Experiential Services Concept design and assessment:

A Kansei Engineering approach towards service concept development within the aviation industry
Title of the research project
Experiential Services Concept design and assessment: A Kansei Engineering approach towards service concept development within the aviation industry.

Abstract
The objective of the study is to develop an approach for designing and assessing service experience concepts within the aviation industry. The approach mirrors Kansei Engineering, a product design oriented engineering methodology for the measurement of potential customer experiences and is based on conjoint analysis. The implementation of the approach has lead to number of scientific results and a guide for consultants and managers within the aviation industry for the development of experiential services.

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Executive Summary

The thesis was conducted at TNO ICT (The Dutch National Research Institute for Information and Communication Technology) for the design and assessment of experiential services within the Dutch aviation industry. Experiential services are those services where the focus is on the experience of the customer when interacting with the organisation. The diversity and the number of passengers is growing. Which in turn has led to service performance becoming a crucial competitive factor. Improving service experience is one way of improving service performance.

The aim of the study is to develop an approach towards the development of such services and to assess their potential experiential value to consumers within the aviation industry. The approach developed mirrors Kansei Engineering Type II, which is a statistical and engineering approach from the Industrial Product Design field. The statistical method used to develop the approach is called Conjoint Analysis.

A literature review and explorative study with stakeholders from the aviation industry led to the development of a study case at a transit airport. Respondents were asked to give their opinion on seven service provisions arranged across three experiential themes (Physical, Emotional and Co-creative). Service provisions included in the study were: SMS service, Public Display, (Non) Empathic Service employees and the inclusion of service choice options. These were set against five indicators of experience quality, expressing customer satisfaction, assurance, comfort, feeling valued and the service surpassing expectations. The study was conducted with 123 respondents from the general population.

Important findings from the study are that an approach, which is based on Conjoint Analysis and which mirrors Kansei Engineering Type II is indeed feasible for the design of experiential services. The approach led to clearly interpretable results and allowed one to establish the influence of service provisions on the expected customer experience.

Noteworthy findings include:
That providing an ‘SMS service’ has great impact on the feeling of comfort and the feeling of assurance as compared to commodity service provisions such as a public display.
The behaviour of the service employee is about twice as influential in generating the feeling of being valued, assured, satisfied or a service that surpasses expectations. This when compared with physical aspects of the service provision (such as SMS service).
Choice options contribute more strongly to the service experience than physical aspects of service provision.
On a different note we have been able to establish that the common indicator of service quality The service surpasses your expectations leads to a more critical evaluation of the service combinations than the common indicator You are satisfied about the service.
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“Historically the aviation industry has looked at service delivery elements (being a ticket, boarding an airplane, check in, etc.). However now the company is looking at new ways of differentiation; and that is through the focus on the customer experience. Instead of looking solely at how we can best create the possibility for people to buy us, we now strive to redesign the customer experience by looking at the entire chain of the process… ‘The passenger from bed, back to door’. It’s a literal turn around from how things were done before.”

Statement by Director Strategic Innovation of a High Class Flight Provider
1. Introduction

1.1. Problem Description

What is the value of service experience within the aviation industry? How can we aid this industry in providing better services for its consumers?

As according to Tidd (2003) 85% of employment evolves around the delivery of services, yet too little is known about managing innovation within the service sectors. Indeed according to Voss and Zomerdijk (2007) it has proven to be difficult to measure and predict the returns on services, which in turn has led to over- or underinvestment in (experiential) services. Service innovation has proved to be a challenging endeavour because of; the intangibility of services, the heterogeneity of services, much of the innovation being of processes rather than products and the lack of an identifiable R&D function (Vermeulen and van der Aa, 2003).

This complexity is increased by the current trend in service innovation, which is focused on the delivery of a new cycle of services, which has been come to be known as “experiential services”. “Experiential services are considered services where the focus is on the experience of the customer when interacting with the organisation, rather than just the functional benefits following from the products and services delivered. Every touch point that the customer has with the organisations is an experience, no matter how mundane the product or service that is being delivered.” (Carbone and Haeckel, 1994).

Prime examples of services, which have been developed to include an experiential component are; the English-as-a-second language instructor who incorporates field-based exercises (having to order food in a restaurant, asking for directions in a crowded subway) (Stuart and Tax, 2004), the tour operator who acts out a battle for the customers during a tour of the Plains of Abraham (Stuart and Tax, 2004), Nike 'Nike Town' stores, which immerse customers in an all-encapsulating branding and product experiences (Fulberg, 2003) and Achmea Health Insurances, which integrated a number of services, focusing on the experience of being healthy, into its traditional financial product offerings (Thijisen, Boswijk and Peelen, 2005).

Although this experiential factor has been implemented in various forms within the retailing environment it is also emerging as a critical design element within mass public service environments such as airports and flight carriers (i.e. Virgin Atlantic source: Voss & Zomerdijk, 2007). As the diversity and number of passengers grow the demand put on these services increases. It means that service performance is becoming a competitive factor for airport operators (E-Cab, 2008).

At the same time the continuous stream of technological change and increasing business network dependencies has made the process of service innovation more complex (E-Cab, 2008). This fact is exemplified by the E-Cab consortium project, which is organized by the AIRBUS group under the European commission 6th framework project. E-Cab stands for “Electronically enabled Cabin and Associated Logistics for Improved Passenger Services and Operational Efficiency”. In their introductory webpage they state; “Air transportation has tremendously grown over the last decades and the increased volume of passengers (and freight) and the high complexity of airports have reached a point where transportation efficiency and travel quality is considerably affected.” (E-Cab, 2008) One way of tackling this emerging situation is by
focusing on improving the customer experience of services. The theory on service experience design allows for the study and improvement of the air transportation. The statement by the Director strategic innovation on page X exemplifies these challenges and the transition of the industry towards customer experience management. The industry is in a state of change and is exploring how customer experience management can be used as one option to alleviate the current situation. Our preliminary interviews have shown that the development of the current experiential service concepts and deployment of services proceeds in an adhoc and unstructured manner. These findings are in line with statements by Goldstein and Johnston et al. (2002), who point to the lack of knowledge on proper design, redesign and deployment of services in general. They state that the development of the service concept is a key component in the process of service design and development. Goldstein and Johnston et al. (2002) understand the service concept as being the mix of physical and non-physical components that combine to create a service. In this study we will explore on how focusing on the service concept can potentially improve experiential service design within the industry.

1.2. Research Objectives

The aim of this study is to develop a method for the design and assessment of experiential service concepts within the aviation industry. According to Goldstein and Johnston et al. (2002) the lack of focus on the service concept, brings about a number of questions that need to be answered. One of the questions they pose is; If a service concept is a key element in service design planning, then how can it be used to assess services?

The service concept is seen by many as a means for the service provider to identify the value being delivered to customers and the value expected by customers from the organisation (Fynes and Lally, 2008). Ziethmal and Bitner (1996) define value as the individual perception of a product or service based on a composite of attributes. Some of these attributes may include; perceived quality, perceived costs and intrinsic & extrinsic attributes such as prestige, accessibility and performance. In this study we will explore an approach towards measuring the potential value of service concepts in terms of experience quality management. The goal of experience quality management is to enable an organization to deliver just the right set of experience clues that evoke specific feelings, which are desired by its customers (Berry and Carbone, 2007).

Our interest lays in the measurement of the excepted experience quality of experiential service concepts. It is our aim to develop a method for designing and assessing the Expected Experience Quality of experiential service concepts. We will base our approach of the methodology on adoptions of Kansei Engineering Type II Principles. Kansei engineering Type II is an approach towards product design, which is aimed at the design and assessment of product concepts for the development of predictive databases of the expected emotional responses to selected product combinations. The details of this engineering approach are laid out in chapter three.
1.3. Research Question

1.3.1. Primary Research question

The primary research question has been formulated as followed:

*What would be an approach towards designing and assessing experiential service concepts within the aviation industry?*

The purpose of the study is to develop an approach for the design and assessment of experiential service concepts by mirroring an existing design engineering approach. A service concept from the aviation industry is taken as case for the development of this approach.

1.3.2. Sub Research questions

The sub research questions that will lead to answering the primary research question are:

1. *How can Kansei Engineering Type II be useful for gaining an understanding of designing and assessing experiential service concepts?* We will explain how Kansei Engineering Type II works and elaborate on the appropriateness of this approach for designing and assessing experiential service concepts.

2. *What are the relevant experiential service design approaches and theories on service experience quality?* We will delve into various approaches towards the design of the customer experience. We will elaborate on the service experience design approaches discovered in the literature review and come to conclusions on the state of service experience design.

3. *What would be the application of an approach which mirrors Kansei Engineering Type II on a case within the aviation industry?* We developed a fictitious case of a service within the aviation industry that contains some of the Experiential Design Components discussed in sub research question two. The implementation follows a process that closely resembles Kansei Engineering Type II.

4. *What are the results of the application of the approach?* The results of implementing the methodology are presented and then discussed in relation to the propositions resulting from sub question three. We will come to conclusions on the proposition and subject under study.
1.4. Scope of the Research

1.4.1. Targeted Audience & Service Innovation Focus Area

The research is limited to service concept assessment within the aviation industry and is primarily aimed at managers and consultants within that industry. The field of service innovation is large and covers subject areas ranging from service recovery, development and diffusion and use. It is our aim here to focus on service innovation in terms of service development.

1.4.2. Scope of the Approach

It is not the intent to develop an approach on designing and assessing experiential service concepts from scratch. Instead it is the intent to deliver an approach towards experiential service assessment, which builds on existing theories and methods on customer experience design and Kansei Engineering Type II. As a consequence the research is limited to processes that directly influence the capability of service providers to deliver the services. The research thus, does not focus on the analysis of the service provider as whole.

1.4.3. Positioning of the Approach within service design processes

Some scholars divide the product development process into two macro stages; the fuzzy front-end and the execution oriented back end. Khurana & Rosenthal (1997) define the fuzzy front end as the portion of development processes that consists of activities which determine what the service concept should be. It includes design processes such as strategic positioning, idea generation and concept development and concept refinement. The second phase is considered the execution, and thus implementation phase of a service development project. Fynes and Lally (2008) apply these same concepts to the service development process and have proposed a model on the fuzzy front–end, which they named the “stages of service experience Concept development”.

The model consists of a five step process towards a final service concept. First some strategic positioning is done, which is then followed by initial idea generation processes. These ideas are then refined and enhanced through iterative processes by the design team, preferably in conjunction with customers. This leads to an initial concept. Once this initial concept has been validated it is moved to the last stage as a finalised service concept. The approach developed in this study covers all the stages presented in the fuzzy front-end model by Khurana & Rosenthal (1997).

![Figure 1 :: Stages of Service Experience Concept Development (Fynes and Lally, 2008)]
1.5. Structure of the Report

We will briefly explain the structure of the report here and provide a summary on the content of each of the chapters. Each chapter answers a single research question as presented in section 1.3.

1.5.1. 1. Introduction

In the introduction we give a definition of experiential services and give information about the project by explaining the assignment in terms of aims, problem definition and research questions. In addition we explain the approach taken towards the project as described in this thesis.

1.5.2. Overview of the Relevant Theory and Concepts

The overview of the relevant theories and concepts has been divided among chapter two and three. First the focus lays on the principles of Kansei Engineering II and is followed by a chapter on the current literature on experiential service design. The two chapters pave the path for the research design which is presented in chapter four.

2. Kansei Engineering Type II

Sub Research Question 1 - How can Kansei Engineering Type II be useful for gaining an understanding of designing and assessing experiential service concepts? We will explain the details of Kansei Engineering Type II and elaborate on the appropriateness of this approach for the design and assessment of experiential service concepts. Various chapters in study reflect back on the processes of the Kansei Engineering Type II.

3. Experiential Services and Experience Quality Measures

Sub Research Question 2 - What are the relevant experiential service design approaches and theories on service experience quality? We will discuss the current literature on experiential service design approaches and experience quality. The Experiential Design Components are then presented in an all encompassing overview of themes relevant to the design of experiential services.

1.5.3. 4. Research Design

Sub Research Question 3 - What would be the application of an approach which mirrors Kansei Engineering Type II on a case within the aviation industry? The research design describes the implemented methodology for the design and assessment of experiential service concepts from our study case. We will discuss the casual relationship between the components in our study and explain the development process and the implementation of the study, which revolves around conjoint analysis.
The service concepts are partly based on an explorative study with actors from the aviation industry. A summary of the most important findings from this explorative study has been included. The research design evolved through four rounds of refinements and led to selection of three themes of experiential service components and five indicators of experience quality. All actions were taken in light of the Kansei Engineering Type II.

1.5.4. - 5. Results & Discussion

Sub Research Question 4 - What are the results of the implementation of the approach? The results of the research are discussed and lead to statements on the experiential concepts and the experience quality measures analysed in this study. Likewise we will elaborate on the appropriateness of conjoint analysis and Kansei Engineering Type II for the usage as intended within this study.

1.5.5. - 6. Conclusions

Primary Research Question - What would be an approach towards designing and assessing experiential service concepts within the aviation industry? In conclusion we will summarise the chapters in an all encompassing final chapter. We will reflect on the process, the results from the research and finalise with a number of recommendations for future research.
2. Overview of the Relevant Theories and Concepts – Kansei Engineering Type II

In this chapter we will delve into the fundamental aspects of Kansei Engineering Type II. The topics presented in this chapter focus on answering sub research question one;

How can Kansei Engineering Type II be useful for gaining an understanding of designing and assessing experiential service concepts?

There are many design and engineering methodologies, which focus on the functional design and benefits of products and services (i.e. QFD). However few of these principles focus on the experience and emotional aspects of product or service design. Kansei Engineering is one of few approaches, which does so. In this sense it is of value to focus our interest on Kansei Engineering here.
Kansei Engineering allows for the development of product concepts and measurement of the emotional value of those concepts to consumers. It allows for the statistical analysis of these concepts and allows designers to make decisions on the product concept that most fits their needs. These are aspects that inline with the aims presented in the introduction section 1.2. Kansei Engineering thus allows for the design of product concepts and allows for the founded judgement on the match of those concepts to the design requirements set by the designers.

