for example digital products, are available any time. This means that these kinds of electronic services do not even have to be stored anymore. This

removes the traditional perishability challenge. However, there are still traditional services that have to be provided in a traditional manner by human intervention. The perishability problem of these services can be reduced with electronic ways by, for example, creating some additional metaservices. These kinds of services could be, for example, web auctions provided already currently by airlines to sell remaining tickets via website at discount price. (Hoffman 2003)

The role of electronic services in the airline industry can be seen through the theory of service package presented by Grönroos (2001, 227-230) in chapter 6.1. According to Grönroos, service package forms out of three groups: a core service, assisting services and supporting services. In the airline industry's case, a core service would be the actual flight travel. Assisting services would be services that are needed to make the actual flight travel possible such as check-in and departure gate, for example. Supporting services would be services that are not necessarily needed but that add value for the whole process. When thinking about the possibility of electronic services, it is rather clear that suitable areas for them would be assisting and supporting services. In assisting services, electronic ways could be used to make the travel process more efficient and easier for a customer. As all assisting services are needed to make the flight possible, an airline could improve the travel process quite much by making these assisting services more efficient and easier for passengers. As a matter of fact, this area is already noticed by airlines when looking at the number of different electronic check-in possibilities, for example. One could also presume that these services will become more numerous in near future. In supporting services, electronic ways could be used to add value for the actual travel process. Different services on a website, different mobile services and personalization are all possibilities to be used to offer customers services that would make their travel easier and nicer. It could be argued that this group of services is the most important one when trying to achieve differentiation and competitive advantage

in future. Every airline can create same kind of basic assisting services but in supporting services the limit is set only by an ability to innovate.

6.3.1 Factors Influencing the Provision of E-services

Javalgi et al. (2004) and Surjadjaja et al. (2003) have studied factors influencing on the provision of electronic services. The research made by Javalgi et al. studies the factors that are essential when exporting electronic services to some new regions. Even though these factors relate only into the exportation of electronic services, they can be, at least in some extent, generalized also to any provision of electronic services. Besides, airlines' electronic services are often provided internationally, which makes it more reasonable to present these factors here. The research made by Surjadjaja et al, on the other hand, studies the general determinant of electronic services operations. These factors are rather essential when providing electronic services.

Javalgi et al. (2004) have separated their factors into two dimensions: structural factors and strategic challenges. Structural factors form out of technical infrastructure, governmental/regulatory infrastructure, market structure and economic factors. Strategic factors, instead, are human capital, marketing challenges, competitiveness of the industry, organizational challenges and public policy. The factors are presented in TABLE 2. According to Javalgi et al. (2004), the structural factors form the foundation for provision of electronic services and also allow their growth. The strategic factors, instead, provide great challenges when starting to export those services. The framework provides quite an exhaustive list of factors that obviously are very important when exporting electronic services to some new regions or countries. By taking these factors into account when exporting electronic services, the risk of failure diminishes with no doubt.

TABLE 2. A framework for national/regional e-services readiness. (Javalgi et al. 2004)

Structural Factors	Technical Infrastructure	• Access to Internet services (amount of the Internet users, the Internet hosts and websites as a percentage of the population)
		• Diffusion rate of PCs
		• Internet usage
		• Teledensity
	Governmental Regulations	• Legal services
		• Currencies
		• Clearing systems
		• Banking and financial networks
		• Credit card payment
		• Intellectual property, piracy, copyright, domain names, cyber squatting
		• Tax, duty, trade, research, development, privacy, security, education
	Market Structure	• Market structure of an area or a country
	Economic Factors	• Economic situation of an area or a country
Strategic Challenges	Human Capital	• Skilful and educated workforce
	Marketing	• Understanding different customers
		• Technology must be used to satisfy all the relationships between the company and its employees, the company and customers and employees and customers.
		• Satisfying customers' needs
		• Internal marketing
		• Marketing research
	Industry Competitiveness	• Customer base
		• Rate on innovation
	Organizational	• Organizational structure needs to support the electronic service oriented strategy
		• Logistics, transaction engines, infrastructure

	• Taxation, pricing, regulations
	• Organization culture
	• Research
Public Policy	• Financial issues, legal issues, market access issues, privacy and transactions

Surjadjaja et al. (2003) have categorized their results under three categories: service marketing, service design and service delivery. Service marketing consists of factors that deal with the expected quality of services and matching company's operation into these expectations. Service design refers to the design of facilities, servers, equipment and other resources needed to produce services. Finally service delivery refers to the actual delivery of products and services to customers. All these three areas are interlinked and they need to be balanced to provide an ideal e-service. The framework of Surjadjaja et al. is presented in TABLE 3.

TABLE 3. The determinants of e-service operations. (Surjadjaja et al. 2003)

Service Marketing	• Trusted service
	• Internal communication
	• External communication
	• Price
	• return process
Service Design	• Responsiveness
	• Site effectiveness & functionality
	• Up to date information
	• Supply chain integration
	• Systems integration
	• Personalization
	• Customization
	• Navigability
	• Security

Service Delivery	• Interactivity
	• Service Recovery
	• Real time assistance by knowledgeable CSR
	• Fulfillment
	• Availability

6.3.2 Customer Adoption of E-services

Customer adoption is another essential issue that relates to electronic services. As electronic services are rather new area of business and they still base largely in innovations, the way how customers accept different solutions is unknown. Especially when a solution changes familiar behavior or requires some learning, it cannot be known how customers will accept the service. Hence, an analysis of customer adoption is quite important when planning new electronic services.

According to de Ruyter et al. (2001), organizational reputation is one of the major factors influencing on the adoption of e-services. If a company has a strong reputation, customers tend to trust new electronic services more, tend to perceive more quality and tend to have a greater intention to use services. On the other hand, if the reputation is bad, the impact is opposite. If a company has a good reputation, it should try to transfer it into the context of electronic services by using all possible channels. This means that a company should use its existing reputation as the basis of new electronic services by, for example, using existing brands, names or some other identity features in those new electronic services. By doing this a company can enhance the effect of its existing reputation and enhance the adoption of new electronic services. (de Ruyter et al. 2001)

Another important issue that influences heavily the adoption of electronic services is relative advantage of the service. As companies, service features and prices can be compared easily today, it is important to offer services provide big benefits and are easy and comfortable to use. An important fact is also that

technological solutions can be copied but the content is a lot harder to be copied. Hence, it makes sense to create such services that stand out and offer great benefits. (de Ruyter et al. 2001)

The third important factor influencing on the adoption of electronic services is trust. In a typical electronic service customer experiences a certain amount of risk typically because he has to give some personal or financial information about himself and there is no concrete picture of the service provider. This reduces a customer's willingness to use the service. To create more trust a company should, first of all, find a way to measure this amount of risk experienced by customers. Then, when the risk level is known, a company should emphasize the features of privacy, security and confidentiality of its electronic services or create some easy contact methods to concrete personnel to reduce the amount of risk. In addition to this, as mentioned above, also company's reputation has a big impact on the feeling of trust. This means that if the reputation is good, customers are more willing to trust electronic services. Hence, the company reputation has actually a very essential role in supporting the adoption of electronic services. (de Ruyter et al. 2001)

Kaasinen (2005), on the other hand has studied the user acceptance of mobile services. This is especially interesting topic from airlines' point of view because airlines tend to offer lots of mobile services already now. Mobile services are also an area that will obviously give lots of possibilities for future innovation in the airline industry. According to Kaasinen, the acceptance of mobile services depends on four factors: perceived value, perceived ease of use, trust and perceived ease of adoption.

