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A INCREASING CUSTOMER SATISFACTION AND BRAND DIFFERENTIATION THROUGH SERVICE DESIGN, A CASE STUDY IN THE AIRLINE SECTOR

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ABSTRACT

The aim of this paper is to present the development process of a service aimed at business class travelers in the context of the airline industry. The service-design approach adopted is based on the model proposed by Stickdorn and Shneider (2010). Different tools and methodologies were used for each step of the design and development process. In order to robustly describe the customer journey of the target group of users, the Customer Journey Map and the Service Blueprint tools were synthesized, in order to offer an improved and holistic description of all the possible steps a traveller takes during a journey. The same synthesized tool was also used to model and describe the designed service. This approach made the process of comparing the 'before' and 'after' states of the customer journey easier, especially due to the visual nature of the information.

The goal of the proposed service concept is to manage and simplify the process of an airline journey for business travellers. This is achieved through the concentration and centralization of different aspects of the journey. Emphasis was given to the luggage management system as research suggested that it constitutes the biggest part of a journey that could be reduced or skipped, time wise. Two services have been proposed, the first service is personal luggage management system and the second service aims to offer the leasing of the necessary clothes and accessories for business travellers.

Keywords: Service Design, Airline Industry, Case Study

1. INTRODUCTION

This paper presents a case study of a service designed in the context of the airline industry and with business class travellers as the target group. Air travel is an important global economic sector that plays a substantial role in global GDP and their growth is entwined (Tiernan et al., 2008). Also the airline industry plays a quintessential role in the support and the function of other sectors of the economy such as tourism or other professional activities centred on moving people or cargo. This paper looks into a segment of services for airline business travellers. Airline business travellers use air travel with a higher frequency and demand a much higher standard of services compared to people who fly for entertainment reasons. Airlines and the supporting ecosystem of companies are always looking for new ways to improve the services provided as a way to become more competitive and increase customer satisfaction. The needs are increasing as the figure of people flying is going to be doubled in the next fifteen years (Airbus, 2013). Service design offers a variety of different tools and methodologies aiming to co create services that can differentiate airline companies. The core of the service offered by the airline industries is the same so provided added services is what sets them apart.

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This case study focuses on baggage management as the research pointed towards that direction. Baggage drop off and claim are the most stressful and time consuming steps in the process of travelling. Using service design, and based on existing technologies we created two service propositions based on a more robust baggage management system. By gaining a deeper understanding of other parameters playing a role in the process of travelling we created two services with high synergy aiming to provide a holistic travel experience.

This case study was implemented in two stages. The introduction with the airline services sector held in Eindhoven during the studies of the author in the Design Academy Eindhoven. Two major airlines, AirFrance and KLM approached DAE to request the creation of product and service concepts. The procedure included several meetings with the companies and visits at Schiphol and Charles De Gaulle airports. The second stage was conducted at the University of the Aegean, Department of Product and System Design Engineer where extensive studies on service and service design sciences occurred. Through the use of service design methods and models the case study developed to its current state.

2. AIRLINE INDUSTRY

According to World travel and Tourism Council one billion people traveled abroad in 2012, with 52% of them, by air. The number of people traveling abroad is expected to reach 1.9 billion by 2032. Airline business travellers represent 15% of people traveling by air. The airline industry plays an important role in the global economy. It is a vital component of the leisure/tourism industry and remains essential to the conduct of international business (Tiernan et al., 2008). The Airline Deregulation Act in the US domestic market in the 1980s followed by Europe in the 1990s brought a differentiation in airline-business models with the emergence of low-cost carriers and with the network carriers relying more on hubbling (Bieger et al., 2007). The Deregulation allowed the introduction of new services raising the competition in the airline industry and gave customers more power over their flight experience (Tolpa, 2012).