2.1. Fundamentals of Kansei Engineering

2.1.1. What is Kansei Engineering?

Kansei Engineering is an engineering methodology originating from the industrial design field and is an ergonomic consumer-oriented technology for new product development (Nagamashi, 1995). The approach was developed in the 1970s for the development of products that match consumers, emotional needs and psychological feelings.
It is based on the premise that emotions and feelings of human beings are based on external stimuli from the environment (Dahlaard and Schütte 2008). Products thus evoke emotions and feelings on human beings. By carefully adjusting the attributes of products one can ascertain, how these attributes influence the feelings and emotions of (potential) consumers.
Kansei engineering is thus an approach to elicit the emotions and feelings of consumers with regards to a particular product or service configuration. Kansei engineering is used as a tool for product development with high consumer appeal through the identification of the product properties and correlations between those properties that lead to desirable emotions and feelings.
The terminology of Kansei (which is one of numerous Chinese “loan words” assimilated into the daily Japanese) can be translated as meaning emotionality, sensuality or sensitivity (Nagamashi, 1995).
Kansei Engineering can be categorised into three types (Nagamashi, 1995);

**Type I: Category Classification.** A method, in which the Kansei of a product is broken down in a tree structure down to product design details. Nagamashi (1995) gives an example where a car needs to be designed, which delivers a Kansei of “Tight Feeling”. This can be broken down into 2nd level and 3rd level details in Kansei and product details. In the example below the Kansei “Simple” leads to a design choice of simple interior design and a specific floor carpet trait.

![Tree structure of Kansei Engineering Type I](image)

**Type II: Kansei Engineering Computer System.** A computer-assisted approach to Kansei Engineering. This approach utilises an array of words that depict the desired Kansei of a product design (also known as Kansei words). Using computer software and statistical analysis methods a number of product attribute combinations are presented to consumers. The consumers then judge the product combination on each individual word. The results lead to a database, which product designers can utilise for the development of products, which fit a desired Kansei criteria as portrayed by the chosen “Kansei words”. An example is presented in section 2.1.3.

**Type III: Kansei Engineering Modelling.** This is an approach in which mathematical rule based logic is utilised for product design that fits predefined set of Kansei words. Nagamashi (1995) gives an example where team developed an intelligent colour printer. Subjects evaluated printouts of various girl’s face skin colours in terms of a number Kansei words. The evaluated colours where classified into hue, value and chrome separately and then expressed mathematically in a triangle fuzzy logic function. This function was them implemented in the CPU of the intelligent, which could then print picture to a desired Kansei level.

### 2.1.2. General Scheme of Kansei Engineering Type II

We will explain the general scheme of Kansei engineering Type II as according to Dahlaard and Schütte (2008) here. They base their model on literature review from Japanese publications on Kansei Engineering. The have indentified the following steps;
1. **Choice of Domain** As a first step the Kansei engineering team needs to formulate the general idea behind the product or service. It includes the definition of the intended target group and the user type.

2. **Span the semantic space** Any artefact can be described through semantic expressions. The team collects a large number of words describing the domain. Sources for words are; pertinent literature, manuals, commercials, experts etc. Depending on the domain context anywhere between 20 to 800 words are collected.

3. **Span the space of properties** The span of product or service space properties is a collection of selected properties for further evaluation. These can also be based on different sources including existing products or services, suggestions for consumer panels, design concepts etc.

4. **Synthesis** In the synthesis step the semantic and the space of properties are linked together. Connections between abstract feelings and technical specifications are established and quantified. For every Kansei word (the semantic space) a number of product or service properties are found to be affecting the Kansei word. There are many options for linking the Kansei words with product or service properties including, fuzzy set theory, genetic algorithm, conjoint analysis and category identification.

5. **Test of Validity (External Validation)** the last step before declaring the data results as suitable for a Kansei Knowledge base is the validation process. This validation should be done in order to check if the prediction model is reliable and realistic. This is normally done by analysing tables and data on correlation and measures for relative importance of the properties or Kansei words.

This database thus establishes the link between consumer psychological feelings and product properties and is known as a Kansei Engineering system (KES). The KES can thus aid in establishing the correct design solution for a predefined psychological feeling, which has been developed from a business or product strategy.
2.1.3. An Example of Product development based on Kansei Engineering Type II

The following is a concise example of how Kansei Engineering Type II has been utilised by a Japanese car manufacturing company. The aims of the car manufacturer was to construct a KES for the design of its steering wheels. A car designer, wanting to design a steering wheel which expresses a Kansei of “a safe feeling” should be able to generate a sketch of such as steering wheel by accessing a KES. This example follows from a publication by Nagamachi, 1995 and has been adopted to reflect the general scheme as by Dahlaard and Schütte (2008);

1) Choice of Domain A car manufacturer set out in the development of a new business strategy. As part of this strategy they sought the development of a new steering wheel design for one of its up and coming car models. 2) Span the semantic space First they collected a number of Kansei words concerning the steering wheel design by conducting dialogue’s in car shops and taking references from car magazines. They collected a total number Twenty Kansei for their purposes. 3) Span the space of properties Subsequently they collected Fifty-nine samples of steering wheel design from a variety of cars and transformed into presentation slides.
4) Synthesis These slides were then shown to twenty-seven male and twenty-three female participants. The subjects evaluated each slides on the basis of semantic a differentiation scales (Kansei words). The KES engineers then calculated the results using multivariate analysis. 5) Test of Validity As a result, they obtained the statistical relations between the Kansei words and the design details of the steering wheel. These where checked for consistency. 6) Model Building These outcomes where utilised to constructed four databases and a computer-assisted Kansei Engineering System for the steering wheel design.

The finalised KES returned a number of steering wheel designs, which would fit the required design query. In the case of the example the offering the Kansei “a safe feeling” would return results the supposed ideal steering wheel design for males, females and a hybrid of both for both sexes.
3. Overview of the Relevant Theories and Concepts – Experiential Services

In this chapter we will present a number of theories on experiential design approaches & experience quality indicators. The topics presented in this chapter focus on answering sub research question two;

What are the relevant experiential service design approaches and theories on service experience quality?

The chapter has been divided among these two primary topics. The topics have been divided among the lines of the span of the properties and the span of the semantics, presented in chapter two “Overview of the Relevant Theories and Concepts – Kansei Engineering II”, respectively. This division facilitated the process of the development of the research methodology presented in chapter four “Research Methodology “.

Overview of the Relevant Theories and Concepts

3.1. Literature Review – Theories on Experiential Services
We will present seven perspectives on experiential service design. These theories form the foundation of our literature review on Experiential Design Components as they provide an overview of the current capability in the field experiential service design.

3.2. Discussion on Service Design approaches and components
The most relevant aspects of the theories are condensed into a single overview. The theoretical overview by Fynes and Lally (2008) is taken as a reference point for the composition of an overview table.
- 3.3. Literature Review – Theory on Experience Quality Indicators
We will present the theory Shaw et al. (2005b), which relates to experience quality. These theories form the foundation for our research in terms of the Expected Experience Quality.

- 3.4. The relationship between Experiential Design Components and Indicators of Experience Quality
Our assumed relationship between the Experiential Design Components and the indicators is presented and shortly discussed and presented in a scheme. This scheme is the foundation for the development of the research methodology presented in chapter four.

3.1. Literature Review - Experiential Service Design approaches and components

The theories included in this literature review have been included for two reasons;

- To establish a frame of reference for the development of the approach. Various elements of the perspectives here can aid practitioners of the approach developed here in finding design components and understanding the process of designing experiential services.

- To ascertain a number of perspectives on experiential design, which lead to us to develop propositions for further research.

We will briefly introduce each theory here and explain why the theory is relevant to this study. We will present six perspectives on experiential service design and conclude the chapter with a theoretical overview by Fynes and Lally (2008). As many of the perspectives relate to strategic elements of service design and the components of experiential services they tend to relate to the aspects of “Choice of Domain” and “Span the space of Properties” by Dahlaard and Schütte (2008). The following table gives a short description on the perspectives presented in this section;

<table>
<thead>
<tr>
<th>Perspectives on experiential service design</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Experiences through Interaction</strong></td>
</tr>
<tr>
<td>Falk &amp; Dierking (1992)</td>
</tr>
<tr>
<td>Nijs &amp; Peters (2002)</td>
</tr>
<tr>
<td>This theory is presented first because it gives a sociological overview on service experience design. Is an introduction to the common elements at play within service experience design.</td>
</tr>
<tr>
<td><strong>Service Design: Lessons from the theatre</strong></td>
</tr>
<tr>
<td>Stuart &amp; Tax (2004)</td>
</tr>
<tr>
<td>The heightened attention towards service experience design, was initiated by scholars who saw services as a form of theatre play. Subsequently a number of scholars have studied the relation and commonalities between theatre and services. This is an example of such an approach.</td>
</tr>
<tr>
<td><strong>‘Experience Motif’, touch-points and clues</strong></td>
</tr>
<tr>
<td>The theory describes experiential service design in terms of touch points with the consumer and service experience drivers, which each service oriented company should have.</td>
</tr>
</tbody>
</table>
Service Design in terms of Experiential Design Areas

Voss & Zomerdijk (2007)

A holistic model on service experience design. A proposition of a model for encapsulating the different ‘Design Areas’ that encompasses most of in not all experiential services. We have included this model in our study because it’s based on one of the latest empirical studies on service experience design (2007).

Strategic Experience Modules

Smitt & Bernd (1992)
Nijs & Peters (2002)

Customer Experience branding & perception management. The theory outlines a number of key aspects and a specific interaction sequence, which generates a bonding experience with consumers.

Service Experience Blueprinting

Patricio, Fisk & e Cunha (2008)

The usage of service blueprinting enables a comprehensive interdisciplinary approach towards service experience development for multi-channel services. Services are increasingly becoming multi-channel. The approach taken delves into the design of experiential services within multidisciplinary teams.

Theoretical Overviews

Service Design in terms of Experiential Themes

A proposition for a model depicting service components in key theme areas. The overview encompasses the latest theories on service experience design. The section “2.2. Discussion on Service Design approaches and components” will reflect back on this model.

Table 1 :: Perspectives on experiential service design

3.1.1. Experiences through Interaction

First we introduce the model by Falk and Dierking (1992). This model gives a holistic view on the influence of contexts on the customer experience. According to Nijs and Peters (2002) the model gives a good depiction of how customer experiences are dependent among things on mood, the company one keeps and prior knowledge. Experiences are thus unique to the individual and is determined by the personal, social and physical context.

In our opinion all theories presented here after relate to this early model on customer experience design. The model covers three contexts which together create an interactive customer experience:

*Personal Context;* The personal context of each individual consumer is unique. It is comprised out of various prior experiences, knowledge and the interests, motivations & concern. Together these characteristics help form what the individual consumer enjoys and appreciates. It thus influences how time is spent and what experiences are
sought for self-fulfilment. This also means that each individual has a personal agenda; a set of expectations and anticipated outcomes from the consuming experience. Consumers with divergent personal contexts have very different needs to achieve their self-fulfilment.

_Social context_; People consume within a social context, as to say; Consumers come in contact with other consumers and personnel. A consumer’s perspective on the experience thus is strongly influenced by the social context. i.e. the evaluation of the quality of the time spent is often done through the social context first. Understanding the social context should aid in the understanding of variations of behaviour between i.e. adults in family groups and adults in adult groups, or children on school trips or when visiting their family.

_Physical context:_ the physical context includes the architecture and "feel" of the building, as well as the objects and artefacts contained within it. How consumers behave, what they observe, and what they remember is strongly influenced by the physical context.

The combination of the different contexts are continuously given form by the individual consumer. It is the interaction between these concepts determines the experience. The contexts put together enable one to develop social, physical, intellectual and emotionally rich experiences.

### 3.1.2. Service Design as an integrative process: Lessons learned from the theatre

Several scholars have dedicated research to the study of experiential services in terms of theatre performances. One example of such a study is by Stuart and Tax (2004). In their paper they make the observation that although services have evolved over the last thirty years, one constant has remained – services are performances. In this view the value of a service experience can be seen as a function of how well the provider integrates theatrical components to generate great performances and is in line with thoughts by Pine and Gilmore (1999) who point to the notion that great performances deliver memorable experiences.

In their study they present an exhaustive list of Experiential Design Components in terms of theatrical constituent parts. According to them the concepts of theatre allows for describing critical design elements in terms of producers (executives), directors (managers), actors (service providers), audience members (customers), the script (customer and service provider training, customer contact, service processes and customer involvement), stage decorations and props (physical facilities, service scape and equipment), costume design (uniforms), rehearsals (pilot tests), and backstage production (hidden factory).

Through their case study, an actual theatre play production, they observed the great emphasis put on the proper integration of the various elements. As one of the important conclusions of their study, Stuart and Tax emphasise the importance of proper integration of service components in order to deliver competitive service experiences.
3.1.4. Service Design though ‘Experience Motif”, touch-points and clues

According to Berry, Carbone and Heackel (2002) each service oriented company should have an “Experience Motif”. The “Experience Motif” reflects the organisation’s core customer experience oriented values and branding strategies. Captured in a few words the motif serves as a guidance tool for all experience management efforts. The motif acts as the unifying element within newly designed customer experiences.

Similarly, Shaw (2005) speaks of the “Customer Experience Statement”. They consider the development of a proper “Customer Experience Statement” as critical to evoking the right emotions with their customers. By expressing the key concepts contained within the “Customer Experience statement”, at the numerous customer touchpoints of the service, the organisation delivers memorable experiences.

Every company should be able to recognise the experience clues it is sending to its customers. These are anything that can be perceived or sensed – or recognised by its absence (Berry, Carbone and Heackel, 2002). For instance, the product or services for sale give off clues and likewise the physical environment and employees also give off numerous clues.

Berry, Carbone and Heackel (2002) state that these clues can be fitted into two categories. One being function- and the other being emotion oriented. According to them, the clues relating to functionality are interpreted primarily by the logical circuitry of the brain. “Did the plumber fix the leak? Did the rental car start when I turned the key?”. The answer to such questions give functional clues to as the service. The second type of clues is related to the smell, sight, texture, taste of the good or service. For instance, the tone of voice of a service employee can be categorised in type of clues. On a different distinction level these emotion clues can be split into mechanics, clues that are emitted by things and humanics, the clues that are emitted by people. (Berry, Carbone and Heackel, 2002)

An important statement in their paper is that every clue no matter how minute in detail should aid in fulfilling the central mission of the service. In their words “The experience motif is the touchstone from which clues can be developed and defined”.