Perceived value refers to the value experienced by a customer and there are some issues that can be seen important when creating this value. First of all, personally relevant and interesting content and communication are issues that are valued by customers. Communication refers to the possibility to communicate through the service like in discussion groups or to create user-based con-

tent. This is obviously not one of the primary interests of the airline industry. Secondly, the information provided in services has to be topical. There is no need to provide customer information that is not topical. Information also has to be comprehensive to satisfy the information needs of a customer. If a customer can not get the needed information, he will get it from somewhere else and might keep getting it from somewhere else. Thirdly, services need to be divided into entities that guide a customer through an activity, even from one service to another and from one device to another. This feels especially important point for airlines, as mobile services need to support the actual traveling process. Finally, an issue that is needed to be taken into account is that the needs to use mobile services are often occasional. Even if the service might be very useful for the moment, a customer might not need or want to use it at that time. (Kaasinen 2005)

Perceived ease of use consists of the usability of a service. Important issues here are a clear overview of the service, fluent navigation, smooth user interaction, personally and contextually relevant information and not requiring personalization. Services need also to be designed to support momentary usage on move and should also support a variety of devices, networks and technical infrastructures. (Kaasinen 2005)

As also de Ruyter et al. (2001) pointed out, trust is also an important issue in customer adoption. As services involve more and more the personal lives of people and collect more and more personal data, customers feel a certain amount of risk. To provide more trust, the service should be designed to give a customer feeling of being in control and actually letting a customer to be in control. Also information of security issues during the service is very essential. The structure of a service should be designed so, that the possibility to make errors is as small as possible and that there are clear instructions what to do if an error occurs. Finally, a customer should be informed why personal data is collected, where it is stored and who uses it and in what purposes. (Kaasinen 2005)

Finally, the perceived ease of adoption actually decides whether a customer wants to use the service or not. First of all, a customer should be told how the service would facilitate his normal life. Examples of this can be seen in the airline industry, where mobile services are typically presented and promoted in websites, in customer loyalty news and in in-flight magazines, for example. Services should also require a minimum amount of effort from a customer. They should be easily installed and also removed when they are not needed anymore. Finally, services should fit into existing usage cultures but at the same time they should provide something new and innovative. (Kaasinen 2005)

As a conclusion, it can be argued that the important issues in customer adoption of electronic services are perceived value/advantage, perceived ease of use, trust and perceived ease of adoption. In addition to this, according to the arguments of de Ruyter et al. (2001), also a company's reputation is obviously an important factor in creating trust and further improving a customer's adoption of electronic services. The issues mentioned by Kaasinen should primarily be used to analyze the adoption of mobile services, but they may also be applied into other forms of electronic services with certain amount of prejudism.

6.3.3 E-Service Quality

As in traditional services, service quality is an important issue also in electronic services. Currently, there exists already some amount of research of electronic services' quality that is derived mostly on the theories of traditional service quality. The major objective of several studies has been to find some factors that influence on e-service quality. In several cases, this is made by analyzing SERVQUAL method and trying to modify it to fit into electronic environment. Some of the most remarkable authors that have been studying e-service quality are Chaffey & Williams Edgar (2002), Gefen (2002), Parasuraman (2002), Santos (2003) and Voss (2003).

Gefen (2002) analyzes SERVQUAL method and argues that when analyzing web services, the factors of the method should be reduced to three: tangibles, a combined dimension of responsiveness, reliability and assurance and empathy. However, in their research Chaffey & Williams Edgar (2002) argue that all the factors of SERVQUAL method are valid also for web environment. Parasuraman (2002), instead, found four main dimensions in e-service quality: efficiency, fulfilment, reliability and privacy. Santos (2003) also found several factors and she divided them into incubative dimension and active dimension. Incubative dimension relates especially into websites - how they are constructed and created – and they include ease of use, appearance, linkage, structure and layout and content. These things can be created before the website is put in use. Active dimension, instead, relates into the activity of a service and it includes reliability, efficiency, support, communications, security and incentives. Also Voss (2003) edited SERVQUAL method to fit into electronic environment but his main contribution was to analyze earlier theories of service quality and then study how they could be implied into electronic environment. As a result, Voss presents a sequence dependent sand cone model of e-service which describes the components of e-service quality.

The sand cone model presented by Voss (2003) (FIGURE 7) is divided into three sections: foundation of service, customer centred service and value added service. According to Voss, customer centred service and value added service are, especially, the areas that can be improved with electronic services. The foundation of service forms out of site responsiveness, site effectiveness and fulfilment. Site responsiveness refers to a company's ability to respond to the queries sent via company's website. Site effectiveness, on the other hand, measures how well a website meets the needs of its users by analyzing measures of effectiveness and usability. Finally, fulfilment refers to actual delivery of service. Customer centred service forms out of trust, information & status and configuration & customization. Trust is still one of the major challenges in electronic world, and hence, companies should be able to handle trust issues effectively. Informa-

tion and status refer to an ability to offer the status of delivery process etc. at any time. Today, different services have to be able to be used around the clock, and hence, it is important to offer customers such services that they can use whenever they like. Finally, configuration and customization refers to customers' ability to configure and customize services and products they use. Value added service, eventually, consist of proactive service, value added service and service as an experience. Proactive service means that a company should have ability to store and take advantage of customer information to provide proactive services for customers. This also obviously means taking advantage of CRM systems. Value added service means providing services that support the actual service provision for a customer. By doing this, a company may gain additional customer satisfaction, customer retention and incremental revenues. Finally, service as an experience mean that services can be created to be experiences for customers. This can be actualized with practically anything but the main point is that a customer should get something to remember about.

The difference between the sand cone model and other researches is that the sand cone model takes many different service theories into account. It does not only focus at details of some area but it takes a bit wider look into the whole service provisioning. It does neither base at some particular theories of service quality (such as SERVQUAL) but it bases on several basic theories and issues behind the whole service provisioning concept. For example, the model notices customer expectations which are one of the most critical issues in service provisioning. This makes the sand cone model currently one of the best ways to analyze e-service quality.
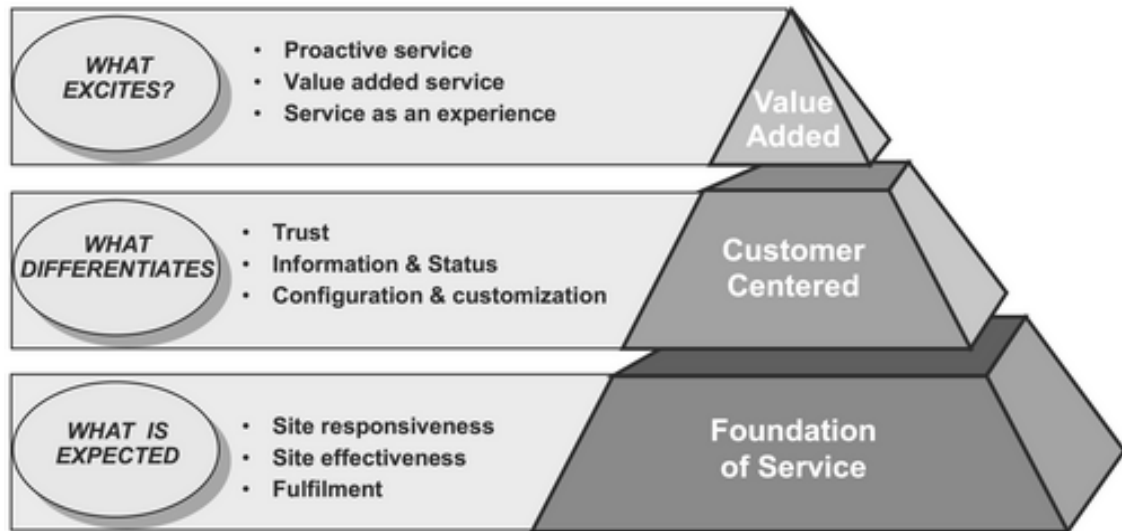
FIGURE 7. The sand cone model of e-service. (Voss 2003)