The driving forces for changes in airline industry depend on developments in the legal, institutional and cultural domains (Keynes, 2009). The emerging business models in the airline sector don't have to do with the product itself but with new revenue streams, novel added value and innovative ways of market segmentation (Keynes, 2009). Nowadays the biggest divider of airline industries is whether they are a Full Service Carriers or Low Cost Carriers.

Full Service Carriers are usually airlines developed from former national flag carriers of each country through the market deregulation. Their business model involves passengers, cargo and maintenance. Full Service Carriers execute full service differentiation strategies, emphasizing hub and spoke networks and are part of a strategic alliance. This business model utilizes a vertical differentiation of products both on air and on the ground. Airlines in this category offer a loyalty program to frequent flyers. Through this the company better manage their customers and interaction with them.

Low Cost Carriers adopt a business model that aims to provide a cost advantage compared to Full Service Carriers. In order to achieve this lower cost the business model is solely based around the passenger. Their network is a point to point network and it spreads out around one or more airports referred to as

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'bases'. The destinations offered are all situated on the same continent and they rarely offer connecting flights from 'base' airports. Secondary airports, with lower cost in terms of landing tax and handling fee. The service provided is in no ways, other than cost, differentiated from competitors and alternative monetary streams such as car leasing, additional baggage, and dinner or beverages fees, advertising on board or by combining accommodation in the destination with the ticket.

3. AIRLINE BUSINESS TRAVELERS

The main ways to taxonomise the demographics of the clients of airlines are sex and reason of travel. The most used categories of travelers are those travelling for business reasons and these travelling in their own free time. However Teichert et al (2008) point out that this user segmentation has become old and that we need to adopt new niches in the market that an airline would be willing to cover. The first dividing factor in this direction is dividing those travelling for business reasons from those travelling business class.

Business class offers different services that cover a diverse range of needs. These include: flex tickers, more comfort on board (more legroom, electric plugs), V.I.P. waiting lounges in airports, and access to conference rooms (Derudder et al. 2011). It is evident that those services aim to cover the needs of customers travelling for business reasons but the cases of people travelling for business reasons not in business class are increasing, creating an issue that needs to be analyzed.

Airline experiences are defined as a series of services which can be broken down to a series of operations (Chen & Chang 2005). The services provided by the airlines are divided in two categories: ground services and inflight services. Cheng & Chang propose that those two kinds of service should be evaluated separately, however customers tend to not grasp the difference and evaluate their airline experience as a whole. Understanding the perspective of the user is quintessential in order to understand what they anticipate from the service providers and which services the customers feel are the most important (Cheng & Chang 2005). An ungrounded conjecture any company can make is that clients know what their needs will be in the future and that market research is simply asking the clients what they want (Gustafsson et al. 1999).

One way to gain access to more robust research insights on user behavior is by documenting the customer journey digitally, using a smartphone (Stickdorn & Zeher 2009). The starting point of this research was the creation of a mobile application that allowed the customer to document and evaluate his travel experience. Smartphones can provide a variety of different types of data such as audio, video, text, GPS coordinates etc. This plethora of modalities enables the collection of structured and authentic information created by the customers themselves, this fosters the emergence of research insights that point to new niches of the market where new services can be proposed and offer companies a competitive advantage.

4. SERVICE DESIGN

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Service design shares methods and is based on the tradition of interaction and product design (Mager 2004). It is a user centered science that, based on an understanding of how clients experience services, support organizations in creating better relations with their customers (Parker & Heapy 2006). Using design methods, service designers create tools and competences that support organizations in designing services for their clients (Sangiorgi 2010). Service design uses visualization techniques describing aspects of the user's experience and the overall system (Segelström & Holmlid, 2009).