3.1.3. Service Design in terms of Experiential Design Areas

In a different approach, Voss and Zomerdijk (2007) studied the design process of a number of industry consultancy firms, organisation and providers. One of the remarkable conclusions of this study was that these companies innovated in five distinct design areas; the physical environment, service employees, service delivery process, fellow customers, back office support. These design areas directly or indirectly contribute to a customer’s experience.

These areas are often referred to in terms of theatre production elements. The relationship between these experiential designs has been depicted below.

Physical environment (‘stage’); this is the setting, in which a service is delivered or experienced. The physical environment has various roles, including; accommodating the customers and employees, guiding behavioural activities and giving clues to what type of service could be expected.
Service employees ('actors'); the interaction between customers and the employees, which deliver the service is a major factor in influencing customer experiences. In their study many of the experiential service providers indicated service employees as the key in influencing customer experiences and consequently invested heavily in training them.

Service delivery process ('script'); the series of actions or events that take place in order to deliver the service. This process largely determines the flow of the customer through the organisation. The companies in their study improved their services by focusing on the start, end and peaks of their service delivery processes.

Fellow customers ('audience'); Besides the customer experiences being influenced by the service provider, they are also influenced by others, which might be present during the process. Unruly or unanticipated behaviour by bystanders can destroy a performance or reverse the socialising and bonding process can make an experience more enjoyable.

Back office support ('back stage'); Many organisation had considerable amount of back office employees, which did not interact with customers yet were very vital in the delivery of the service.

In addition Voss and Zomerdijk (2007) discuss the ‘service as a journey’ approach taken by many scholars and service design agencies. The total customer experience is the sum of every touch-point, which the consumer encounters. Some characteristics of the service as a journey perspective are;

- A customer experience is build over a period of time, starting before the actual sale experience or transaction and thus includes pre and post purchase experiences.
A journey consists of touch-points (interactions) between customer and organisation or brand; these touch-points need to be designed towards attaining the desired result.

Each touch has the potential to be innovated upon.

Touch-points include both physical (i.e. travelling to a service) and non physical (i.e. the building anticipation of experiencing the service) aspects to service delivery.

### 3.1.4. Strategic Experience Modules

Strategic Experience modules are a marketing and branding approach towards instilling compelling and memorable experiences within (potential) customers. In their approach Smitt and Bernd (1992) they emphasise the sequence in which people learn and thus also learning new experiences. They base their approach on the classical hierarchical learning effects model, which depicts learning as a process of becoming aware of (external) stimulus, followed by understanding of the stimuli and continued by an (affective) state towards the stimuli, after which ultimately action is undertaken by the individual (i.e. buying a product). Smitt and Bernd (1992) present five strategic experience modules in their approach:

- **Sense**: attract attention (of the potential customer)
- **Feel**: create an affective bond
- **Think**: develop a permanent cognitive interest
- **Act**: stimulate the buying behaviour
- **Relate**: brings the experience past the individual level and puts in a larger social context.

They depict these module’s in an “Experiential Wheel”, which are interconnected by “experiential connectors”. All modules are closely linked and together lead to a desired brand experience. Nijs and Peters (2006) give an example of this interconnection by explaining the Volkswagen Beetle branding concept in terms of Strategic Experience Modules; The retro-futurological design connects the Sense and Feel modules; its creates a smile on the customers face and makes him think about the car models in the fifties and sixties. The nostalgic element from feel can then be used to link this to think for instance by referring to a car commercial from the sixties. Because of the individualistic drive of the consumer is driven to act and in the end the cultural connection to the lifestyle of the sixties brings the consumer to relate.

The SEM approach by Smitt and Bernd (1992) in many ways cover the service (and product) perception. In essence the SEM dictates how a company can strive to create an emotional perception of their offering.

### 3.1.5. Service Experience Blueprinting

In their thesis on service experience blueprinting, Patrício, Fisk and e Cunha (2008) state that designing services is very different from when service firms had only physical storefront interfaces. Technology trends have brought about the emergence of multi-interface services. According to them, the experience of customers is the result of all interactions with the firm through its different interface channels. Patrício, Fisk and e Cunha (2008) indicate that the technology trend, has complicated the development of services dramatically and requires new multi-
disciplinary approaches. From their case studies in the banking arena they noted that no service interface can cover all of the customers experience requirements. Therefore different service interfaces should complement each other to provide an overall satisfying service experience.

The Service Experience Blueprinting method was developed specifically for designing multi-interface service experiences. Service Experience Blueprinting builds on existing methods, joining the contributions of service management and software engineering to create a unifying method to address technology infusion into services. The Service Experience Blueprinting enables integrated design of multi-interface services by leveraging each channel’s advantages to enhance overall customer experience.

The Service Experience Blueprinting method comprises three stages:

1. **Assessment of the service experience for different service activities:** This stage uses qualitative and quantitative research to identify customer experience requirement dimensions and indicators, to analyze their importance and prioritization for the different service activities (independently of the channel used), and to assess relative service interface performance in satisfying those needs.

2. **Service design at the multi-interface level:** Based on the results of the previous stage, a Goal Oriented Analysis is developed to understand the desired service experience for given activities as well as to evaluate the contribution of different channel designs to satisfy Customer experience requirements. This analysis allows for an integrated design of the multi-interface offering, defining interface specialisation and integration.

3. **Service design at the concrete interface level:** After the multi-interface analysis, the design drills down to each service interface, using Service Experience Blueprinting diagrams. Based on the previous stages, each service interface is designed to support the specific activities previously defined, leveraging its capabilities to better satisfy Customer experience requirements while carefully designing service links to guide the customer to other channels whenever that enhances the overall service experience.

The Service Experience Blueprinting method thus unites paradigms from service management, Human Computer Interaction, and software engineering to enable an integrated design of the multi-interface service whilst also providing a systematic method for incorporating Customer experience requirements. In conclusion it can be said that the service experience method enables a more relational and experience-based conceptualization of services that is more in tune with emerging service trends and paradigms.
In a research on turning service concepts into service experiences Fynes and Lally (2008) did a review of the existing traditional service concept development literature and identified five common “themes”. Subsequently they argued that customer experiences are a progression from services. This means that experiential service concepts should include the core service elements as identified by them and additional experience specific components. This observation has led to a proposition of a conceptual model of service experience concepts. This model is presented in depicted in figure 4. We will briefly state the definition of each theme as by Lally and Fynes (2006);

- **Service Benefits;** The range of Value/Benefits to be made available to the customer in order to satisfy their identified core needs and desired outcomes. An experience should deliver core service benefits as well as supplementary desired experiential benefits. Experience benefits stem from the unique emotional and participative elements of the experience.

- **People;** The arrangement of human resources required to deliver the core service, contribute to social interactions and facilitate participative activities.

- **Physical;** Practitioners are guided to purposefully design the physical environment and sensory clues that are both the context in which the experience is delivered and part of the experience itself.

- **Process;** The organisational activities and resources that enable the delivery of the service benefits and desired outcomes.

- **Perception;** The collection of management actions constitute the vision for the experience and that signal the outcomes of the service experience to all stakeholders. Given that customer expectations of experiences are often considerably higher than for pure services, the management of perception in experiences is of vital importance.

- **Emotional Theme;** The articulation of the emotional outcomes the experience seeks to satisfy is critical to the success of the experience offering and should link strongly with the design of experience clues throughout the other experience concept elements.

- **Participation activities;** The design of opportunities for active customer participation which allow for the creation of inherently individual experiences for each customer.

Fynes and Lally (2008) identify the *Emotional Theme* and *Participation Activities* as the newest addition to service design and highlight these as the “novel” experience oriented elements of service design.
3.2. Discussion on Service Design approaches and components

We have chosen the experiential themes model by Lally and Fynes (2008) as our foundation for the discussion of experiential service components. We chose this model for the following reasons;

- **The model gives a holistic view on the subject matter based on an extensive literature research.** It is the only model in our study which is based on an extensive literature study and thus covers (potentially) all areas of service experience design components.

- **The model provides a clear segmentation of service components or “themes”.** As opposed to models like for instance the Strategic Experience Module, which tries to iterate mostly intangible components and thus gives a fuzzy depiction of service design and development.

The aim of the discussion is to give a depiction of service design in “themes” in order to facilitate our choice in narrowing down the scope of this study to core elements of interest. We have summarised the most relevant excerpts of theories discussed in the above section according to themes as by Lally and Fynes (2008) in the table below.

<table>
<thead>
<tr>
<th>Theme</th>
<th>Service Components</th>
<th>Scholars</th>
</tr>
</thead>
<tbody>
<tr>
<td>Desired Customer Outcome</td>
<td>Service Integration</td>
<td>Fynes and Lally (2008)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Stuart, Tax (2004)</td>
</tr>
<tr>
<td>Service Benefits</td>
<td>Functional service benefits</td>
<td>Fynes and Lally (2008)</td>
</tr>
<tr>
<td>People</td>
<td>Primary Customers</td>
<td>Voss, Zomerdijk (2007)</td>
</tr>
<tr>
<td></td>
<td>Fellow Customers</td>
<td>Berry, Carbone and Heackel (2002)</td>
</tr>
<tr>
<td></td>
<td>Service Employees</td>
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<tr>
<td></td>
<td>Back Office Employees</td>
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<tr>
<td></td>
<td>Emotional Service Clues</td>
<td></td>
</tr>
<tr>
<td>Physical</td>
<td>Sensory Design</td>
<td>Voss, Zomerdijk (2007)</td>
</tr>
<tr>
<td></td>
<td>Physical Clues</td>
<td>Berry, Carbone and Heackel (2002)</td>
</tr>
<tr>
<td></td>
<td>Signs, Symbols, Artefacts</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Service Journey</td>
<td>Patricio, Fisk and e Cunha (2008)</td>
</tr>
</tbody>
</table>
### Perceptions

- Service Clues
  - Emotional and Physical
  - Classical hierarchical learning effects

Stuart, Tax (2004)
Berry, Carbone and Heackel (2002)

### Emotional Theme

- Customer Experience Statement

Shaw (2005a, 2005b)
Berry, Carbone and Heackel (2002)

### Participation Activities

- Social interaction, which stimulates co-creative processes
- Artefact Inclusion

Gupta and Vajik (2000)
Stuart and Tax (2004)

<table>
<thead>
<tr>
<th>Table 2 :: Experiential Service Design Components arranged in Themes</th>
</tr>
</thead>
</table>

### 3.2.1. Desired Customer outcomes

Fynes and Lally (2008) put the Desired Customer Outcomes as central to experiential services. In fact they depict it to be central to the service concept. Stuart and Tax (2004) believe that service elements should be carefully integrated to attain the desired outcome. This view is shared by many scholars (i.e. Tax and Stuart, 1997; Berry et al., 2002; Voss and Zomerdijk, 2007; Fynes and Lally, 2008). The formulation of the desired customer outcomes serve as a continuous reference point to enable proper integration of these clues.

### 3.2.2. Service Benefits

Next to the Desired Customer Outcome in experiential terms, one can speak of outcomes in functional terms. When looking at the service benefits, we are looking at the provider’s perspective of what benefits and value will be delivered to the customer. Next to the primary reason for delivering the service, Fynes and Lally (2008) clearly state the experience as being an addition or evolvement from the core activity of delivering of service. Primary to the existing of the service is the functional value of the service. The service should aid the customer in attaining its goals.

### 3.2.3. People

We have chosen to extend the narrow definition of “People” by Lally and Fynes (2006) to include not only the front office and back office employees (Human Resources) that deliver the service but all other humans participating in the coming about of the service; Primary Customer & Fellow Customer. We have done this to allow for an interesting area of service design; “The fellow customer” as by the model proposition by Voss and Zomerdijk (2007).

Berry, Carbone and Heackel (2002) mention the “People” as part of their emotional clues thoughts and theory. Employees emit emotional clues, which are perceived by the customer and are essential to the perception of the service.
3.2.4. Physical

The model by Voss and Zomerdijk (2007) is useful for our purposes here. In their study they found the physical environment to have various roles including; accommodating the customers and employees, guiding behavioural activities and giving clues to what type of service could be expected. Fulberg (2004) emphasised the importance of proper usage of vision, sound, smell, music to create encapsulating retailing and service experience environment, which could lead to remembrance and thus loyalty in the longer run. Along similar lines Berry, Carbone and Heackel (2002) stressed the importance of using physical clues in the design processes of services.

3.2.5. Process

Lally and Fynes (2006) defined ‘Process’ as the organisational activities and resources that enable the delivery of the service benefits and desired outcomes. Voss and Zomerdijk (2007) have included service processes their model of experiential design areas. In their view ‘Process’ is the series of actions or events that take place in order to deliver the service. They remark that this ‘Process’ for a large part determine the flow of the customer through the organisation. In addition Voss and Zomerdijk (2007) mention the service as a journey approach as a way of designing service experience. The sum of the customer experience is represented by the touch-points, which customers encounter.

A second and more elaborate approach on this subject is by Patrício, Fisk and e Cunha (2008). They focus on developing the flow of experiential services on two dimensions 1) the customer flow through multiple service channels. 2) the flow of the customer for a single channel.

3.2.6. Perception

Berry, Carbone and Heackel (2002), state that customers experience both functional and emotional clues. Every company should be able to recognise the experience clues it is sending to its customers. The product or services for sale give off clues and likewise the physical environment and employees also give off numerous clues.

The strategic experience modules by Smitt and Bernd (1992) likewise focus on the explicit design of perception of product or service experience. They presented a process, which is based on the classical hierarchical learning effects model as a way of creating affective states towards products or services.

3.2.7. Emotional Theme

The emotional theme refers to the thoughts of Shaw (2005b) and Carbone and Heackel (2008). Any customer experience oriented company should have a statement comparable to a vision and mission, which expresses how the company should act and be perceived by the customer.
Both the “Experience Motif” by Berry, Carbone and Heackel (2002) and the “Customer experience statement” by Shaw (2005 a, b) are ways of formulating the envisioned customer experience in terms of organisational intent.