Gurau (2003) have criticized earlier e-service quality studies by arguing that models meant to analyze e-service quality are too general and abstract. By this, Gurau means that the models rarely give any concrete instructions what to do and tend to only highlight issues that are important. To improve the situation, Gurau presents a method to implement a complete e-service quality pro-gramme. According to Gurau, the implementation of e-service quality pro-gramme consists of two phases. First, a company needs to identify the optimum level of e-service quality of each market segment by using a predictive model that integrates customer's satisfaction, customer's profitability, the competitive conditions of the market and company's capabilities. This gives a company the piece of information needed to implement the actual programme. After this, basing at the first phase, a company needs to create a CRM system that can provide a company the necessary information, procedures and strategy for de-signing, implementing and managing the required e-service quality level on a long-term basis. So, as a summary, Gurau (2003) argues that the most important components of creating an e-service quality programme are an implementation

of a CRM system and a customer-centric approach through the whole organization. This requires a careful re-design of the company structure and processes.

6.3.4 E-business models

E-business models are another important issue that relates into the provision of electronic services. While the general targets of a company are set in the company's strategy, a business model describes this strategy in a more detailed level. To be more precise, a business model describes the basics of business and value creation in relation with the organization's architecture and infrastructure. This means that it describes such issues as product offering, IT-infrastructure, financials, customers and supplier relationships, for example. (Heikkilä et al. 2004) In other words, a business model is a concrete tool to concretize the strategy of a company.

E-business model is described as "an Internet-enabled business model" (eFactors 2002). Naturally, this means that e-business models try to describe a company's business in the electronic environment. The eFactors project (2002) presents the e-business model framework that is especially meant for identifying key factors that influence e-business model adoption, this means inhibitors and accelerators. The framework is divided into five set of factors: technology, individual, organization, industry and society.

- Technological factors are service performance issues, the aspect of commitments, integration issues, internal IS-platforms, generic business services and interoperability & interconnectivity issues.

- Individual factors are geographic, culture, education and experience, transactional, psychological, behavioural, individual differences and demographic.

- Organizational factors are products and services, management and structure, markets and customers, resources and capabilities, partnership, efficiency and organization culture.

- Industry factors are product characteristics, type of industry, suitable co-operation partners, competition, industry structure and customers.

- Society factors are region/geography, cultural, economic, legal/regulation/policy, ethical & professional, social capital/social networks and social structure. (eFactors 2002)

The factors presented by eFactors offer a very comprehensive list of factors either inhibiting or accelerating the adoption of e-business models. To be able to create a successful and benefit providing e-business model, a company should analyze the factors presented in the framework and realize its own readiness to do e-business. Hence, the eFactors framework provides an excellent tool for companies.

From airlines' electronic services' point of view the eFactors framework is actually rather important. The electronic services created by airlines are often meant to cover international areas and they often include several partners. This can make them rather complex. Hence, there are lots of issues that need to be taken into account when creating these services and e-business models. By using eFactors framework an airline can assure that it has taken the most important issues into account when creating electronic services.

In addition to the eFactors framework, another important issue relating to business models is business networks. Today companies form tighter and tighter cooperation relationships with their strategic partners and the strategies and business ideas become more united (Heikkilä et al. 2004). This is also true in today's airline industry as different kinds of partnerships with other service providers have become very common. Airlines have created partnerships with, for example, travel agencies or different kinds of travel services agents or providers. Also airline alliances have become very common which pushes airlines into closer relationships with each other. The purpose of creating business partnerships and networks is typically to gain advantage from partners by achieving new technologies or markets, by shaping competition, sharing risk or costs,

pooling resources, reducing uncertainty, achieving economies of scale or by sharing technologies, production methods or innovations. To reach these objectives, the partners should create a joint business model that would take the requirements of the whole network into account. (Heikkilä et al. 2004) This means that also e-business models should be joined together. From the airline industry's point of view this means that networked electronic services require also a joining of e-business models with partners.

6.4 Summary

The main contribution of chapter 6 was to analyze important issues relating to provision of electronic services. The analysis started by presenting basic features of traditional services mainly according to Zeithaml & Bitner (2003) and Grönroos (2001). This was followed by a presentation of existing studies of services in the airline industry. As a result, it was found out that the existing studies of services in the airline industry provide some useful information and viewpoints for the creation of electronic services. Especially the enhanced travel process model was found to be an excellent tool as a basis for the provision of electronic services.

From electronic services' point of view, this chapter analyzed general features of e-services, factors influencing on the provision of e-services, customer adoption of e-services, e-service quality and e-business models. Generally, e-services were seen as an enhancement of traditional services due to advanced technology. E-services were found to offer mobility, flexibility, interactivity and interchangeability and they were also found to overcome some basic challenges of traditional services. The core of e-services was found to be a customer-centric view that should be used to improve customer satisfaction and retention. The amount of detailed factors influencing on the provision of e-services was big and they were presented in two tables. The issues influencing on the customer adoption of e-services were found to be perceived value/advantage, perceived ease of use, trust, perceived ease of adoption and a company's reputation. E-

service quality was analyzed through several authors but the sand cone model of e-service presented by Voss (2003) was found to be the most suitable one. The model separated the factors into three parts; foundation of services, customer centered and value added; and they all consisted of some factors.

Finally, the chapter analyzed e-business models. First, some general issues regarding to business models were presented. This was followed by the presentation of the eFactors framework which presents five dimensions of inhibitors or accelerators for creation of e-business models: technological, individual, organizational, industry and society. The framework was found to offer great benefits for airlines when they analyze their readiness to create electronic services. Finally, it was also mentioned that in today's networked airline industry, joining e-business models together with partners creates also a remarkable challenge.

7 THE AIRLINE ELECTRONIC SERVICE MODEL

This chapter presents the airline electronic service model. The model is constructed basing on the earlier parts of this research and it innovatively combines different areas that were found important.

7.1 The Components of the Model

The airline electronic service model is presented in FIGURE 8. The model consists of an electronic service that is described between an airline and an airline passenger. In addition to this, also network partners relate to the provision of an electronic service. The core of the model is the actual travel process that consists of several sequential steps. Electronic services operate interactively with the travel process creating more value for a passenger. Around the combination of the travel process and electronic services, there are several components that influence the provision of electronic services. The following describes each component of the model more specifically.