Research insights led us to the creation of two service propositions. Both have to do with baggage management as research suggested that it is the most complex, in the context of steps needed to go through, and time consuming aspect of the airline experience. The goal of the proposed service concept is **to manage and simplify the process of an airline journey for airline business travelers.**

The first proposition has to do with the creation of a garment and equipment management service for business travelers. The service is responsible for the security, preparation and transport of the user's luggage to his destination. Through an interactive system the user can choose which of the items he has given at the check in he wants to pick up on his arrival. Additionally he can add or remove items from the management system. The service utilizes different channels of transport in addition to those used by the airline, such as a parcel service or cargo transport. In addition to selecting which pieces of luggage the user wants with his this service offers the possibility to track where the aforementioned luggage is.

The second Service proposition is a leasing system for business class travelers aiming to offer them everything they need for their journey. This service is based on a web/mobile application. The user can log in the system, select his departure date, the airport he is travelling from and through the application select from a variety of garments, shoes, electronics and anything else needed for a business trip. The next step is selecting where he wants to receive all of these items as well as where he will drop them off on his way back. One spot, for example, could be the airport or the hotel room in which the user lodged during his trip. On return the items are returned to the service where they are prepared for future use. At the same time the possibility to reserve them is given to users travelling to specific destination frequently.

In short, the service offers the user the possibility to take only his briefcase, go to the airport, board a plane and travel without any form of luggage, transferring that hassle to somebody else. Since many business travelers fly many times a month, or even every week, the time wasted going through the check-ins and baggage claim accumulates to a large amount of time wasted. In addition the possibility of a piece of luggage getting lost or damaged in the process create a less than enjoyable airline experience. Additionally the possibility that two or more business trips are chained together force those travelers to have to plan a lot of steps in their journey ahead.

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The process undertaken was based on the iterative model proposed by Stickdorn and Scheider (2010) that includes four steps: exploration, creation, reflection, and implementation. Each of these steps uses tools and methodologies that aim to understand the needs of the client, the documentation of the customer journey, the identification of the problems and, finally, the proposal of new solution as a conceptual design proposition.

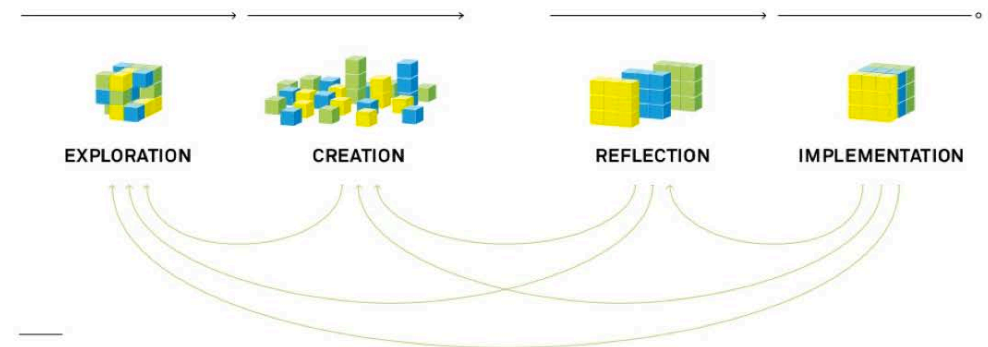


Figure 1 Stickdorn and Scheider service design thinking model

4.1 EXPLORATION

The research phase began with desk research on the services provided by airlines and business travelers. The research insights enabled us to create the models of the target groups and the service ecology. Additionally the different stakeholders of the system were identified, those include the airlines, their clients, the airport holding companies and everyone employed by the service providers.

4.1.1 Observation-participation

During the exploration phase, in order to better understand the needs of travelers and the way they go through the customer journey, observation sessions were undertaken in the Charles de Gaulle and Schiphol airports. Airport employees guided us through the services provided by the airlines Air France and KLM. At the same time we met with executives of the two companies and discussed their future plans and goals. The observation process took two days in each airport. We went through the whole customer journey on the ground from beginning to end.