3.2.8. Participation Activities

According to Lally and Fynes (2006) participation activities and social interaction are critical differentiators between services and experiences and thus deserve separate analysis and scrutiny. Their position follows out of the work by Gupta and Vajik (2000), who state that one of the primary conditions for creating an experience is designing the activities in which clients engage. This also inline with thoughts by Stuart and Tax, 2004 who proclaim that delivering services is a co-creative process. As to say, services are developed together by both customer and service employees together.

The themes presented above and the description included above all relate to possible implementations of the space of properties as described by Dahlaard and Schütte (2008). It will enable us to make design choices for the research methodology presented in chapter four “Research Methodology”. In order to develop a research approach, which mirrors Kansei Engineering Type II, we will need to gain an understanding on theory, which relates to the space of semantics. This is described in the next section.

3.3. Literature Review – Theory on Indicators of Experience Quality

The section that follows relates to the “Span the Semantic Space” as presented by the scheme by Dahlaard and Schütte (2008). As previously stated, the objective of defining the space of the semantic space is to collect words or expressions that match a desired product experience. In the case of experiential service design, semantics expression should be sought, which express the experience of the service. We define these expressions as indicators of Experience Quality.

We tackled this by doing a literature search on studies, which cover the semantic expression of experience or emotions. We found a number of studies available on the semantic expression of experience. However many of these studies are oriented towards Interaction Design (i.e. Kort, 2007) or the Industrial Design field (i.e. Desmet, 2005). In our literature review we encountered one elaborate study on developing service experiences, which included a large number of emotive words for the management of the customer experience; The experience Clusters as by Shaw (2005b).

3.3.1. Experience Clusters

According to Shaw (2005b) focusing on the customer experience can lead to an increase in customer loyalty, attract new customers, reduce costs and increase spending by customers. There are a number of clusters that drive value and one that destroys value and loyalty. Figure 9 shows the how these clusters are arranged.
The *Destroying cluster* pertains to those emotions that destroy the positive experience and thus value of the service delivery. Some words in this cluster are: hurried, disappointed, neglected, unhappy.

Secondly they recognise the *Attention cluster*. It has been proven that customers that experience these emotions increase their spending on the service. This cluster can give customers a temporary high and attract customers to the organisation. Some of the words include; stimulated, interested, energetic. The *Recommendation cluster* refers to emotions that put customers in a reactive state. If someone would ask them which company or service they would recommend, they would first mention those companies that evoke the emotions presented within the *Recommendation cluster*. If one seeks to increase loyalty one should try to attain at least the emotions contained within this cluster. The words that are included in this cluster are: valued, safe, focused, trusted and cared for. The fourth cluster is the *Advocacy cluster*. Customers that feel these emotion will proactively tell other people about the organisation and are considered the ultimate drivers of loyalty through customer experience. Two words are included in this cluster: satisfied and happy.

According to Shaw (2005b) organisations should strive to evoke those emotions pertaining to the *Recommendation Cluster* and *Advocacy cluster* in order to increase loyalty behaviour of the customer and in order to increase spending by customers.

![Figure 9 :: Emotional Signature of value Shaw (2005b)](image)

was traditionally within the Kansei Engineering field, Kansei words choice tend to focus on those words that one would want to evoke through the product or service (and not the opposite). In this same sense we have decided to focus our attention on the words contained within the *attention* and *advocacy cluster*. The propositions presented in the next section relating to experience quality all relate to these two clusters.
3.4. The relationship between Experiential Design Components and Indicators of Experience Quality

In section 2.1.2. we explained the scheme by Dahlaard and Schütte (2008). They discussed two domains of analysis; the space of semantics, which relates to the depiction of the Kansei in a collection of semantic expressions (Kansei Words) and the space of properties, which relates to the selection of the properties of the product under study. They then present a synthesis process, which enables one to establish the relationship between those two domains.

In our observation the Experiential Design Components relates to the space of properties as presented in their scheme. Our aim is will thus become to use the theory on Experiential Design Components to develop a representation of the space of properties for the purpose of our study.

It is likewise our observation that the indicators of Experience Quality Indicators as discussed in section 3.3. form an adequate representation of the space of semantics. Our aim will thus become to use our understanding of the theory for the development of a space of semantics, for usage in our study.

This will entail that a number of the findings will have to be adapted and focused to the specific context of the study. For instance, the model by Lally & Fynes (2008) covers a broad scope of experiential service design themes. It is of value to narrow down the scope of the themes for the purpose of context chosen within the study. This will lead to a design methodology, which is manageable by a single researcher and will allow for a more in depth analysis on specific Experiential Design Components and indicators of experience quality. We have chosen to lay the focus on those themes and components, which have been perceived as novel or especially critical to the service delivery as by i.e. Voss & Zomerdijk (2007) and Lally & Fynes (2008).

Furthermore, it is traditional to the Kansei Engineering field to select Kansei words, which focus on those experiences, which the designer wishes to evoke through the product or service (rather than the opposite). In this same sense we have decided to focus our attention on the words contained within the attention and advocacy cluster.

Our assumption thus becomes that varying the content of the Experiential Design Components has influence on the Experience Clusters. The Research Design presented in the following chapter describes the process of implementing a selection of the Themes and Experiential Design Components and he Experience Clusters within a fictitious case.
4. Research Methodology

In the previous chapter we discussed different approaches to Experiential Service Design and presented a number of experiential service design components. We concluded the chapter by presenting our assumed relation between the Experiential Design Components and the Indicators of the Expected Experience Quality. In this chapter we will explain our design of a methodology for establishing the assumed relationship.

The topics presented in this chapter focus on answering sub research question three:

What would be the application of an approach which mirrors Kansei Engineering Type II on a fictitious case within the aviation industry?

Research Methodology


In this section we present our causal model, which to relate the different concepts discussed in the literature review.

4.2. Research Design

In this section we describe the research design in a step by step process. It details the implementation of the causal model presented in section 4.1.

4.1. Causal Model

4.1.1. The casual Relationship between the Experiential Design Components and the Expected Experience Quality

The main purpose of the study is to establish the possibility of using a methodology, which mirrors Kansei Engineering Type II for the purpose of designing and assessing experiential services. In order to do this we need to establish;

- if it is possible to design various levels of experiential service design components,
- if these different levels impact the expected utility, which respondents perceive.

The process of establishing these primary topics of interest, will aid us in answering the propositions, which pertain to the relationship between the Experiential Design
Components and the measures of the Expected Experience Quality presented in section 3.4.1. The relationship between these two concepts can be expressed in an experimental setup as given below;

\[
\begin{array}{c}
\text{X} \\
\text{Experiential Service Design Components}
\end{array}
\rightarrow
\begin{array}{c}
\text{O} \\
\text{Expected Experience Quality}
\end{array}
\]

Figure 11: Causal relationship between Experiential Design components and the Expected Experience Quality

In this experimental setup (X) denotes the various experiential service design components divided into levels and (O) the experience value of these different levels as expressed in experience quality.

In essence we want to measure the experience value in terms of the Expected Experience Quality (O) of the Experiential Service Design Components (X) by varying these across a number of unique scenarios of a fictitious study case of an experiential service within the aviation industry. This approach is in line with the engineering philosophy of Kansei Engineering Type II.

Conjoint Analysis is an appropriate method for doing such a study and has been used for Kansei Engineering Type II for product design (Dahlaard and Schütte, 2008). This study revolves around the utilisation of Conjoint Analysis as a multivariate method to establish the potential relationship between the concepts X and O.

We will express the Expected Experience Quality utility value relative to the levels of the different Experiential Design Components. Hair (1995) defines the term (relative) utility as used within Conjoint Analysis as the conceptual basis for measuring value. It is a subjective judgement of preference unique to the respondent participating in the study. Utility is assumed to be based on the value placed on each of the levels by the participating respondent.

Furthermore we will use the Averaged Importance Score as a way of enabling us to make comparative statements on the Experiential Design Components as a whole. The averaged importance score is a standardized measure of the relative strength of the impact of each factor (the Experiential Design Components) included in the study. It allows us to make comparative statements between the different experiential service components. In our study the average importance score should be interpreted as the weighting of the individual service component in relation to the measures that together comprise our definition of the Expected Experience Quality in terms of percentages.

The initial selection of Experiential Design Components and the expected quality indicators are presented in table Y and is comparable to the theory discussed in section 2.3. and 3.3.1. The section which follows details the process of the research design and the final selection of these components and indicators.
Proposed relation between Experiential Design Components and Experience Clusters

<table>
<thead>
<tr>
<th>Themes &amp; Experiential Design Components</th>
<th>Experience Clusters</th>
</tr>
</thead>
<tbody>
<tr>
<td>Service Benefits</td>
<td>Advocacy Cluster</td>
</tr>
<tr>
<td>Functional service benefits</td>
<td>Happy</td>
</tr>
<tr>
<td>People</td>
<td>Recommendation Cluster</td>
</tr>
<tr>
<td>The fellow customer</td>
<td>Valued</td>
</tr>
<tr>
<td>Service Employee</td>
<td>Safe</td>
</tr>
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<td>Physical</td>
<td>Focused</td>
</tr>
<tr>
<td>Physical Service Clues</td>
<td>Trusted</td>
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<td>Process</td>
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<td>Flow management</td>
<td></td>
</tr>
<tr>
<td>Service Journey</td>
<td></td>
</tr>
</tbody>
</table>

Table 3: Proposed relation between Experiential Design Components and Experience Clusters

4.2. Research Design

4.2.1. Introduction

The study is based on a fictitious case of an experiential service within the aviation industry. The case is based on topics discussed from the literature review and findings from an explorative study with stakeholders from the industry. Using a fictitious case has a number of advantages above taking an empirical study case for our purposes:

- It gives us the liberty to focus on specific experiential design combinations, with the limited risk of inclusion of unwanted disturbances.
- The study is focused on the development of experiential services in the early stages of design. It is not uncommon for early concepts of a service design to be fictitious representations based on sketches, storylines or mock-ups.
- It facilitates the process of developing levels of experiential design components, which can be combined into different depiction of the service.

The case provided us with a framework for the development of the different levels of the Experiential Design Components as described in table Y. Our final selection of the experiential service design components and their levels fitted the following criteria:
a. A service should be represented that serves the interest of most if not all the actors interviewed during the explorative study of the industry.

b. It should be a concept of a service provision that is familiar to a large part of the travelling Dutch population.

c. It should be a service concept that allows for the depiction of some of the findings from the literature and interviews.

d. It should be a service concept that allows for the depiction of the experiential service design components in levels.

The process of developing the case was done in three primary phases. This has been depicted in figure 12. We conducted an explorative study with seven stakeholders from the industry (a large scale transit hub airport, an originating/destination airport, a leisure class airline, a high class airline, a large scale ground services operator, a research institute and a consultancy firm for the aviation industry) to aid us in selecting Experiential Design Components and levels that fit the above stated criteria. This led to an initial selection of four Experiential Design Components and seven indicators of Expected Experience Quality. Among these where the design components People, Hardware Support, Emotional Theme, Emotional Service Clues and the indicators Happy, Pleased, Cared for and Valued.

We then used an iterative process, rounds of refinements, to develop a case and a selection of indicators of Expected Experience Quality, which could be presented to respondents and which could lead to answer our assumption and statements presented in section 3.4. and 4.1.

In detail the rounds of refinement entailed the following activities. First we needed to reduce the number of design themes & Experiential design components, as this led to long and complicated scenarios, which would be difficult to interpret by respondents. We removed the “Emotional Theme” as it would be difficult to express this successfully across nine variations of scenarios. The Emotional Theme is especially relevant to the strategic endeavours and less to the specific implementation of service (as is mimicked by the development of the fictitious case). With similar reasoning we decided to omit the theme “Service Benefits” in subsequent rounds of design as the primary focus of the study is on service experience and not on the functional benefits of the service. The design theme “Process” was also omitted from the design as implementing variations on the
process (the service journey) would lead to too extensive variations between the scenarios. This could have lead to the theme becoming a confounding factor in the assessment of the experience of the other Experiential Design Components included in the study. One experiential design component “The Fellow Customer“ was discarded from the case as it added limited value to the differentiation of the scenarios. In subsequent rounds the Experiential Design Components for the theme “People” and “Perception” where combined, as they were closely related and caused confusion amongst those participating in our pre-testing workshop.

This process thus led us to focus on three specific design themes, which could successfully be expressed within written scenarios. The final case consisted of nine scenarios, which we developed by combining different expressions of the Experiential Design Components in levels. The selected Experiential Design Components consisted of physical service clues, emotional service clues and self determination activities (Participation Activities). (Please see table 4).

<table>
<thead>
<tr>
<th>Final Selection of Design Themes, Design Components and Levels</th>
</tr>
</thead>
<tbody>
<tr>
<td>Selected Design Themes</td>
</tr>
<tr>
<td>Physical</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Perception</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Participation Activities</td>
</tr>
<tr>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

The indicators of the Expected Experience Quality were also refined during this process. The final selection of Expected Experience Quality indicators comprised a set of five indicators; customer satisfaction, comfort, assurance, feeling valued and if the service surpasses the customer’s expectation. The selection of indicators represents a diversified set of experience quality indicators and closely relates to the selected Experiential Design Components included in the study.

Through an online survey respondents (N=123) were asked to rate their Expected Experience Quality in relation to each scenario. Respondents were members of the general Dutch population between the age of twenty-one and sixty-five and were slightly biased in gender (58% male).

The results led to promising prospects with regard to the usability of the approach for the design and assessment of experiential services within the industry.

We have included a detailed process of the research design. It has been represented in five distinctive steps below. Each step is discussed in more detail in the sections which follow. Figure X gives a holistic account of the steps undertaken.

**Step 1 – Literature review** This step refers to the work undertaken in chapters two and three.

**Step 2 – Explorative Study with stakeholders from the industry** The explorative study was done with a diversified set of stakeholders from the industry. Our
explorative study resulted in insights in the current state of the industry and provided us with input in terms of the experiential design components, which could be feasible for our study.