Actors

The three actors of the model are an airline passenger, an airline and network partners. An airline passenger is the person who actually goes through the actual travel process, in other words, travels. It should, however, be noticed that in some cases there is also a customer that may be a different unit than a passenger. This kind of a case would be, for example, a situation when an employee travels but an employer makes the reservation and pays the trip. In this kind of a case electronic services might be used both by the actual passenger but also by a representative of an employer. This means that from an airline's point of view this difference should be acknowledged. In the following, a passenger term includes also a customer. An airline is the actual airline that provides an electronic service and the actual flight service. Network partners are partners of an airline who participate both in the travel process and in the provision of elec-

tronic services. So, they include partners that, for example, offer complementing travel services.

Airline's Strategy

The model bases on the fact that an airline has a strategy that determines its way to operate. A strategy defines how all the functions inside an airline are performed to get an airline to go to the wanted direction. This includes the actual flight operations, supporting operations and also network partners. For example, a strategy of an airline may emphasize such issues as quality, punctuality and flexibility or focusing at some particular passenger groups. These all determine the way how all the functions inside an airline should perform. Hence, a strategy of an airline creates also the basic frame for the provision of electronic services.

E-business models

Basing on the strategy of an airline, an e-business model describes more concretely how electronic services are utilized. An e-business model describes the business logic and value creation of electronic services in relation with the organization's architecture and infrastructure. More precisely, it describes such issues as product offering, IT-infrastructure, financials, customers and supplier relationships, for example (Heikkilä et al. 2004). An important issue in e-business models is also their interaction with e-business models of an airline's network partners. The strong partners, who participate in the production of electronic services and also travel process, should be taken into account in the e-business model. The more important the partner is the more combined e-business models should be.
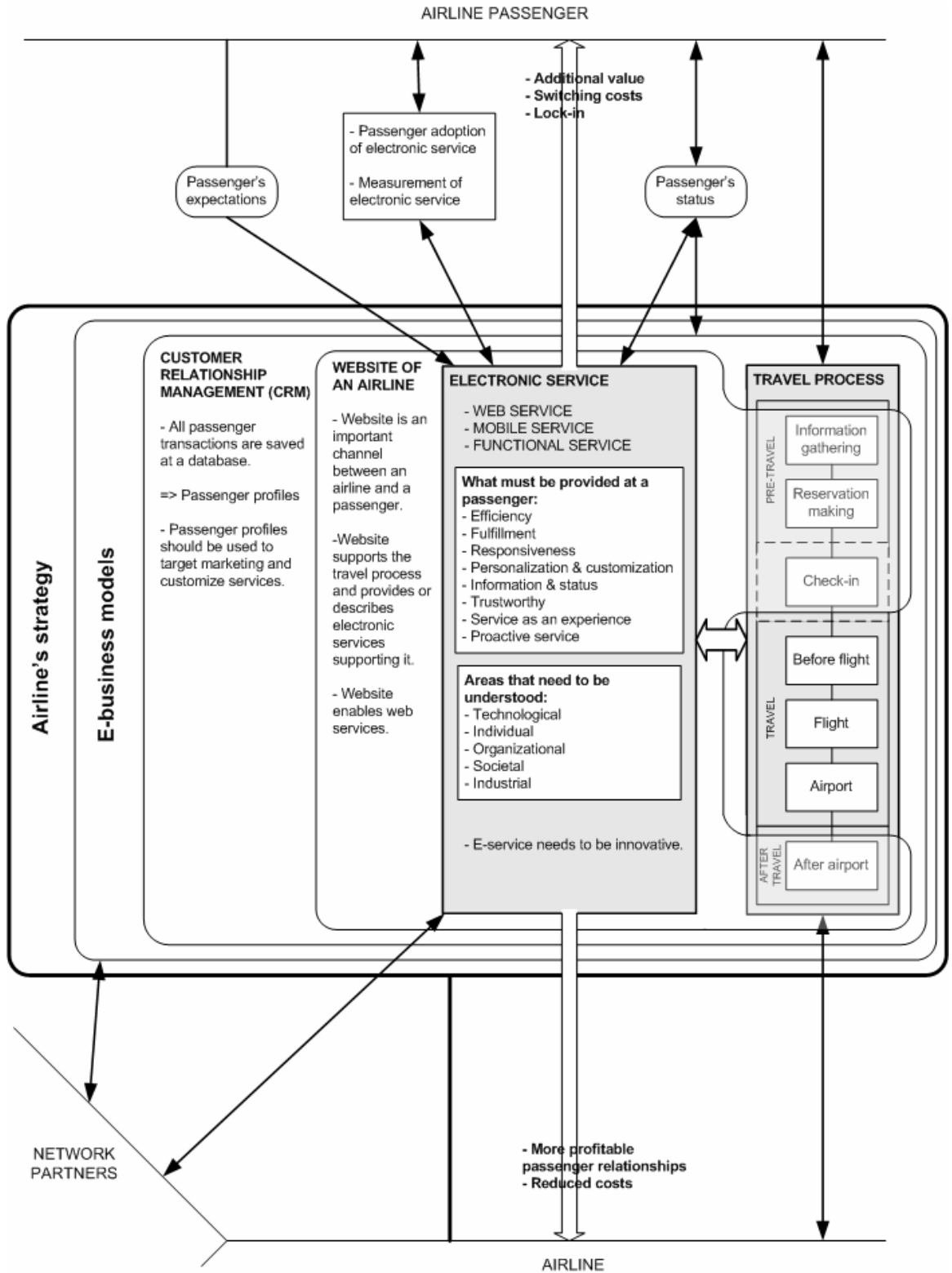
FIGURE 8. The airline e-service model.

Travel Process

Travel process is the actual core service of an airline. It consists of seven sequential phases: information gathering, reservation making, check-in, before flight, flight, airport and after airport. Information gathering and reservation making are phases that typically have to be performed before the actual trip. Check-in is a middle phase that can be performed either before arriving at the airport or after it depending on provided services and the will of a passenger. Before flight, flight and airport are phases that form the actual trip. They consist of functions between check-in and leaving airport in the destination. Finally, after airport means functions after leaving airport. Each phase consists of tasks that are needed to be performed before moving to the next phase.

Electronic Service

The main role of an electronic service is to complement the actual travel process. This means that an electronic service should base on making the travel process easier for a passenger by offering a combination of web, mobile and functional services. The objective of all this is to enhance the value experienced by a passenger both assisting the actual travel process and offering services that only create more value and joy.

A starting point for the provision of electronic services is a passenger's expectations. Basing on their earlier experiences, promotion and surrounding world, a passenger expect something from electronic services. If provided electronic service does not fulfill these expectations, a passenger disappoints. On the other hand, if a service is better than a passenger expects, he will be delighted. To handle passengers' expectations a company should try to understand expectations by continuously analyzing surrounding environment. If several airlines offer s certain kind of service, it is likely that passengers start to expect that service from every airline. Also, if some new general innovation (such as digital TV, for example) starts to become a commodity, passengers will probably start

to expect services related to it. Finally, also promotion of an airline is one major creator of expectations. If an airline promotes itself as a modern airline, passengers will probably expect modern and innovative services. Hence, an airline should be aware of the influence of its public image to passenger expectations.