4.1.2 Interview

In order to gather more data we interviewed eight business travelers that pick airlines based on the perceived quality of services offered. The participants were chosen based on the frequency they travel by airplane for business reasons. The questions posed during the interview process had to do with the airline experience as a whole and specific parts of it, especially those associated with

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luggage. Overall the questions were open ended in order to avoid leading the subject and letting them take the conversation in the direction they feel is best. Part of the questions are the following:

Your work demands travelling by plane. What are the reasons of traveling?

Do you book your tickets and hotel on your own or is it your company or a travel agent do it for you?

Do you prefer low cost or full service carriers?

Do you travel long or short haul?

How many days your trips last?

What do you take with you when you travel?

How long does it take you to get ready for a trip?

How do you get to the airport?

Which part of a trip you find the most annoying or boring?

Have you ever had any bad experience during a trip that you want to mention?

"Only hand luggage is allowed. When my boss first told me on our two week trip I thought he was joking. But it actually makes sense. You fly around a lot. In Brazil and Argentina we took 7 flights in 14 days. If you lose your stuff you are screwed. Also, it is way faster. You don't have to wait for baggage (by the way we wash our clothes in the hotel)." Sanne

"I have received a broken suitcase three times in the past and got a refund only once, not to mention the several times my luggage were lost." Thomas

"I travel around the world 200 of 365 days a year. I may plan to travel for four to five days at a destination and due to a delay in a project or changes in the plan I am forced to stay for two weeks. Sometimes I may return back home in the morning and asked to travel again in the afternoon." Dimitris

"I wish I had more days in advance to arrange my flight. I hate paying so much money on expensive fares. The meetings I have require wearing a suit. Cleaning and ironing my clothes is such a boring procedure." Alexandros

4.1.3 Customer journey map

Based on the data and insight collected during the exploration stage a customer journey map of the existing situation was created. The aim of this customer journey map is to visualize all the different paths a business traveler can take during his journey. At the same time information from the service blueprint were added to the customer journey to provide a rich picture of action taking place both above and under the line of visibility. This tool helps us identify the different touchpoints the user interacts with during this process and understand how each of these interactions influence his experience. This way of presenting the information allows a better understanding of the journey both as a whole and step by step. This rich picture fosters the creation of solutions for each touchpoint as well as a tool for a preliminary evaluation of new service concepts by supporting the cognitive walkthrough of such solutions.