**Step 3 – Case Development** Gives a more in depth description of the process undertaken to develop the case.

**Step 4 – Case Distribution** Describes the details of distributing the study case to respondents. We will also discuss the internal, external and .. validity here.

**Step 5 – Conclusions** Conclusive remarks in light of the findings from the study.

### 4.2.2. Step 1 - Literature Review

In the literature review we discussed the philosophy and fundamentals of Kansei Engineering. We delved into the details of Kansei Engineering Type II and presented a scheme on the process of this engineering approach. The scheme is taken as reference to the development of the research methodology. Subsequently we introduced six perspectives on experiential service design and divided the experiential design components, which came from these various perspectives according to the model by Lally and Fynes (2006). The chapter continued with a concise discussion on experience quality measures according to the experience clusters as by Shaw (2005b). The discussion on Kansei Engineering Type II, the Experiential Design Components in terms of experiential themes and the experience quality measures led to a number propositions, which have been analysed by utilising the research design presented here.

### 4.2.3. Step 2 - Explorative Study with stakeholders from the industry

#### 4.2.3.1. State of the Industry

We conducted an explorative study with stakeholders from the industry in order to gain insights into the current state of the aviation industry.

We developed a typology of stakeholder groups and subsequently interviewed one stakeholder from each group by way of semi-structured interviews (Appendix - Stakeholders). This interview format uses an open ended question structure and most questions are not formulated ahead of time. We included a list of the stakeholders group interviewed. For a detailed description on the stakeholders and the typology please refer to Appendix - Stakeholders:
Step 1 - Literature Review

- Scheme by Dahlaard and Schütte (2008) on Kansei Engineering Type II taken as reference for the research design.
- Six perspectives on experiential design & experiential design components divided among experiential themes as by Lally and Fynes (2006).
- Discussion on the experience clusters by Shaw (2005b) as experience quality measure.
- Presentation of assumed relationship between experiential design components and experience quality indicators.

Step 2 - Explorative Study with stakeholders from the Industry

- General discussion on the nine themes Lally and Fynes (2006).
- Specific discussion on experiential design components.
- Discussion on possible indicators of expected experience quality.
- Results are used as input for the case development.

Figure 13: Overview of the research design process

Large scale ground services operator (Appendix – Stakeholder A)
High Class Flight Provider (Appendix Stakeholder B)
Academic Research Institute (Appendix – Stakeholder C)
Leisure Class Flight Provider (Appendix – Stakeholder D)
Consultancy firm for the aviation Industry (Appendix – Stakeholder E)
Large Scale Transit Hub Airport (Appendix – Stakeholder F)
Originating/Destination Airport (Appendix – Stakeholder G)

We identified a number of urgent matters within the aviation industry. The aviation industry has encountered different challenges in the last few years including 9/11, sharp increase in fuelling costs, tax increases and an increasingly stifling competition between stakeholders. These leads to an operating environment, with two urgent issues at hand. Firstly, ways should be sought to reduce costs on all levels of operation. Secondly, there should be an increase in focus on the customer experience in order to enhance competitive positioning. The most salient changes within the industry have been on increasing the customer experience whilst striving to increase cost efficiency. An example of this is the increase of Self Service Options by many stakeholders.
During the interview we discussed a number of Experiential Design Components as found from our literature study. We will briefly mention the most important findings here.

**Fellow Customer:** Few stakeholders focused on the fellow customer as an explicit service experience component. Many did put an effort in creating experience for other than the primary paying customer. i.e. the Leisure Class Flight provider has elaborate programme focus on the child traveller. Our conclusion is that stakeholders within the industry focus on the design of the Fellow Customer to enhance the experience of their primary customer base. Some are considered proven methods, such as catering to the secondary customer to enhance the loyalty and experience of the primary customer. These findings are however mostly restricted to the flight
providers. Other stakeholders seem to lack a deliberate focus on the fellow customer as an experiential design component.

**Service Journey;** Almost all stakeholders utilised some form of the Customer Journey approach through the expansion of its core product offerings. For all stakeholders involved it meant significant changes in how their processes are operated. The stakeholders seem to be aware of the affects that the many touchpoints of the service has on the experience on the customer. They are however not able to influence all these touchpoints in the manner they would like. The interdependence on different stakeholders during the service journey hampers the process of delivering the service journey as envisioned by the many stakeholders interviewed. In fact the High Class Flight provider, the Leisure Class Flight Provider and the Transit hub provider mentioned the security check point as major bottleneck in providing favourable customer experiences. The security providers don’t have a mindset that is focused on the customer experience.

**Participation Activities;** Most stakeholders focused on delivering self service (i.e. Self Service kiosks) as a way of increasing participation activities. The Leisure Class Flight Provider pursues a service strategy, which puts high emphasis on service choice options. Customers are able to make service choice options in great detail and long before their departing flight. It is seen as way of increasing customer comfort and as a market differentiation strategy. The representative of the Originating/Destination Airport is not a proponent of such strategies as he feels that this puts an unnecessary burden to customers. In his opinion customers want a pre-paved service experiences. They don’t want to be burdened with a lot of choice options, when going on vacation or going on business trips.

Although the industry has increased its focus in the area of participation activities, more creative and alternative approaches can be developed that lead to increased passenger participation within the service delivery. The only exception found is the High Class Flight Provider, which provides an online community as a complementary service as a way of increasing Participation Activities. It is our conclusion that the industry is focused on one specific area of providing Participation Activities.

**Customer Experience Statement;** Many stakeholders did not have a customer experience statement. When asked about concepts pertaining to the emotional Themes, such as the Customer Experience Statement, most stakeholders referred to an experience oriented marketing slogan, which they admitted they did not know by heart. Clearly the exact distinction between the Customer Experience Statement (an Intra Organisational experience statement) and a marketing slogan (a short external oriented statement) is not known by most stakeholders. The only stakeholder in this study that utilised a clearly defined Customer Experience Statement was the High Class Flight Provider. They recently introduced their Customer Experience Statement and are currently permeating it throughout the organisation. Our conclusion is that the focus on this experiential design component is underdeveloped.

**4.2.3.2. Additional Important Findings**

Other relevant findings were that stakeholder tend to rely on adhoc approaches to design their services and service experiences (this according to the Leisure Class
Flight Provider and Large Scale Transit Hub Airport). None mentioned specific design approach as encountered in our literature study.
The Stakeholders High Class Flight Provider and the Consultancy Firm mentioned the experience of “feeling assured” about the flying experience as a valuable addition to those expressed by the experience clusters by Shaw (2005b). Many customers are still nervous about the flying experience and about ensuring that they arrive at the various touch points throughout their journey on time.
The representative for the consultancy firm remarked that the inclusion of an SMS service could be a valuable method of increasing or improving information provision to customers. He believed it increased the feeling of assurance for customers. In a separate interview the High Class Flight Provider had similar comments about the inclusion of an SMS service for information provision. It could be a way of individually informing their customer in case of delays or change of flight departure time. It could reduce waiting times and agitation during unexpected service interruptions.
When asked about their current usage of tools or need for tools to manage their customer experience management, almost all stakeholders replied that they had a need for better tools to measure the customer experience. Many employed qualitative and quantitative marketing research techniques to ascertain the experience of the customer. For instance the large scale ground services operator uses Service Level Agreements to ensure that their services are up to required level and both flight providers utilised periodic (in flight) surveys and consumer panels to access the current experience of the customer.
It is our observation that most tools are focused on the measurement of the implemented services to provide incremental improvement of the service. In this sense it is interesting to look into other customer experience measurement possibilities, such as Kansei Engineering which focuses on the measurement of product or service concepts.
4.2.4. Step 3 - Case Development

4.2.4.1. Rounds of Development

The case development proceeded in four rounds of refinement and fine tuning. In each round we made significant changes to the selected experiential service design components and Expected Experience Quality indicators. In the second round we performed an extensive pilot test with six participants from the TNO ICT. This pilot test was aimed at ensuring that the levels of the Experiential Design Components were indeed interpreted as intended within the case. The practical process of developing the research led us to reduce the number Experiential Design Components and Expected Experience Quality indicators. Table 5 gives a depiction of the intermediate results by round result of the process. For a detailed description of the process please refer to Appendix - Case Development. We have summarised the most important decisions below:

<table>
<thead>
<tr>
<th>Experiential Design Components</th>
<th>Round 1</th>
<th>Round 2</th>
<th>Round 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hardware Support</td>
<td>Public Screen -</td>
<td>Desk Service -</td>
<td>Indifferent Behaviour -</td>
</tr>
<tr>
<td>Service Employees</td>
<td>Not Empathic -</td>
<td>Very Empathic -</td>
<td>Cordial Behaviour</td>
</tr>
<tr>
<td>Fellow Customers</td>
<td>Not Present -</td>
<td>Present -</td>
<td>Free meal in transit</td>
</tr>
<tr>
<td>Service Clues</td>
<td>Indifferent Behaviour -</td>
<td>Cordial Behaviour -</td>
<td>Cordial Behaviour +</td>
</tr>
<tr>
<td>Emotional Service Clues</td>
<td>Indifferent Behaviour -</td>
<td>Cordial Behaviour -</td>
<td>Free meal in transit</td>
</tr>
<tr>
<td>Physical Service Clues</td>
<td>No public display -</td>
<td>Public display -</td>
<td>SMS service</td>
</tr>
<tr>
<td>Self Determination</td>
<td>No options -</td>
<td>Many service options</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Expected Experience Indicators</th>
<th>Round 1</th>
<th>Round 2</th>
<th>Round 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advocacy Cluster</td>
<td>Happy -</td>
<td>Pleased -</td>
<td></td>
</tr>
<tr>
<td>Recommendation Cluster</td>
<td>Valued -</td>
<td>Trusted -</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>Assured -</td>
<td>At ease -</td>
<td></td>
</tr>
</tbody>
</table>

Table 5 :: Rounds of development
• **Reduction of the selected experiential service design components from five to three.** The process of developing the study case led to the systematic reduction of the number of experiential design components, which could realistically be depicted within the scenarios. Significant reductions were for instance, the focus on services provision through an employee behind a service desk only. First we considered focusing on employees behind a service desk and those holding a handheld device. However this proved too complicated. Other aspects that where discarded where the Fellow Customer as it had limited added value to the case.

• **Reduction of the selected Expected Experience Quality indicators from seven to five.** The general complaint by participants in pilot testing was that seven indicators presented a much higher load than they were capable of handling. In the third round we settled on five indicators to reduce respondent fatigue and to ensure that we had a set of indicators that would be answered properly.

• **Change of case language from English to Dutch** The initial choice of language was English. Because of concern of language barriers in the first round we decided to translate the scenarios into Dutch. This would ensure that our scenarios would not be mis-interpreted by respondents and it would increase the number of respondents that could participate.

• **The introduction of Expected Experience Quality indicators outside the scope of the experience clusters by Shaw (2005b)** Through brainstorm sessions and explorative interviews we came upon other indicators of the Expected Experience Quality, which would form a more diversified representation of our topic of interest.

• **Great effort was applied to make the distinction between the levels of the service experience components clear and distinct.** During the pilot testing and the workshop various participants remarked that the difference between scenarios was not clear enough to them. We made diligent effort to increase the differences between levels enough to ensure clear distinction.

### 4.2.4.2 Final Selection of Experiential Design Components

The final selection of experiential service design components consisted of three areas of interest. The selection of experiential service components are:

- **Emotional Service Clues**
  - *High:* Empathic Service Employee
  - *Low:* Non Empathic Service Employee

As seen in the literature review many scholars see the behaviour of the Service Employee as central to the customer experience (i.e. Voss and Zomerdijk 2007, Nijs
and Peters 2002, Lally and Fynes 2006). Likewise stakeholders, like the Large Scale Ground Services Operator, put primary emphasis on the development of their employees in emphatic skills. As empathy is a rather intangible attribute of the service delivery, we decided to only distinguish between two levels of emphatic behaviour. Either the service employee shows very empathic behaviour (High) or omits to present any empathic behaviour to the customer (Low).

- Physical Service Clues
  - Low: No indication
  - Medium: Public Display of Departure Times
  - High: SMS Service

The High Class Flight Provider and the Consultancy Firm proposed new ways of informing customers on their departure times and travel time to their departure gates. The inclusion of an SMS could be seen as a potential way of improving the customer experience as opposed to Public display that offers information at aggregate level. We decided to include this here as a way of perceiving how such a service provision would be evaluated in comparison to commodity service provisions such as public displays.

- Participation Activities (Self Determination)
  - Low: No Service choice
  - Medium: One service choice
  - High: Multiple service choices

Fynes and Lally (2006) depict Participation activities as a key service component to the customer experience. Our explorative study showed that service providers (i.e. the Leisure Class flight provider) are increasingly emphasising service choice options as an experience enhancer. However this practice contradicts statements of other stakeholder within the industry. The representative of the Originating/Destination Airport views this approach as a burden to customers. Our quest thus becomes to analyse to first of all if customers perceive a different experience from choice provisions. Secondly, if the approach presented here can be seen as a valuable way of ascertaining the value of such experiential design components.

4.2.4.3. Final Selection of Expected Experience Quality Indicators

As we interviewed different stakeholders it became apparent that different stakeholders preferred additional experience quality indicators to the ones presented in the experience clusters by Shaw (2005b). They mentioned indicators, which they perceived as especially relevant to the industry; the feeling of assurance. Secondly, we noted that all indicators are pointed towards the emotional component of the customer experience. As our focus on Experiential Design Components is on both emotional and physical aspects, it would be coherent to include this representation in the Expected Experience Quality indicators as well. Our primary criteria became to present a diversified set of Expected Experience Quality indicators.
Our selection of indicators is presented below. Between brackets we have included the Dutch translation as presented to the respondents.

Our selection of Indicators of Expected Experience Quality are (in Dutch):

- **You feel valued as a customer (U voelt zich gewaardeerd als klant.)**
  Shaw et al. (2005b) see the feeling of being valued as the primary emotion, which leads to customers, who recommend the service to other potential customers. (see section 3.3.).