In today's electronic world, there are some basic issues that customers in general tend to expect: efficiency, fulfillment and responsiveness. First of all, all electronic services must be fast, clear, simple and easy to use. Today's users expect all electronic systems to be efficient why they do not want to use services that do not meet the basic requirements of usability. Electronic services must also fulfill the basic needs they are meant to fulfill. This means that services must really offer the solution they are promised to offer. Finally, responsiveness means that a user must be able to contact the airline in case of problems or other issues and also to receive an answer. So, also in electronic services, a user must be offered a clear contact channel that really provides a fast contact and response between an airline and a user.

After meeting the basic requirements of electronic services, additional value for a passenger can be provided by offering personalization and customization, information and status and trustworthy. A service should be customized for each individual passenger according to his status. The status should be formed by a passenger profile that, instead, is created through a CRM system of an airline. For example, the status division could be "business passenger" and "leisure passenger" or anything else that divides passengers into the groups that are important for an airline. Basing at this status, all electronic services offered at a certain passenger should be customized to meet the specific needs of the certain status. In addition to this, a passenger should also be given a possibility to personalize his services according to his preferences or needs. An electronic service should also provide information and status about the whole travel process. A passenger should all the time be aware of his status in the process and all essential information regarding to the status should be provided. Finally a ser-

vice should be trustworthy. Trust is still an essential issue in all electronic systems in the world and it is one of the main inhibitors in the adoption of electronic services. Hence, a passenger should be carefully told about security issues in every possible situation. If a service feels and appears trustworthy, a passenger will gain more value from using a service and will probably use it again. Instead, if a passenger cannot be sure that the service is safe, he will not probably use it in future.

To create maximal value for a passenger, an electronic service should be proactive and also as an experience for a passenger. Proactive service means that a service should foresee what a passenger wants to do and then present a new service for a passenger before he even realizes needing it. When all services complement each other and are linked together the whole travel process goes through without a passenger even noticing it. That is enhanced value as its best. In addition to this, also network partners' services should be connected to electronic services in a similar way. A service should also be as an experience for a passenger. A passenger should feel that the service he uses is unique and something brilliant. If a passenger feels that he has used an innovative service which uniquely solves some problems, he will probably be enthusiastic about it and will also share the experience with other people. This actually leads into an important issue regarding to electronic services: they must, before anything, be innovative. An electronic service needs to offer something unique, new and special to provide maximum value. Hence, an airline should continuously monitor other airlines' services and try to create something more unique that would even more brilliantly create more value for passengers.

To make an electronic service fit precisely into each separate environment (geographic or cultural, for example), an airline needs to observe five main areas: technological, individual, organizational, societal and industrial. These areas of factors determine the environment in which a service is provided and, hence, set the basis for the provision of electronic services as well as e-business models.

Technological factors form the basis for the technological infrastructure of electronic services. They determine how electronic services can be provided technically. Individual factors relate to actual customers and their specific features that may influence their readiness or will to use electronic services. Organizational factors relate to the company itself and to the way how the whole organization operates. Societal issues relate to the surrounding society and the way how society works. Finally industrial factors relate to the industry a company is in. (eFactors 2002) By analyzing and understanding these external factors, an airline can provide electronic services that would suite for different passengers from different geographic areas, cultures and backgrounds. Understanding these factors does also provide a better starting point for the customization of services.

The issue that finally affects the final usefulness of an electronic service is passenger adoption. The way how passengers adopt an electronic service is critical for the usefulness of electronic services. Passenger adoption forms out of five factors: perceived value/advantage, perceived ease of use, trust, perceived ease of adoption and a company's reputation (De Ruyter et al. 2001, Kaasinen 2005). Perceived value/advantage, ease of use and ease of adoption are issues that can be dealt with careful planning of electronic services. By creating a service according to issues presented earlier, a service should be easily adoptive. Trust, instead, depends on how much a passengers can trust electronic services and an airline itself. Finally, a company's reputation is an issue that cannot be changed in a moment. Creating a good and trustworthy reputation requires long-term actions and careful planning. However, an important point in several aforementioned issues is the word "perceived". This means that the adoption depends on how a customer sees a service, not how carefully it is created. That is why it is not enough that an airline just creates electronic services by some guides or manual. Instead, electronic services should base on passengers' feelings and comments. Hence, an airline should continuously measure and analyze passengers' feelings about services and also their way to use them. By doing this, an

airline can constantly be conscious of how passengers feel about services, what is good and what is bad and how ready they are to adopt new services.

Website of an Airline

A website of an airline is an important channel between a passenger and an airline. Generally, in a website, a passenger can find all the possible information about an airline itself and its services. A website should describe the travel process as well as all the services supporting it. Hence, from a website a passenger should find all the possible information he needs to complete the actual travel process. A website also enables web services that can be used to support the travel process in information gathering, reservation making, check-in and in after airport activities.

Customer Relationship Management

Customer relationship management (CRM) is the cornerstone of the provision of electronic services. If a maximal value for a passenger is wanted to be created, a CRM system should be in use. A CRM system should base on collecting all possible passenger data both from the actual travel process and also from electronic services. This means that all transactions between an airline and a passenger should be saved in a database and a passenger profile should be created. This passenger profile should be used to identify different passenger behavior patterns which create a passenger status for each passenger. Finally, a status should be used as the basis for electronic services. According to a passenger status, electronic services should be created to meet the specific needs and wants of a certain passenger.

7.2   A Description of the Travel Process

To give a better picture of the role of electronic services, they are here described in relation with the travel process. An airline offers a travel process through which a passenger goes. While in the travel process, a passenger must complete

different tasks. At first, a passenger must search for information about an airline or its flight services to be able to find suitable flight and to gain important information regarding to his trip. After this, a passenger needs to make a reservation for the preferred flight. Before the actual departure of the flight, a passenger needs to do a check-in. After a passenger has done the check-in, he can go to the transit area of an airport. At this area he has to find his departure gate and board at an aircraft. This is followed by the actual flight to the destination. At the destination, a passenger needs to find the correct baggage claim and needs to collect his luggage. Finally, a passenger can leave the airport.

The travel process described above can be supported with electronic services. The information gathering phase can be supported greatly with an airline's website. The same is true regarding to the reservation making. A website of an airline can offer a passenger great benefits when searching information and making reservations. A passenger can search the information he wants at any time he wants without anybody influencing his decision making. At this point, it should be remembered that a person who completes the information gathering and reservation making, might be a different person than the actual passenger. The check-in phase can be supported by either by web services, mobile services or functional services. A check-in service can be offered both on a website, through mobile devices and at the airport with self service check-in kiosks and a passenger can chose which method he wants to use. Before flight phase can be supported with mobile services and functional services. Mobile services can be used to guide a passenger to the right gate and to report any changes in the travel plan. Functional services can be used, for example, to offer an automatic departure gate. The ways to support the actual flight service with electronic services is quite limited. During the flight, there are actually no obligatory tasks that should be performed. Hence, there is no need to support the travel process during the flight. After the flight, however, a passenger has to find the correct baggage claim. This can be again supported with mobile services. Finally, when a passenger leaves the airport, he can be offered both web and mobile services.

For example, electronic services can be used to support error handling such as tracking lost luggage.

In addition to the actual support of the travel process, a passenger can be offered several value adding services. These services would include all services that do not straightly relate to the travel process but that create more value for a passenger. These kinds of services would be, for example, services that complement the actual travel process or offer easiness or fun. Additional value can be, for example, created by linking some services of network partners into own services. For instance, in the reservation making phase, travel insurances of a partner company or other travel reservations can be offered. The web services of partners can also be combined to form an ultimate travel shop. These issues depend, however, heavily on the strategic choices of an airline.