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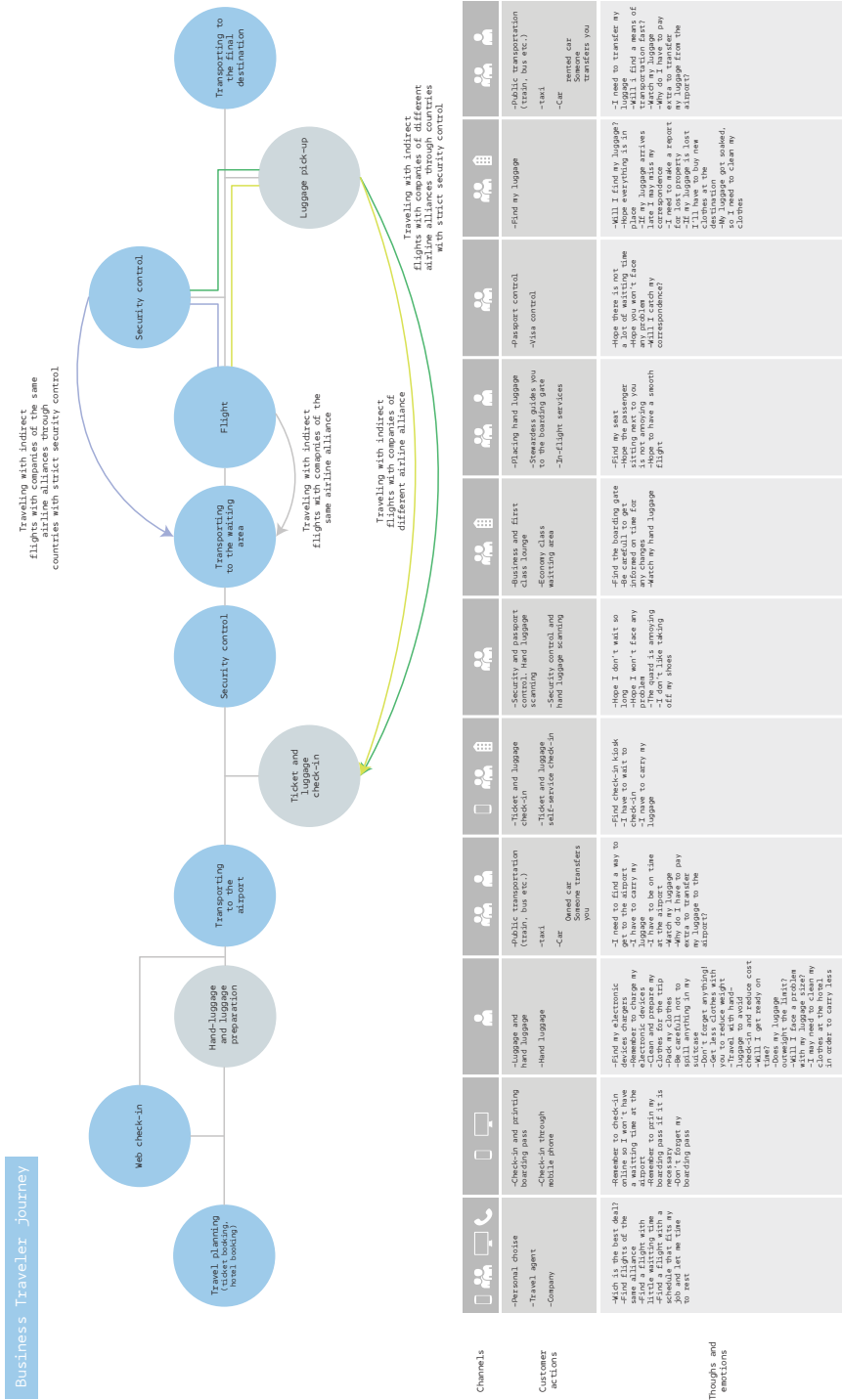


Figure 2 Current customer journey map

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4.2 CREATION

In this stage of the design process ideas were generated through a brainstorming session. The goal was to satisfy the needs of business travelers while having the whole experience in mind.

4.2.1 Brain storming

In this step solution were created to specific problems identified in the customer journey map. At the same time we tried to understand how each of the solutions proposed would affect the overall airline experience and how different solution can be synthesized to increase customer satisfaction. From this synthesis two conceptual services were identified. Their main characteristic was the holistic approach of the experience. The main focus of both solutions selected was the luggage management. This was supported y the research finding s from the interviews done with business travelers.

4.2.2 Scenarios

In order to better understand the services proposed a use scenario for each one was created. This gave us the user perspective of the service through the use of personas.

4.3 REFLECTION

The service concepts created at the creation stage were visualized and tested with business travelers. At this stage we had a better view of the services created and some first insights in order to make changes and redesign some aspects of the two services.

4.3.1 Storyboards

The two service concepts were model in the form of storyboards. These storyboards were presented to five business travelers in order to get some preliminary feedback. Additionally a series of questions were asked in order to validate their understanding of the concepts and get feedback. The feedback was integrated in the proposed service.