- **The service makes you feel comfortable (De dienstverlening is gemakbevorderend.)**
  This indicator was added to match the physical service clues as related to an Experiential Design Component. We can ascertain if it is possible to establish the relationship between the physical oriented indicator of experience and the physical service clues presented in section 4.2.5.1.

- **The service makes you feel assured (U ervaart de dienstverlening als geruststellend.)**
  Although the recommendation cluster by Shaw (2005b) includes the feeling of being ‘safe’ or ‘cared for’, these did not completely encapsulate the essence of what most stakeholders within the industry want to portray. Most stakeholders also want to reduce the feeling of travelling stress by increasing the feeling of assurance. Passengers need to be assured that they arrive on time, that their luggage is safe.

- **You are satisfied with the service (U bent tevreden over de dienstverlening.)**
  We have chosen to focus on a single emotion of the advocacy cluster by Shaw (2005b). As ‘satisfaction’ is also a common and general measure of experience quality it is of interest to see how this common measure fairs with other experience quality indicators such as ‘The service surpasses your expectation’.

- **The service surpasses your expectation (De dienstverlening overtreft uw verwachtingen.)**
  Both are common measures of customer satisfaction. By including these measures in the study we can make some preliminary statements on how respondents evaluate the service differently, dependent on the measure presented.

### 4.2.5.3. Scenarios

The final setup of the survey consisted out of nine scenarios with different combinations of levels from the experiential design components. The combination of levels has been done according to an Orthoplan, which was developed in SPSS. An Orthoplan gives a depiction of subset of all the possible level combinations for the attributes in a study.

We developed descriptions for each of the possible levels. An overview of these descriptions and Orthoplan has been included in the Appendix – Case Development. An example of one the scenario has been presented in textbox 1 below.
4.2.5. Step 4 – Case Distribution

4.2.5.1. Online Survey

The case was implemented in an online survey tool, which was supplied by TNO ICT. The survey was made available on the intranet of TNO, which led to an exposure to a total number of 4500 potential respondents. A further 600 Colleagues and associates outside the firm, were also approached through email for participation.

All recipients of an email were requested to forward the mail to two or three other potential respondents for participation in the survey. We included a small incentive for those that were willing to participate in the study.

Four variations of the survey were developed. These variations differed in the sequence in which the different scenarios were presented. This was done to reduce the effects of respondent fatigue and bias due to unfamiliarity with the information presented within the scenarios. The results of the surveys were combined to compile a single SPSS database.

Textbox 1 :: Scenario example

You are arriving back at Paris ‘Charles de Gaulle’ International Airport, from a vacation in Dubai. You are in transit for your connecting flight to Schiphol Airport. After passing through the security check you are free to move about in the lounge area.

[Physical Service Clues - High] As you enter the lounge area you receive a message from your airline on your mobile phone. It states that your connecting flight is leaving in 2 hours from gate D26, which is a 30 min walking distance.

You decide to take a seat in the lounge area and take a look at the pictures of your vacation. Since you want to arrange some details for your flight you go to a helpdesk.

[Emotional Service Clues - Low] The stewardess is busy with a colleague and looks at you questioningly after a while.

You ask if it is possible to arrange a specific seat for your flight.

[Participation - High] The stewardess checks her computer screen and shows you a top view of the airplane interior. “Please choose an empty seat to your likeness.” You choose a window seat. Next she asks which newspaper you would like and checks whether it will be available on the flight. You thank the stewardess.
4.2.5.2. Data Collection

The results for the four variations of the online survey returned similar results. No significant difference between the different datasets was observed. The total number of participating respondents was 123.

The results of the study are slightly biased in terms of gender. 58 percent of respondents were male (versus 42 percent of which were female). 98 percent of respondents were between 21 and 65 years of age. The study thus mostly covers the working population.

Furthermore the majority of respondents have flown with a commercial flight provider in the last two years (94 percent), whilst 67 percent fly at least once a year. 17 percent of respondents fly once a month. Another 14 percent fly’s less than once a year.

<table>
<thead>
<tr>
<th>Gender &amp; Age</th>
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<tbody>
<tr>
<td>Male</td>
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<tr>
<td>Female</td>
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100 %

<table>
<thead>
<tr>
<th>Age</th>
<th></th>
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</thead>
<tbody>
<tr>
<td>0-20</td>
<td>0,8 %</td>
</tr>
<tr>
<td>21-40</td>
<td>78 %</td>
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<td>66-80</td>
<td>0,8 %</td>
</tr>
<tr>
<td>81+</td>
<td>0 %</td>
</tr>
</tbody>
</table>

100 %

Table 6 :: Gender & Age

4.2.5.3. Data Results

The results of the study are discussed in chapter five “Results”. The results are discussed in terms of utility and Averaged Importance Score. The discussion on these results subsequently lead us to make statements on the appropriateness of the approach for the design and assessment of experiential services.

4.2.5.4. Validity

Validity refers to the relation between a statement concerning reality and the way that statement has come about. A statement is validated when the statement is justified by the way it has come about. We will discuss three different forms of validity here; internal, construct and external validity.

4.2.5.5. Internal Validity

The key question in internal validity is whether observed changes can be attributed to the programme or intervention and not to other possible causes. (socialresearchmethods.net, 2009) Internal validity is increased through a systematic approach of the analysis and the research design. We have taken a number of measures to increase the internal validity of the study:

- A single researcher was responsible for the design of the study. This made it important to include a validation process for the terminology used to express the different levels of the Experiential Service Components. The workshop in round two of refinement was organised for this purpose.

- All levels of the Experiential Service Components were kept consistent throughout the study. Furthermore we included labels for each of the
Experiential Service Components presented in the scenarios. This was done to increase clarity and reduce the likelihood of respondents not perceiving the different levels of the experiential service components within the different scenarios presented.

- The nine scenarios were setup in four different surveys. Each presented a different sequence of the nine scenarios. In this manner we could ensure that the influence of factors such as respondent fatigue were reduced.

4.2.5.6. Construct Validity

According to (socialresearchmethods.net, 2009) Construct validity refers to the degree to which inferences can legitimately be made from the operationalisations in the study to the theoretical constructs on which those operationalisations were based. All components of the study are either related to experiential service components as presented in the academic literature or in case of the goal variables they are likewise based on findings from the literature or the explorative study.

The term Expected Experience Quality encompasses a great variety of elements associated with the perception of a service by a customer. We have included a variety of focus areas of Expected Experience Quality in the study here. We do not claim to cover all areas of Expected Experience Quality here. Mainly Emotional and Physical aspects relating to the Expected Experience Quality were covered. Each goal variable and experiential design component has been tested in at least one pilot test for their clarity and understanding of their meaning.

4.2.6.7. External Validity

External validity refers to the degree that the conclusions from the study can be generalized to other people, organizations, situations and time. (socialresearchmethods.net, 2009)

People

The study has been based on a non-randomized subset of the Dutch population. Potential respondents were approached through email or the TNO intranet. The potential respondents, which were approached by email, were requested to forward the mail to at least three other people with their circle of email acquaintances. This means that there has been no pre-selection of respondents other than the original set of potential respondents to which the request for participation had been sent to. These included mostly people from the consultancy firm and associates of the researcher.

However the aim of the study is to establish the utility value for the adult travelling population. Most of the participants had an age between 20 and 65 (98%) and had last flown with a commercial flight provider within the last two year ago (94%). 74% of the participating population flies with a frequency of at least once every two years. We believe this explorative study to be an adequate depiction of the population within these co-variate ranges found within this study.
Places & Settings

The study was done utilising scenarios in a written format in an online survey. The conclusions of the study might have been different if the same scenarios would have been presented in an experimental setup, with tangible artefacts or visual aids instead of written scenarios. As the experience of a service is highly emotional and subconscious in nature, it is probable that different results would have been found in an experimental setup.

Time

The survey was made available in the period of September 2008. This is right after the summer travelling period in the Netherlands. Many of the participants had probably taken a flight in that summer. It is possible that their recent flight experience could have led to different responses than if it had not been taken just after a travelling period. However we assume that these effects are minimal in comparison to other factors, i.e. a major aviation crisis. As no calamity or crisis was established during our study we assume that the results of the study are independent of the time of inquiry.

4.2.6. Step 5 – Conclusions

As a last step we summarised the most important findings and made implications for theory and management. This is presented in chapter six. The chapter is concluded with recommendations for further research.
5. Results

In this chapter we will present the results from the methodology discussed in chapter Four. The topics presented in this chapter focus on answering sub research question four;

What are the results of applying the approach?

Results and Discussion

<table>
<thead>
<tr>
<th>5.1. The influence of the Experiential Design Components on Experience Quality</th>
<th>5.2. Appropriateness of the approach for design and assessment</th>
</tr>
</thead>
</table>

In section 4.1. we identified two requirements, for the appropriateness of the approach for the design and assessment of experiential services. In order to do this we needed to establish;

- if it is possible to design various levels of experiential service design components,

and

- if these different levels impact the expected utility, which respondents perceive.

The results of the case presented in the research design will reveal if these requirements were met. We will discuss these results in the following two sections;

5.1. The influence of the Experiential Design Components on the indicators of Experience Quality

In the first section we will discuss the results of the study in terms of utility and Averaged Importance Score. In this section we will also discuss the results in terms of Pearson’s R and Kendall Tau. The section is concluded with a summary of the most important findings.

5.2. The Appropriateness of the approach as a way of designing and assessing experiential services

In section two we will then discuss the appropriateness of the methodology by reflecting on the results in relation to the two requirements presented above.
5.1. The influence of the Experiential Design Components on the indicators of Experience Quality

5.1.1. Utilities

We will start this section by introducing the results of the case in terms of utility. The terminology of utility has been explained in section 4.1. We have positioned all the indicators of Expected Experience Quality above and expressed the utility in relation to the levels of the Experiential Design Components in the columns (Table 6). The constant at the near bottom of the columns refers to the general rating of the indicators under study. The results for Pearson’s R, Kendall Tau and Non Response will be discussed at the end of the section.

To facilitate the discussion we will present the findings in terms of the Experiential Design Components (Physical Service Clues, Emotional Service Clues, Self Determination).

### Table 6: Expected Experience Quality in terms of Utility

<table>
<thead>
<tr>
<th></th>
<th>Valued</th>
<th>Assured</th>
<th>Comfort</th>
<th>Satisfied</th>
<th>Surpasses Expectations</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Physical Service Clues</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No Public Display</td>
<td>-0.15 0.02</td>
<td>-0.13 0.04</td>
<td>-0.21 0.06</td>
<td>-0.15 0.04</td>
<td>-0.15 0.03</td>
</tr>
<tr>
<td>Public Display</td>
<td>0.06 0.02</td>
<td>0.00 0.04</td>
<td>-0.08 0.06</td>
<td>0.02 0.04</td>
<td>-0.03 0.03</td>
</tr>
<tr>
<td>SMS Service</td>
<td>0.09 0.02</td>
<td>0.13 0.04</td>
<td>0.29 0.06</td>
<td>0.13 0.04</td>
<td>0.18 0.03</td>
</tr>
<tr>
<td><strong>Emotional Service Clues</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non Empathic Employee</td>
<td>-0.79 0.02</td>
<td>-0.52 0.03</td>
<td>-0.33 0.05</td>
<td>-0.53 0.03</td>
<td>-0.58 0.02</td>
</tr>
<tr>
<td>Highly Empathic Employee</td>
<td>0.79 0.02</td>
<td>0.52 0.03</td>
<td>0.33 0.05</td>
<td>0.53 0.03</td>
<td>0.58 0.02</td>
</tr>
<tr>
<td><strong>Self Determination</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No Service Choice</td>
<td>-0.37 0.02</td>
<td>-0.36 0.04</td>
<td>-0.51 0.06</td>
<td>-0.48 0.04</td>
<td>-0.58 0.03</td>
</tr>
<tr>
<td>Single Service Choice</td>
<td>0.06 0.02</td>
<td>0.08 0.04</td>
<td>0.16 0.06</td>
<td>0.15 0.04</td>
<td>0.13 0.03</td>
</tr>
<tr>
<td>Multi Services Choice</td>
<td>0.31 0.02</td>
<td>0.28 0.04</td>
<td>0.35 0.06</td>
<td>0.33 0.04</td>
<td>0.45 0.03</td>
</tr>
<tr>
<td><strong>Constant</strong></td>
<td>3.55 0.18</td>
<td>3.50 0.03</td>
<td>3.60 0.46</td>
<td>3.71 0.03</td>
<td>3.25 0.02</td>
</tr>
<tr>
<td><strong>Pearson’s R</strong></td>
<td>1.00 0.00</td>
<td>1.00 0.00</td>
<td>0.99 0.00</td>
<td>1.00 0.00</td>
<td>1.00 0.00</td>
</tr>
<tr>
<td><strong>Kendall’s tau</strong></td>
<td>1.00 0.00</td>
<td>0.94 0.00</td>
<td>1.00 0.00</td>
<td>1.00 0.00</td>
<td>0.94 0.00</td>
</tr>
</tbody>
</table>

| N                | 122 111 123 119| 122 122 122 119| 122 122 122 119| 122 122 122 119| 122 122 122 119|
| Non Response     | 1 12 0 4 1    | 1 12 0 4 1    | 1 12 0 4 1    | 1 12 0 4 1    | 1 12 0 4 1    |

5.1.1.1. Physical Service Clues

By focusing on the 'Physical Service Clues' we gained insights on how the physical aspects of the service provision could have an influence on the expected experience of customers. We chose to focus on an SMS service and a Public Display as a means...
of transferring flight information to passengers. This enables us to make statements on how a novel approach (SMS service) compares to a commodity service provision (Public Display) or the lack of both service provisions. What we first noticed from the data is the consistency of the results across all indicators of Expected Experience Quality. The SMS service resulted in the highest utility across all indicators and is then followed by the Public display. As expected the omission of both service provisions led to the lowest utility values.

For the indicator *You feel valued as a customer* (Valued) there is a slight but significant difference between the utility levels of the service provisions. Respondents thus felt that the inclusion of an SMS service would only increase the feeling of being valued in small amounts (0.03). This is in stark contrast to the indicator *The service makes you feel comfortable* (Comfort) as the difference in utility between both forms of service provision is 0.37. This is the largest difference between both forms of the service provisions found. It indicates that providing an SMS service can be expected to have the greatest positive influence on the experience of comfort.