All electronic services offered at a passenger should be customized according to the status of a passenger. This means that if a customer profile tells that a customer tends to travel a lot between some specific cities (business traveler), the services offered at him should utilize this fact to make services more efficient and easy. For example, a more specific promotion and offers could be used, business traveler's e-services could be promoted, the menus on a website could be re-categorized as well as the menus in mobile services.

By using electronic services, a passenger should gain improved value. Also more targeted marketing, customized services and strengthened relationship creates greater switching costs which together with greater value creates higher lock-in. This means that a passenger is willing to stay a customer of a certain airline and is less willing to change an airline. From an airline's point of view, this creates bigger customer loyalty and more profitable customer relationships together with lower costs. In other words, this creates competitive advantage.

7.3 Summary

This chapter presented the airline electronic service model which bases on the earlier chapters of this research. The main components of the model were airline's strategy, e-business models, travel process, electronic service, website of an airline and customer relationship management (CRM). These components were described in relation to the three main actors: airline passenger, airline and network partners. The main point of the model was to describe that the main role of electronic services is to support the actual travel process. In addition to this, also other value adding services should be offered to create a maximal value for a passenger. The amount of value created depends on several factors that were presented in the chapter. Other important issues influencing the provision of e-services were passenger's expectations, passenger adoption and a passenger's status.

8 AIRLINE ELECTRONIC SERVICE MODEL VALIDATION

This chapter describes the validation of the airline electronic service model.

The validation process of the airline electronic services model bases on the article of Kasanen et al. (1991) in which the authors argue their views about a constructive research process. According to their arguments, a construction can be validated by using a two phase market test. The first phase is a weak market test which basically validates acceptance and willingness to use the construction. The second phase is a strong market test which validates the actual functionality of the construction and receives some hard results. In this research, the validation is done only according to the first phase which means that the validation tries to reveal only the acceptance of the model. According to Kasanen et al. (1991), even the weak market test is a very strict test, why it can be seen valid enough for this research.

The actual market test was done by making three focused interviews for electronic business specialists of two airlines. Another one of the airlines operated world-wide and offered scheduled flights to different continents. Another airline operated regionally only in Europe, but it was an affiliated company of a larger airline operating world-wide. The three persons interviewed were specialists in the field of electronic business and they had quite an extensive view for electronic services in the airline industry. The persons had a background from electronic systems and the airline business.

The interviews were performed as focused interviews. The structure of the interviews was constructed around the interview questionnaire guide (APPENDIX 1) that was given at the interviewees beforehand. The questionnaire guide was created by the airline electronic service model. The interviews were performed in a calm environment without any outer disturbance. The durations of the interviews varied between 1 hour 20 minutes and two hours.

The interview situations followed the questionnaire guide and in each part the interviewee was first asked to describe the subject with his own words. After this, the interviewer started to lead the discussion towards the correct way by posing more specified questions. In the end of the interview, the airline electronic service model was presented and general comments about it were asked.

8.1 The Components of the Model

Background Reasons for Providing Electronic Services.

In general, the interviewees saw three main reasons for conventional scheduled providing electronic services. The first main reason was cost savings. This is obtained through savings in the production process, in materials and in direct selling. The second main reason was increased sales through the Web through which completely new customer groups can be found. The third main reason was improved service offering. This means trying to create such services that make the whole travel process easier, simpler and nicer for a passenger. Interestingly, however, two interviewees mentioned that the main focus of electronic services in the airline industry has transferred towards increased sales. This seems to argue that even though improving customer services is also seen important, there is a strong pressure for business case behind every electronic service.

When asking about the aim to create switching costs, lock-in and customer loyalty with electronic services, two interviewees pointed out the difference between leisure passengers and business passengers. In leisure passengers' case, the loyalty cannot be solely achieved with electronic services but electronic services can support other customer relationships systems such as customer loyalty programs, for example. By doing this, electronic services can enhance the lock-in aspect for customer relationships. In business passenger's case, instead, the meaning of electronic services was seen a lot bigger. In this case, two interviewees argued that lock-in and switching costs can be created by offering elec-

tronic services that help to maintain the customer relationship, to organize traveling and to make the traveling as easy as possible.

All interviewees also agreed that with electronic services an airline's image can be maintained. By offering modern services, an airline can communicate an innovative image and show that it is willing to develop something new for its passengers. However, one interviewee pointed out that to be able to communicate innovativeness, the whole company needs to be innovative. This means that only with innovative electronic services an airline might not give the complete image of innovativeness. Instead, the whole organization needs to send the same message.

Airline's Strategy

Each interviewee saw an airline's strategy as one of the most important factors behind electronic services in the airline industry. The strategic choices in competition, partnerships and in sales channels rule strongly the development of electronic services. Especially the sales channel strategy defines the deepness an airline participates in electronic and especially online operations. Also values of an airline rule the way how electronic services are created. For example, if punctuality or such is one of the values of an airline, also electronic services need to be extremely efficient and need to operate according to this value. As a conclusion, it can be argued that strategy of an airline is one of the most important factors in the provision of electronic services.

E-business Models

The meaning of e-business models was seen important when providing electronic services. It was pointed out that if an airline has decided to make some serious business with electronic services, there needs to be clear business oriented plans to describe the business side of these services. This again depends heavily on the sales channel strategy of an airline. As a conclusion, it can be ar-

gued that also e-business models are important when providing electronic services and especially in e-commerce operations.

Network Partners

Network partners were seen as an important factor by all interviewees. Every interviewee agreed that in today's competitive environment network partners are practically a necessity when providing electronic services. Making all the systems and providing all possible services by self would be far too expensive and slow, why it is necessary to have at least one partner to support this process. By using network partners an airline can offer its passengers more versatile services cost effectively.

Customer Relationship Management

According to the interviewees, having customer knowledge is the main requirement for a successful development of electronic services. Customer knowledge should be used to identify customers, create customer segments important to an airline and to create customer profiles. By doing this an airline can identify important customers, target its marketing communications more precisely and offer its passengers more customized services. So, it can be concluded that customer relationship systems are important at the background of electronic services.

Website of an Airline

A website of an airline was seen as a channel to communicate, to sell and to support a passenger's travel process. From communication's point of view a website was seen as a window to a company that describes the products offered by an airline and that supports the decision process of a passenger. This confirms the arguments presented in the airline electronic service model. From selling's point of view a website was seen as one sales channel among other channels. The importance of the channel depends on the strategic choices of an air-

line. The support for a passenger's travel process is achieved by giving a passenger all required information regarding to his travel process and by enabling some supporting electronic services. An enablement of self-services was also seen an important issue in today's world when a passenger may want to handle his own business at any time of a day. Customization with help of customer relationship management systems and customer profiles was also seen as a useful way to improve the effectiveness of a website.

Electronic Service

The role of electronic services was confirmed to be supporting the actual travel process. According to all interviewees, electronic services should ease the travel process of a passenger by offering him as easy services as possible. Electronic services offering should, indeed, base on identifying the different parts in the travel process and creating actually useful electronic services that can truly create benefit for passengers. An important part of all this is also the production process of an airline. To create a successful electronic service, everything needs to work also in the production process and the production process should be closely linked with the travel process.