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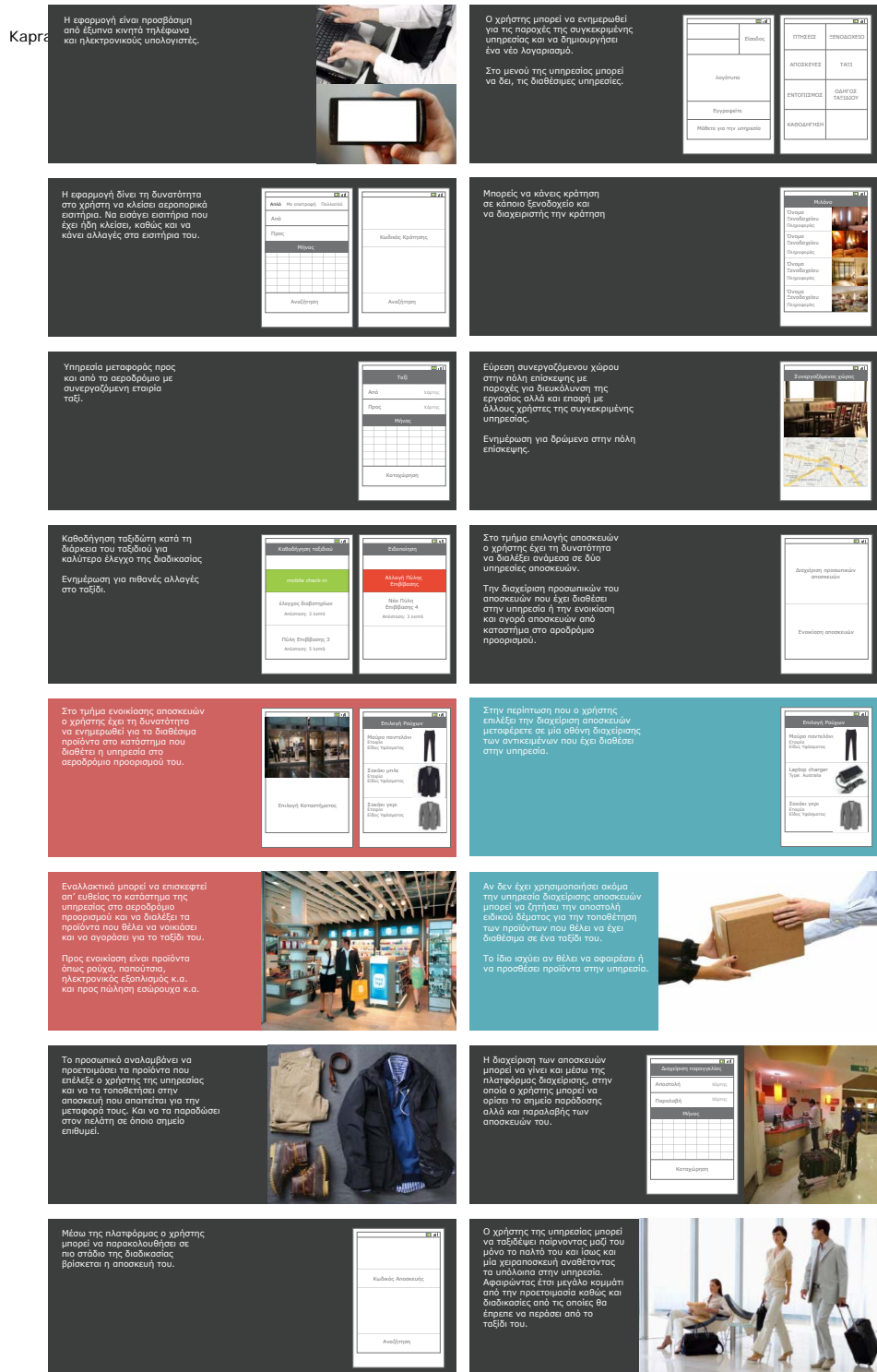


Figure 3 Storyboard

4.4 IMPLEMENTATION

In this stage the detailed design of the two concepts was undertaken. The new insights given in the feedback and co-design sessions with business travelers were integrated in the concepts and provided interested direction in the further development of the service.

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4.4.1 Service blueprint.