### 5.1.1.2. Emotional Service Clues

'Emotional Service Clues' focus on those aspects of the service, which are related to portraying the emotions of the employees, which deliver the service. We chose to focus on the empathic skills of the service employee and contrasting this with the behaviour of a non empathic employee. The inclusion of an empathic service employee led to positive utility values across all indicators. The most prominent result was for *You feel valued as a customer* (Valued) (0.79). This is especially of interest as our findings from the literature study indicated that generating the feeling of being valued is central to attaining customers, who are willing to recommend the service provider to other potential customers (Shaw, 2005b). The influence of the service employee is mentioned as one the primary ways of generating these feelings with customers. The results thus confirm this statement. Furthermore we see that the indicator *The service makes you feel comfortable* (Comfort) resulted in the lowest utility value (0.33). The low utility reflects the fact that respondents seem to interpret the indicator as being oriented towards the physical aspects of service provisions and that the 'Empathic Service Employee' offers less added value to this.

### 5.1.1.3. Self Determination

We included the concept of 'Self Determination' as a way of expressing the co-creative process of customers within the delivery of the service. We focused on service choice options as a way of influencing the service experience through a co-creative process. The 'Multi service choice' service provision offered three in-flight service options. Again we notice the consistency of the results. 'Multi service choice' led to the highest utility value across all the indicators and is then followed by single service choice. The 'Multi service choice' led to the highest utility for the indicator *The service surpasses your expectation* (Surpasses). As offering multi service choice options can be
seen as a somewhat novel approach to service provision (Interview Stakeholder, Leisure Class flight Provider, 2008) this is not surprising.

Secondly we note the utility value for the indicator *The service makes you feel comfortable* (Comfort). It is led to the highest utility for the experiential indicators of experience quality (0.35) and evidently leads us to state that 'Multi Service Choice' leads to the highest evaluation for the feeling of comfort.

A third interesting point is the difference in utility between single service options and multi service options. The largest difference in utility between single service options and multi service options was found for the indicator *You feel valued as a customer* (Valued) (0.25). According to these findings increasing the co-creative nature of the service provision thus seem to have the highest impact on customers feeling valued by their service provider.

### 5.1.1.4. Comparison across Experiential Design Components

It is also of value to look at the data across the entire set of Experiential Design Components. This gives us insights on how the results relate between the se different components.

Firstly we notice the lower utilities for the 'Physical Service Clues' as compared to those for 'Emotional Service Clues' and 'Self Determination'. The added value of the 'Physical Service Clues' to the total service experience is somewhat limited when compared to the value of the 'Emotional Service Clues' and 'Self Determination' design components. We found this to be consistent for all of the indicators in the study.

This is especially markable for the indicator *The service makes you feel comfortable* (Comfort), which is an indicator that is oriented towards measuring the added value of the physical elements of the service experience. The indicator yielded the highest utility with regards to 'Physical Service Clues' when compared with other indicators in the study. However we also see that higher utilities were found for both 'Emotional Service Clues' and 'Self Determination'. In fact 'Self Determination' resulted in the highest utility. According to these findings we can conclude that Co Creative activities and 'Emotional Service Clues' are more important to developing a perception of comfort than the 'Physical Service Clues'.

### 5.1.1.5. Comparison between common indicators of Service Quality

Furthermore it is of interest to note the difference in utility values across the common indicators of service quality. When we compare the results for the commodity service provision 'Public Display' we see that respondents are more critical in their evaluation when they were asked if the service surpassed their expectations. The same can be observed for the 'SMS service' and also across most of the levels under study (the exception being 'Single Service Choice'). These findings are in-line with the academic literature, which state that the indicator *The service surpasses your expectation* (Surpasses) leads to a more critical evaluation of a service provision than the indicator *You are satisfied about the service* (Satisfied).
5.1.1.6. Pearson’s R, Kendall’s tau and the non response

Table 6 includes the Standard deviation Error, Pearson’s R and Kendall tau. The Standard Deviation Error (Std. Error) indicates the degree of variability between the answers by respondents. The Standard Deviation Error for the data analysis was low; ranging between 0.02 and 0.06 overall and thus indicating a low variability between respondents. Respondents were relatively uniform in their ratings of the different levels in the study.

The Pearson’s R and Kendall’s tau are measures of Goodness-of-fit. They indicate the Degree of assurance or confidence to which the results of a sample survey or test can be relied upon for making dependable projections. The Kendall’s tau is a correlation coefficient which is based on rank of data. It is a measure for the correspondence of the results between the respondents. The closer the correlation is to either +1 or -1, the stronger the correlation can considered to be. The Pearson’s R is a measure for the correlation between the variables, the Levels of the Experiential Design Components (the sum of the utilities) and the Indicators of the Expected Experience Quality. The closer the correlation is to either +1 or -1, the stronger the correlation. If the correlation is positive, the two variables have a positive relationship.

According to Hair (2005) a goodness of fit level of .707 is required if one wants to be able to explain that at least 50% of the variation. As the Pearson’s R ratings and Kendall’s Tau ratings where near +1 for all indicators, we can thus conclude that the model provides a near perfect correlation between the levels and the indicators of Expected Experience Quality.

As this near perfect fit was found across the population (N=123) we don’t believe this to be an anomaly but that the relatively low number of stimuli (levels included in study) led to the higher values. This has been mentioned as a potential reason for high correlation values by Hair (2005).

Except for the indicator The service makes you feel assured. (Assured) the number of non-response is low. The non-response refers to the number of respondents that did not fill in all of the scenarios or answered the same value across all scenarios with regard to a particular indicator. We assume that the higher number of non response is due to the unfamiliarity with the concept of feeling assured about a service experience.

5.1.2. Averaged Importance Score

The Averaged Importance Score enables us to make comparative statements between the Experiential Design Components. It enables us to put weights on the value of the Experiential Design Components for each of the indicators. In turn these weights can be used to establish the ‘best’ service combination. This approach to the results can thus aid in the practical design of the ‘best’ service combination for an intended purpose or service experience. These weights are expressed in percentages and have been included next to the utility values in table 7.

We begin our analysis by looking at the indicator You feel valued as a customer (Valued). We see that the 'Emotional Service Clues' is the dominant factor in generating the feeling of being valued (53%). This is also evident but less prominent
for the indicators *The service makes you feel assured* (Assured), *You are satisfied about the service* (Satisfied) and *The service surpasses your expectation* (Surpasses). The analysis shows that 'Emotional Services Clues' and thus the behaviour of the service employee is paramount to creating the feeling of being valued, assured, satisfied and surpassing expectations.

However for the indicator *The service makes you feel comfortable* (Comfort) the results are significantly different. In this case component 'Self Determination' has the highest Averaged Importance Score (40%). According to these findings customers can be expected to have an increase in the feeling of comfort, when they are given the liberty to co-create in the service delivery process.

On a different note we see that the common indicators of Expected Experience Quality *You are satisfied about the service* (Satisfied) and *The service surpasses your expectation* (Surpasses) resulted in similar scores. The results differ one percentage point between the components 'Emotional Service Clues' and 'Self Determination'. This tells us that respondents evaluated and weighted the importance of the different experiential design equally in their consideration of the expected satisfaction and the expectation the service will surpass their expectation. This is in line with findings from the literature.

At this point it becomes interesting to discuss the added value of the weightings that can be performed by using the Averaged Importance Score. The Averaged Importance Score allows us to estimate the total utility for a given service provision combination. It can allow us to make predictive statements on the utility of service provision combinations.

For the purpose of illustration we will perform the calculation on the indicators which yielded very differentiated results; *You feel valued as a customer* (Valued) and *The service makes you feel comfortable* (Comfort). If we calculate the sum of the utilities by multiplying them by the Averaged Importance Score of the Experiential Design

<table>
<thead>
<tr>
<th>Expected Experience Quality in terms of Utility and Averaged Importance Score (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td>-----------------------------------------------</td>
</tr>
<tr>
<td><strong>Physical Service Clues</strong></td>
</tr>
<tr>
<td>No Public Display</td>
</tr>
<tr>
<td>Public Display</td>
</tr>
<tr>
<td>SMS Service</td>
</tr>
<tr>
<td><strong>Emotional Service Clues</strong></td>
</tr>
<tr>
<td>Non Empathic Employee</td>
</tr>
<tr>
<td>Highly Empathic Employee</td>
</tr>
<tr>
<td><strong>Self Determination</strong></td>
</tr>
<tr>
<td>No Service Choice</td>
</tr>
<tr>
<td>Single Service Choice</td>
</tr>
<tr>
<td>Multi Services Choice</td>
</tr>
</tbody>
</table>

Table 6 :: Expected Experience Quality in terms of Utility

At this point it becomes interesting to discuss the added value of the weightings that can be performed by using the Averaged Importance Score. The Averaged Importance Score allows us to estimate the total utility for a given service provision combination. It can allow us to make predictive statements on the utility of service provision combinations.

For the purpose of illustration we will perform the calculation on the indicators which yielded very differentiated results; *You feel valued as a customer* (Valued) and *The service makes you feel comfortable* (Comfort). If we calculate the sum of the utilities by multiplying them by the Averaged Importance Score of the Experiential Design.
Components we get the following findings for the service combination: Public display; Non Empathic Employee; Multi Service Choice.

Value; \((0.06 \times 0.20) + (-0.79 \times 0.53) + (0.31 \times 0.27) = -0.35\)  
Comfort; \((-0.08 \times 0.31) + (-0.33 \times 0.29) + (0.35 \times 0.40) = 0.02\)

This particular service combination results in a better performance for generating the feeling of comfort than for the feeling of being valued. This calculation thus provides us with insights on the total utility value for the different service combinations and allows us to state the added value to each service combination to the indicators. In this study the results are straight forward as the service combination SMS service; Empathatic Service Employee; Multi Service Choice leads to the maximum utilities for all of the indicators.

5.1.3. Summary of the primary Findings

As the results cover different topics and vantage points on the results we believe that it is useful to summarise the findings. In section 6.3 & 6.4 we expand into the implications for theory and the managerial implications of these results. The primary findings of the study have been summarised below:

1. The Experiential Design Component ‘Emotional Service Clues’ is about two times as important in generating the feeling of being valued, assured, satisfied and surpassing expectations as ‘Physical Service Clues’.

2. The Experiential Design Component ‘Self Determination’ (Co creative processes) contributes more strongly to the service experience than ‘Physical Service Clues’ for all the indicators included in the study, yet it contributes less than the Experiential Design Component ‘Emotional Service Clues’.

3. The Experiential Design Component ‘Self Determination’ (Co creative processes) contributes strongly to generating the feeling of comfort.

4. The common indicators of Experience Quality You are satisfied about the service and The service surpasses your expectation have nearly equal contributions to the generating service experiences from the Experiential Design Components ‘Physical Service Clues’, ‘Emotional Service Clues’ and ‘Self Determination’.

5. The common indicator The service surpasses your expectation leads to a more critical evaluation of the service combinations than the common indicator You are satisfied about the service.

6. The introduction of the novel service provision ‘SMS service’ within the Experiential Design Component ‘Physical Service Clues’ seems to have the greatest impact on generating the feeling of comfort. The commodity service provision ‘Public Display’ was taken as a reference point.
7. The inclusion of the service provision ‘Empathic service employee’ within the Experiential Design Component ‘Emotional Service Clues’ most greatly contributes to the feeling of being valued by the service provider.

8. The service provision ‘Multi Service Choice’ within the Experiential Design Component ‘Self Determination’ (Co creative processes) has the greatest impact on generating the feeling of comfort. This is then followed by the feeling of being valued. It is also interesting to note that the service provision ‘Multi Service Choice’ leads to a larger increase in the feeling of being valued than the feeling of comfort when we take the provision ‘Single Service Choice’ as a reference point.

9. The Experiential Design Component ‘Physical Service Clues’ resulted in the highest utility for the indicator The service makes you feel comfortable, when compared with other indicators in the study, for the same Service Design Component.

10. The Experiential Design Component ‘Physical Service Clues’ contributes strongly to generating the feeling of comfort. Yet this contribution is still lower than the contribution by the Experiential Design Components ‘Emotional Service Clues’ and ‘Self Determination’.

5.2. The Appropriateness of the approach as a way of designing and assessing experiential services

In this section we will discuss the results in relation to the two requirements presented at the beginning of the chapter. We will discuss each of the requirements separately.

5.2.1. Requirement I; Establish if it is possible to design various levels of experiential service design components

As the attributes of experiential services are less tangible and open to interpretation than attributes of products it is essential to establish that it is indeed possible to design various service provisions, which can be distinguished from each other by respondents.

The process described in the research design and the results presented in this chapter have shown that is possible to design various levels of experiential design components. The first requirement was thus met.

Firstly, we performed a workshop in the second round of refinement (See section 4.3) to ensure unambiguous interpretation of the service provisions and indicators of experience quality. This workshop showed that it indeed was possible to design various levels of Experiential Design Components, when these where chosen carefully.

Secondly, we notice the consistent results of the utilities (Table 6). They indicate that a subset of the Dutch population was able to make consistent differentiations
between the service provisions (levels) included in the study. We assume that this differentiation is only possible if the respondents could make clear and consistent differentiation between these levels.

5.2.2. Requirement II; Establish if these different levels impact the expected utility, which respondents perceive

The second requirement was also met. Respondents attributed different utilities to the different levels (service provisions). The conformity between respondents is also notable. The standard deviation of the results is relatively small. Respondents were thus mostly in agreement on the amount of utility to include for each of the service provisions.

Furthermore we notice the ranking of utility values of the levels. The lowest level within the Experiential Design Components always resulted in the lowest utility value. This was then followed by higher utilities for the commodity service provision and still higher utilities for the novel service provisions. These findings were found for all the indicators included in the study. This consistency shows that respondents where able to perceive the difference between the levels clearly and that were able to rank them accordingly.

In conclusion we state that we were able to establish that both requirements where met in this implementation of the approach. We have been able to ascertain different ways in which the requirements where met.