From the actual features of electronic services, the interviewees pointed clearly out usability issues. Every interviewee mentioned easiness, clarity and efficiency as one of the most important features of electronic services. Another important feature was trustworthy which contains all security issues. The third important issue was that a provided service needs to fulfill some real need. There is no point in creating services that passengers do not actually need. Hence, it is important that a correct service is created and that it fulfills the need it is meant to fulfill.

An ability to contact airline in every situation including problem situations was also found important. Every interviewee pointed out the importance of offering several contact channels and informing passenger about these channels. One

interviewee mentioned also a new co-browsing help system that enables problem solving and support in online situations.

Customization and personalization were generally seen as a useful way to improve the quality of electronic services. However, the importance of this was seen to be a lot bigger in case of frequent passengers such as business passengers. Generally, every interviewee agreed that by identifying passengers and offering them more customized services can benefit an airline. Especially customizing services according to the status of the travel process was seen a futuristic and very clever way to offer more value for a passenger. An ability to let a passenger to personalize his own services was also seen useful, but it was clearly seen less important than customization. An ability to let a passenger to personalize services was seen more like a final step of services when everything else is ready.

The argument that electronic services should provide information and status about travel process divided opinions. Two interviewees argued that information and status information should be provided for passengers. One interviewee did not see that important. In general, it was pointed out that the requirement of information and status information depends heavily on the role of a passenger. Whereas leisure passenger needs some general information like destination information or help in the travel process, a business passenger does not want to be bothered by irrelevant information. Instead, a business passenger might want to know the status of his other reservations or status of his connecting flights. As a conclusion, it could be argued that electronic services offering information and status information can provide benefits for an airline as long as the role of a passenger is observed. And again, this connects into customer relationship management and customization and personalization options.

According to the interviewees, electronic services should also offer passengers some kind of experiences. However, also this requires looking into the role of a

passenger. A business passenger might not want to achieve any experiences during his regular travel. Instead, a leisure passenger might want to experience different things during his rather rare travel. Hence, it can be argued that when keeping the role of a passenger in mind, some experimental features should be added into electronic services to create more value especially for leisure passengers. One additional observation was also that great functionality may offer some kind of a feeling of experience. This means that if a passenger feels, for example, that some part of the travel process went through extremely well, he might sense some kind of an experience feeling and might remember it for a long time.

Every interviewee also agreed that electronic services should definitely operate proactively towards passengers. Every interviewee had an opinion that in future, proactivity is an essential mean to differentiate from competitors and create more value for a passenger.

The importance of innovativeness in electronic services was considered to depend on strategic choices of an airline. If an airline's strategy is to be innovative and give innovative image, then it is important to offer innovative electronic services. From competitive advantage's point of view the innovativeness of only electronic services was not seen so important.

Finally, the argument that electronic services should be linked together to form a unique combination was fully accepted. Every interviewee argued that the service concept should be joined into one combination to create the maximal value for a passenger. This also includes the electronic services provided network partners.

One part of the interview covered five areas that were found important when providing electronic services in new environment (geographic or cultural, for example). The problem of this area was that only one interviewee had been involved with developing electronic business systems world-wide. Other two interviewees had been participating international development less or their ex-

perience was limited only on a certain geographic area. Hence, this area could not be covered extensively enough to make a scientific generalization. However, these factors have already been studied and validated in the eFactors project (eFactors 2002), why it can be argued that these factors should always be taken into account in electronic environment. Even so, the comments presented by the interviewees are presented here. Technological environment was seen important by two interviewees. Especially connecting different systems together was seen an important challenge. However, one interviewee argued that technological environment is not very important anymore as technological environment is adequate in most countries. In general, it could still be argued that technological environment should be observed. From individual issues culture, language and different kinds of aesthetic preferences were mentioned. This means that people are different in different areas in the world and these differences should be observed. From organization's point of view it was mentioned that an organization should adapt to a different environment. Also local expertise should be used. Societal issues should be observed as there might be differences in economy or in legislation, for example. Finally industrial differences should also be observed. Especially competition, pricing, customer distribution between business and leisure passengers and also preference of state-owned airlines may vary greatly in different regions. As a conclusion, it can be argued that the interviews partially supported the five main areas and together with eFactors (2002) result, it can be argued that technological, individual, organizational, societal and industrial aspects should all be observed when providing electronic services in new environment.

Passenger's Expectations and Service Adoption

Regarding to a passenger's expectations, every interviewee saw expectations as the starting point for the development of electronic services. It was pointed out that all electronic services should base on the needs of passengers why it was seen important to be able to know what passengers really need and want. The

mentioned methods to collect passengers' opinions were normal feedback channels, marketing researches, surveys, focus groups and piloting customer companies for new services and systems. Also own personnel were mentioned to collect passengers' views.

Also a passenger's ability to adopt electronic services was seen as an important issue. It was pointed out that typically there is some kind of an existing assumption how well a passenger will adopt a new service. The adoption rate and success is also monitored after the service was put in use. However, even though interviewees saw it important to analyze the rate of adoption, it seems that they do not measure the rate of adoption before opening a new electronic service. As a conclusion, however, it can be argued that a passenger's expectations and adoption are important issues in the development of electronic services.

8.2 Discussion

According to the interviews, it seems that most of the parts of the model were confirmed. As a matter of fact, the only parts that were not fully accepted were innovativeness as an important feature of electronic services and the five areas of factors important when providing electronic services in different environment. These issues were discussed more specifically above.

An important issue that was pointed out by the interviewees, is the difference between business and leisure passengers. In several occasions during the interviews, the special character of these two different passenger groups was mentioned. Leisure passengers tend to make only few trips a year and they want to feel being on a trip when they use airline services. They do not require very efficient electronic services but they accept some support during their travel process. Business passengers, instead, are frequent travelers who know the basic routines of the travel process. They want the whole travel to be as easy as possible and they do not want to seek any special experiences. Of course, the

separation into two groups is very rough and there are several passenger groups who are combinations of these two main groups.

The way how these different passenger groups are taken into account by an airline depends on its strategic choices. Some airline might focus only on business passengers while other might want to service all passengers equally. This determines the level an airline wants to target also different electronic services for certain passenger groups. In the airline e-service model this difference is covered in two parts: First, an airline's strategy was seen as an important background issue when providing electronic services. Second, the model was arguing that a passenger status rules the way how the services a provided for a passenger. Even though the model covered these areas, after the interviews, it became clear that the distinctions between different passenger groups should be emphasized even more. Thus, when providing electronic services, an airline should first know which passenger groups it wants to serve, and only then start to create services according to the special needs of these groups.

8.3   Summary

This chapter described the validation of the airline electronic service model. The validation was done by performing three focused interviews (a weak market test) for three airline specialists in the field of electronic business. The interviewees represented two different airlines.

According to the interviews, the airline electronic service model was validated nearly completely. The only two areas that were not fully confirmed were the five areas that need to be understood when providing electronic services in new environment and the argument that an electronic service needs to be innovative. Even though the five areas got some support, the background of interviewees does not fully enable a scientific generalization. Even so, the five areas can be seen important when providing electronic services in new environment. Innovativeness was neither fully accepted. It was mentioned that if innovative-

ness is strategically important for an airline, then also electronic services need to be innovative. However, if an airline does not try to be in the top of development, innovativeness in electronic service cannot be seen as a special way to reach for competitive advantage. In addition to this, the interviewees emphasized the influence of different passenger groups into the provision of electronic services. Hence, it can be argued that an airline should first know which passenger groups it wants to serve, and only then start to create services according to the special needs of these groups. Other parts of the model were validated which means that the model was accepted by airline specialists quite well. In their final comments, all specialists considered the model quite describing and correct.