In order to understand all aspects of the proposed services a service blueprint was designed. This tool describes the interaction between the user and the service provider through different touchpoints, at the same time all the action taking place “behind the curtain” were described. The service blueprint identifies actions taking place before, during and after the interaction with the client as well as the different service evidence provided to him. The service blueprint provide us with the perspective of the user as well as the perspectives of different stakeholders of the system, such as the employees of the airline and the luggage management company.



Figure 4 Luggage Management Service



Figure 5 Leasing Service

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4.4.2 Service system

Here the service in its entirety is visualized as well as the interactions between different parts of the service. The different modules of the service are organized around a possible path of the user. The black lines signify the physical transport of goods and people and grey lines signify the transfer of data or

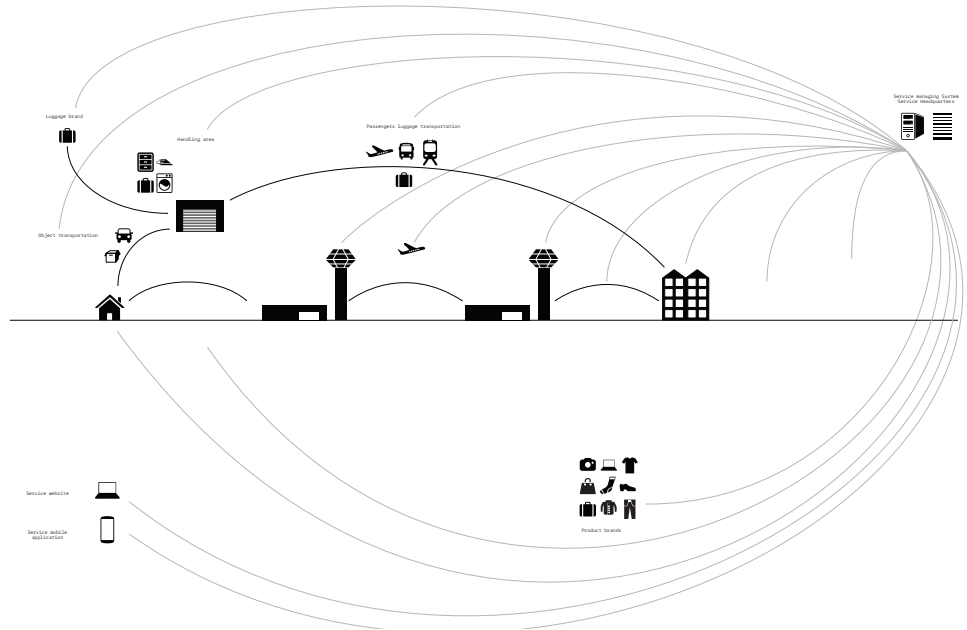


Figure 6 Service System

information between parts of the service through the management system.

4.4.3 Service smartphone application

The smartphone application is one of the most important touch points the service provides. The application takes advantage of ubiquitous technologies and connectivity that a smartphone provides. This gives to the user the opportunity to use the service whenever he/she wants. A step by step prototype of the application was designed and presented to users in order to test it and have a



Figure 7 Service Smartphone application

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greater understanding of the whole service concept.

4.4.4 Customer journey map

Just like the customer map created to describe the current situation this is a visualization of the different steps that a user would make with the proposed service implemented. The biggest difference between the two is that in the current situation a traveler would go through one less step for a domestic flight (from 8 to 7) and a reduction from eleven steps to eight for an international flight. Apart from the obvious reduction of steps in the process we see how the proposed leasing service further reduces problems in other parts of the journey associated with luggage. This improvement stems from the elimination of luggage, a part of the airline experience that is considered the most cumbersome by business travelers. This leads to reduced stress related to travelling and prevents luggage related problems such as loss or damage. The steps skipped in this scenario have been colored blue and the parts of connecting flights that are affected by the proposed service have been colored red.