9 CONCLUSION

This research started to study still rather unknown issue, electronic services, in the field of the airline industry. The amount of research about electronic services in general was quite limited and especially from the airline industry's point of view there did not seem to exist any research. Hence, the aim of this research was to be one of the first efforts to start studying the subject from the airline industry's point of view.

The research studied several areas that could be important in the provision of electronic services in the airline industry including the special features of the airline industry, competitive strategies, value creation and services. Through the analysis of these areas and an empirical analysis of existing electronic services in airlines, the airline electronic service model was created. As a result, the research presented a valid model that describes the factors that can be seen important when providing electronic services in the airline industry. Interestingly, the model got validated nearly completely even if it was the first attempt to describe the electronic environment in the industry. From the airline industry's point of view, this research seems to be the first comprehensive study of electronic services on the particular industry. There is no doubt that the model can benefit airlines in clarifying the role of electronic services among the existing service concepts and providing airlines help when seeking new ways to achieve competitive advantage. As competition in the airline industry is severe, airlines form alliances or strategic partnerships and the need to differentiate from competitors is hard, electronic services can definitely provide great benefits for them who can use them wisely. By taking all the factors mentioned in the model into account and joining them brilliantly in the existing strategies and services, an airline can, with no doubt, improve its competitiveness. The way how an airline wants to do this depends on its strategic choices.

9.1 Research and the Results

The major objective of the research was to create a valid model that would describe the important factors in the provision of electronic services in the airline industry. The examination was to be made through competitive advantage and the scope of the research was conventional scheduled airlines. The research problem was: "How a conventional scheduled airline can achieve competitive advantage by offering electronic services to its passengers?"

The research itself followed a constructive approach. In the beginning, the subject was studied in general. Electronic services of 13 airlines were analyzed and the current state of electronic services was revealed. The services were categorized under three categories: web services, mobile services and functional services. Basing at the analysis of existing electronic services and a literature review the airline electronic service model was created. The model described the role of electronic services in a conventional scheduled airline by placing an electronic service between an airline, an airline passenger and network partners. Also other important components were described in the model. In the final phase of the research, three focused interviews (a weak market test) were performed to validate the airline electronic service model. The persons interviewed were three specialists in the field of electronic business from two different airlines. The interviews were constructed according to the model and in the end of the interviews, the model was presented and general comments were asked.

As a result of the interviews, the airline electronic service model was validated nearly completely. It was confirmed that an airline's strategy, e-business models, customer relationship management and network partners are important components behind electronic services of conventional scheduled airlines. It was also confirmed that a website of an airline is an important channel between an airline and an airline passenger. The important features in electronic services were confirmed to be usability and effectiveness, trustworthy, fulfillment, responsiveness, personalization and customization, information and status, ser-

vice as an experience and proactivity. Innovativeness was seen less important in general. It was also confirmed that the development of electronic services should base on passengers' expectations and adoption of new services. The basic role of electronic services was confirmed to be the support to the actual travel process. The main objectives an airline can reach by offering successful electronic services were confirmed to be cost savings, switching costs and lock-in. However, an important observation here was that switching costs and lock-in can mostly be created for business passenger, not so much for leisure passengers. Hence, it is important for an airline to acknowledge this separation. The argument that when providing electronic services into new environments, technological, individual, organizational, societal and industrial issues should be taken into account, was not fully confirmed. Even so, it can be argued that these issues should be taken into account. An important observation in the research was that an airline should recognize the distinction of different passenger groups. This means that an airline should first know which passenger groups it wants to serve, and only then start to create services according to the special needs of these groups.

As an answer to the research question, it can be argued that a conventional scheduled airline can achieve competitive advantage with electronic services and it can be done by taking all the aspects in the airline electronic service model into account. Put in words, it requires a careful analysis of passengers and their expectations and ability to adopt services, a careful design of the actual electronic services and most importantly, an ideal combination of an airline's other services and electronic services together with network partners in such a way that the strategic objectives of an airline can be fulfilled. An important part of this is a careful recognition of important passenger groups, creating passenger profiles and utilizing these profiles to create more profitable and long term passenger relationships.

9.2   Limitations

The reliability of the results of this research is rather good but the small amount of interviewees slightly reduces it. Also the homogenous nationality of the interviewees might reduce the reliability. However, in the extent of this research, three interviewees from one country but from two different airlines can be seen enough to be able to achieve a reliable result. In future researches, however, to improve the reliability, more interviewees from several different nationalities and airlines should be used. In future researches, it should also be considered whether it would be reasonable to interview several persons together. Interviewing, for example, three or four persons from the same airline together would probably make the discussion more versatile and would bring more ideas and opinions up.

The validity of the research can be considered good. The research studies the issues it was supposed to study and the results seem to answer the questions set in the beginning of the research. The interview questionnaire guide covers all the areas of the airline electronic service model and all these issues were discussed in the interviews.

The results of the research can be generalized quite well into conventional scheduled airlines around the world and also partially for other types of airlines such as low-cost airlines or charter airlines. However, the strategic approach of these different types of airlines is typically so different that the model may not fully be suitable for other than conventional scheduled airlines. Some parts of the model, however, are rather valid for any airlines or even other transportation industries.

9.3   Areas for Further Research

In future, to improve the international reliability of the airline electronic service model, more comprehensive studies are needed. This could easily be done by repeating this research and increasing the number of interviewees and inter-

viewing people from several different nationalities and different airlines. In addition to this, the actual benefits of the airline electronic services model should also be studied by making more concretized studies. Also more concretized study about electronic services in the airline industry is needed. This research provided only the first and general analysis of electronic services in the airline industry why it did not focus very carefully into each separate area. Thus, in future, it could be reasonable to study each area of the model more closely to understand the specific features of different areas. Especially customer relationship management along electronic services and network partnerships are issues that are obviously important in future. Also the specific needs of different passenger groups, such as leisure and business passengers, should be studied more carefully.

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KLM   http://www.klm.com

Lufthansa   http://www.lufthansa.com

Northwest Airlines   http://www.nwa.com

Quantas   http://www.quantas.com

Scandinavian Airlines   http://www.scandinavian.net

Singapore Airlines   http://www.singaporeairlines.com

Varig   http://www.varig.com

APPENDIX 1. Interview Questionnaire Guide.

1 General information about the interviewees and the airline.

- Names, positions, contact details, name of an airline, country of origin, experience in the field of electronic services.

2 The reasons for providing electronic services for airline passenger?

- Objectives that are sought with electronic services both from an airline's and a passenger's point of view.

3 Important background issues when providing electronic services for airline passengers.

- The role of airline's strategy, e-business model, network partners, CRM-system and the focus at customer.

4 Important issues in the provision of electronic services

- The relationship of electronic services with a passenger's travel process

- A website's role in the provision of electronic services

- What features should an electronic service have to create maximum value for a passenger?

- Required understanding of environment in which a service is provided (for example, in international environment)

- A passengers' role in the creation and provision of electronic services