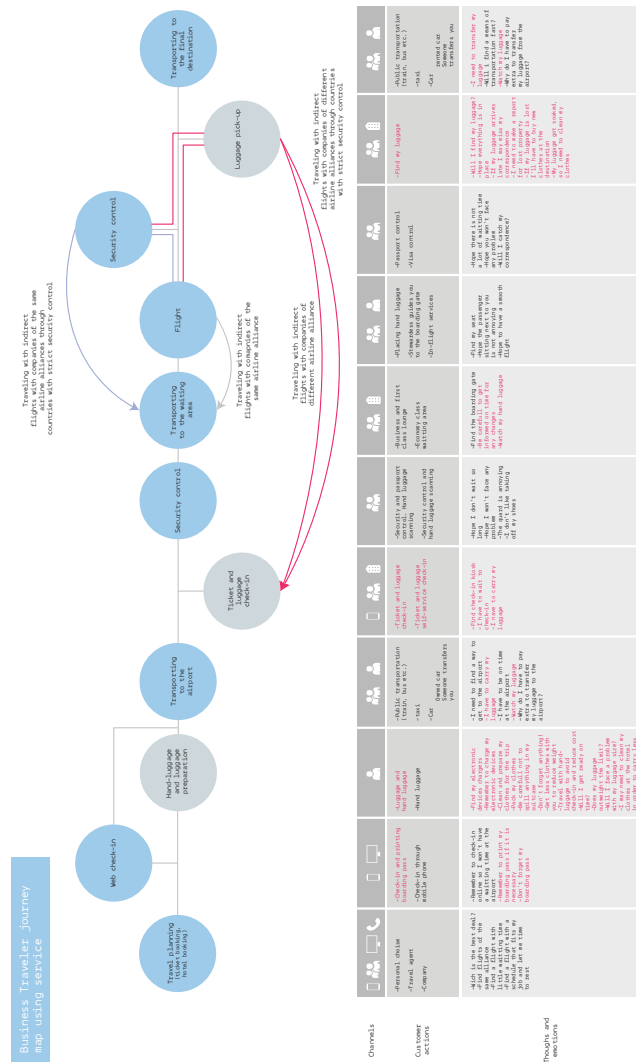


Figure 8 Future Customer Journey Map

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5. CONCLUSIONS

By using the garment and equipment service the boring and tiresome process of preparing for a business trip is delegated to the service provider. The same, to a larger extent, can be said for the leasing service. This delegation results in the customer having to waste less time going through different points of the airport and significantly reduces the steps in the whole airline experience. At the same time the service creates value for the airline as it helps it differentiate itself from the competition, it reduces the carbon footprint of flying by reducing the weight of the cargo, reduces the load on the luggage management system and increases customer satisfaction. The most interesting insight created through the reflection process is the idea to create a service "stepping stone" as the users suggested that the innovation proposed was perhaps too radical and they felt the need for the creation of a transitional service that would pave the way towards the adoption of the leasing service. In the context of the MAYA model (most advanced yet acceptable) (Hekkert & Snelders, 2003) the users suggested that even though the solution is advanced it is not yet acceptable. In this spirit we feel that the introduction of the luggage management service and finding the early adopters for the leasing service will pave the way in eventually making it the most advanced yet acceptable solution.

The service design methods used during the course of the project are highly visual (Segelström & Holmlid, 2009) and support the communication between different stakeholders by creating a common language between them. In this context the customer journey map was designed in a way that incorporates all different use scenarios and also includes information traditionally found on the service blueprint. This helped us reach a deeper understanding of the problem situation and address the issue holistically. We believe that this "extended customer journey map" can be used to foster a more holistic service design process and looking to application in different fields of service design is a promising direction for research.

The conjuncted use of the customer journey map and the service blueprint creates a rich picture that simultaneously allows the designer to understand different perspectives of the service system as well as providing him with a more effective tool of communication. However this method is better applied in linear services that demand that the user passes through different touchpoints in a predetermined way. The next step in this research is to apply this in different linear services to better understand and evaluate the proposed tool.

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