The consistency of the results is especially markable. Both in terms of the results across the different indicators of experience and also with regards to the levels (service provisions) included in the study. Respondents were consistently able to express their preference and feeling towards the service provisions included in the study. Consequently we were able to make valuable statements on the Experiential Design Components, indicators of experience and service combinations. These results give us confidence in the ability of this approach for the design and assessment of experiential service concepts.
6. Conclusion

In this chapter we will reflect on the thesis in terms of the results, process and implications for theory & management. We will likewise discuss the limitations of the study and make recommendations for further research. The chapter focuses on answering the primary research question;

What would be an approach towards designing and assessing experiential service concepts within the aviation industry?

The chapter consists out of the following sections:

- 6.1. Primary findings of the study
  We will briefly summarise the primary processes & findings from the study.

- 6.2. Limitations of the Approach
  We will discuss the limitations of the study with regard to the findings and the applicability of the approach.

- 6.3. Comparison with prominent approaches within the aviation industry
  The approach developed in the study is compared with two prominent approaches within the industry.

- 6.4. Implications for Theory
  We will discuss the implications of the results on the current theory.

- 6.5. Managerial Implications
  The results of this study have various managerial implications. We will look at the added value of the approach in relation to the current practice and understanding within the aviation industry.

- 6.6. Recommendations for further research
  We will present recommendations further research. Likewise we will make recommendations to improve the approach for future application.

- 6.7. Conclusive statements
  The thesis is concluded with some conclusive statements on the overall value of the developed approach in light of service experience design and assessment.
6.1. Primary findings of the study

The main objective of this study is to develop an approach towards designing and assessing experiential service concepts within the aviation industry. Experiential services are considered services where the focus is on the experience of the customer when interacting with the organisation, rather than on just the functional benefits derived from the products and services delivered.

We decided to base our approach on principles which reflect Kansei Engineering. Kansei Engineering is an engineering methodology originating from the industrial design field for new product development. It is based on the premise that emotions and feelings of human beings are based on external stimuli from the environment. Products thus evoke emotions and feelings in human beings. By carefully adjusting the attributes of products one can ascertain, how these attributes influence the feelings and emotions of (potential) consumers.

We believed that such an approach would be useful for gaining an understanding of the design and assessment of experiential design concepts because it would give us guidelines on how varying the attributes of a product (or in this case experiential services) could give insights on how they influence the customer experience.

In order to do this we needed to identify the attributes of experiential services. This was the primary focus of our literature review. We identified eight perspectives on experiential service design. These perspectives enabled us to identify commonly agreed attributes of experiential services. These attributes were later called Experiential Design Components and were condensed into an overview, as according to a model proposition by scholars on experiential service design.

We then continued our literature review by doing a concise study on indicators of Experience Quality. These indicators are semantic expressions should, which express a perceived experience of a service. We found different perspectives on this topic, which related to either product or interaction design. One study was found, which included semantic expressions for experiential service design. Our focus thus shifted this study. Examples of these semantic expressions were: feeling valued, satisfied and cared for.

It was our observation that the Experiential Design Components could be likened to the attributes of products as used within Kansei Engineering Type II and that the Indicators of the Expected Experience Quality could be used to measure the potential influence of these components on the feelings and emotions of (potential) customers.

We thus assumed a relationship between the relevant Experiential Design Components and indicators of the Expected Experience Quality found in our literature review.

To establish this relationship we developed a case of an experiential service within the aviation industry and measured the supposed influence of the Experiential Design Components on the indicators of Expected Experience Quality. The measurement was based on a conjoint analysis approach.

The case was developed by doing an explorative study with stakeholders from the aviation industry and findings from the literature review. The final case was developed through four rounds of refinement (iterative process) and was based on written scenarios of the intended service. Respondents were asked to give their
opinion on seven service provisions arranged across three experiential themes (Physical, Emotional and Co-creative). Service provisions included in the study were: SMS service, Public Display, (Non) Empathic Service employees and the inclusion of service choice options. These were set against five indicators of experience quality, expressing customer satisfaction, assurance, comfort, feeling valued and the service surpassing expectations. The study was conducted with 123 respondents from the general population.

**Important findings** from the study are that an approach, which is based on Conjoint Analysis and which mirrors Kansei Engineering Type II is indeed feasible for the design of experiential services. The approach led to clearly interpretable results and allowed one to establish the influence of service provisions on the expected customer experience.

Noteworthy findings include:

That providing an ‘SMS service’ has great impact on the feeling of comfort and the feeling of assurance as compared to commodity service provisions such as a public display.

The behaviour of the service employee is about twice as influential in generating the feeling of being valued, assured, satisfied or a service that surpasses expectations. This when compared with physical aspects of the service provision (such as SMS service).

Choice options contribute more strongly to the service experience than physical aspects of service provision.

On a different note we have been able to establish that the common indicator of service quality *The service surpasses your expectations* leads to a more critical evaluation of the service combinations than the common indicator *You are satisfied about the service*.

### 6.2. Limitations of the study

In this section we will discuss the limitations found for this study. We begin by restating the explorative nature of the study. This affected the selection of case and experimental setup of the study. We based the study on the case of a passenger at a transit airport and presented respondents with written and fictitious scenarios of a service. The findings might differ in an experiment setup at an actual airport environment with real services and very similar experiential design components. Furthermore we recognise that the case focused on a small area of service delivery within the aviation industry. This means that findings might not be transferable to other areas of the service experience or the service journey as a whole. The case includes interaction of the passenger with a service employee. The study has shown that the performance of the service employee is highly influential on the service experience. The results of the study are thus readily transferable to other common
service provisions, which do not include a service employee such as Self Service Kiosks or Online bookings services.

Lastly we would like to note that the study has been done with mostly Dutch respondents and stakeholders within the Netherlands. Most participants tend to take Schiphol Airport as their reference point. This could mean that the results might not be generalised for different countries or airport environments.

6.3. Comparison with prominent approaches within the aviation industry

In our explorative study with stakeholders from the industry we encountered two prominent approaches on the design and assessment of experiential services: Focus Groups and Field Trails. In this section we will give a concise description on these approaches and discuss the advantages of the approach presented in this study in relation to the prominent approaches. The description of these approaches is based on the work by Faber, de Vos et al. (2008).

6.3.1. Focus Groups

These are panels of consumers who are asked to answer questions and interact with other consumers on a concept or prototype. It requires a relatively clear focus, goal or theme for the meeting and a facilitator that is sensitive to the social dynamics of the participants. The end result of the focus group can be, new insights into the ideas, needs, perspectives and experiences of end users.

One key weakness of this approach is that the meeting can go off the core intended topic. Furthermore there is a risk that participants give answer that are reflective of the supposed collective opinion of the group instead of his or hers true opinion.

Advantages of the developed approach over Focus Groups

Firstly, we submit that within Conjoint based Kansei Engineering the service combination and indicators of experience quality have been preselected and pre-paved in a preset sequence by the researcher. The risk of over emphasising a topic or going of topic is thus eliminated or can be said to be in full control of the researcher.

Secondly, Because Conjoint Analysis based Kansei Engineering allows each respondent to answers privately or separately it reduces the limitations of Focus groups with regards to respondents given answers that may not reflect their true opinion.

As a third point, Conjoint based Kansei Engineering leads to quantifiable findings on the opinion of consumer. This is usually not the case with Focus groups. This reduces risk of ambiguous interpretation of the participating respondents.
6.3.2. Field Trials

Within this approach consumers use a prototype of a new service in their daily activities. The objective of this approach is to gain insight on how services perform in real-life situations. It leads to an understanding of how the service performs technologically and socially. This can then lead to recommendations to improve the service or an assessment of the market value of the service.

The weakness of this approach is that it can mostly be applied in the later stages of development. This can result in unexpected shortcomings or failings of the technology or service. When these shortcomings are indentified in the late stages of design, it could lead to high additional costs to rectify the problem. Conversely, the strength of this approach is that it gives insights on the way people use the service in a realistic and natural setting.

Advantages of the developed approach over Field Trials

Coinjont based Kansei Engineering can be performed in both the early and later stage of service design. The approach is versatile enough to allow for the scrutiny of a preliminary implementation of the service (i.e. written scenarios as is done within this study) as well as working prototypes or actual implementation of the services.

6.4. Implications for Theory

The study has led to implications of theories within different academic contexts. Firstly, it has enhanced the literature on Service Concept Development. Secondly, the study serves as a practical example of using Kansei Engineering for the design of services and thirdly it confirms or adds to the body of knowledge on Experiential Service Design in general. We will discuss each of these implications on theory below.

6.4.1. Implications for Service Concept Development

At the introduction of the thesis we presented a research question on the subject of service development. Noting that the usage of service concepts was underappreciated within current design of services processes, Goldstein and Johnston et al. (2002) posed the question: If a service concept is a key element in service design planning, then how can it be used to assess services? During the thesis we sought to give answer or at least some perspectives on this question.

In this study we have been able to show how an approach can be developed, which can be used to design and assess a service concepts in preliminary stages of development. The approach where one utilises a mirror implementation of Kansei Engineering Type II and Conjoint Analysis as a statistical method can thus be seen as a valid way using a service concept for the assessment of the potential experiential value of service. This is a valuable addition to this important area of study within the service innovation literature. The approach and results enhances the understanding.
of concept design and development and enables the academic field to develop alternative ways to assess service concepts.

6.4.2. Implications for Kansei Engineering

The material presented in this study also adds to the body of knowledge on Kansei Engineering and Kansei Engineering Type II in particular. The design of (experiential) services has received scant attention within this design field. Within this study we have shown:

- That a mirror implementation of Kansei Engineering Type II is feasible for the design of experiential services.
- That an approach, which utilises an attribute approach much as done within product design can effectively be used for assessing the emotional value, as is done within Kansei Engineering.

Scholars such as Dahlaard and Schutte (2008), have incidentally mentioned the potential of Kansei Engineering for the design of services but have neglected to portray any academic examples of this possibility. This study thus serves as an example of effective utilisation of the Kansei Engineering principle for service design.

6.4.2. Implications for theory on Experiential Services Design

The study contributes to the work by Lally and Fynes (2006, 2008). It utilises their Conceptual Model of Service Concept Components (section 3.1.7) as a core component for the selection of valuable experiential design components for the design of a fictitious service concept based on a case within the aviation industry. The developed approach shows that their model proposition can be used effectively for the design of an experiential service concept and that subsequently their model can serve as a framework for Experiential Design Components. These can then be utilised for the effective measurement of the influence of these specific components on the expected experience of the service.

The study also contributes to the work by Berry, Carbone and Haackel (2002, 2007). We extracted two forms of experiential design components from their theory: Emotional and Physical Service Clues. Through the development of this approach we have been able to establish that these design components, indeed as proclaimed by them, influence Experience Quality. Our study thus aids in confirming their perspective on the design of experiential services as presented by them.

6.5. Managerial Implications

We will discuss the managerial implications of the study from two perspectives. To begin with we will discuss the managerial implications with regards to the approach
developed in the study. This is then followed by a discussion on how the results of the case have practical application to managers.

From a methodological stance, the developed approach has the following implications for management. Our comparison with other tools within the industry (section 6.2) has illustrated how the approach can allow for the assessment of service concepts in the preliminary phases of design. The study has shown that the design of services can be done in a more explicit manner than is currently commonly done within the industry. It also evident that the approach allows for the distinctive identification of design components and the evaluation thereof in terms of utility, which surpasses the current trend of thought. Also the fact that the approach can be used for predictive purposes supports this fact.

From a practical point of view the study has the following implications. Firstly, our explorative study had shown that different stakeholders within the industry presumed that the service provision SMS service would lead to a greater feeling of assurance. However the factor of increased passenger comfort was not mentioned as a primary reason for introducing such a service provision. The results thus show that the inclusion of an SMS Service primarily leads to an increase in the expected travel comfort and secondly to an increase in travel assurance. If the findings of the study can be considered to be more generally valid then we submit that the inclusion of SMS services can prove to be a worthy investment for those seeking to increase customer comfort and assurance levels. Secondly, the explorative study showed that stakeholders were in disagreement about the added value of choice options. It was either perceived as a potential increase in travel comfort or a nuisance because of excessive service provisions. Opponents to multi-service provisions stated that customers tend to look for pre-paved experiences and don’t want to be burdened with choice. Our findings leads us to conclude that including multi-service has a positive effect on the expected service comfort and thus that the current trend of multi-service choice provisions is a valid one.

6.6. Recommendations for further research

On the basis of the process undertaken during the thesis and overall findings from the study we would like to make the following recommendation. The study was based on written scenarios of a service concept. We believe that reliable results can be achieved by utilising the approach developed here, in an experimental setup which closer matches to the real life situation. Alternative approaches such as using picture scenarios or a lab setting with real interaction between the service provisions and respondents would give an even closer depiction of the actual experience value being perceived.
6.7. Conclusive Statements

The results of the study are promising. The study was based on a rudimental yet robust approach towards the design and assessment of experiential services. (A case on a fictitious experiential service within the aviation industry). The approach led to clearly interpretable results and allowed us to establish the influence of service provisions on the expected customer experience. Some these results are in line with findings from the current literature on service innovation and service experience design. In our opinion the findings from the study have shown that:

a) A design engineering approach from the Industrial Design field can be taken as a reference for the design of approaches for experiential services. The process of mirroring Kansei Engineering Type II proved to be an effective methodology for the design of an approach for the design and assessment of experiential services.

b) That it is indeed possible to utilise conjoint analysis for the purpose of statistical analysis of customer experience with regard to experiential services.

c) That is possible to use service concepts for the design and assessment of the potential experience value of a prospective service in early stages of design.

We believe that this study a excellent stepping stone for those that want perform research on the design of service experiences from a quantitative perspective. The approach presented here has given clear guidelines on how this can be done and on how the results of such can approach can have implications for both theory and management.

As a final statement we would like to share the guide that was developed for the design and assessment of experiential services. The guide was developed as a deliverable for the internship company TNO ICT and can be found in the Appendix. The development of the guide and the thesis as a whole has been a positive experience and would like to thank all participated in this learning endeavour.
References


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Tidd J, Hull F.M (2003), Service Innovation: Organisational responses to technological opportunities & market imperatives. Imperial College Press, London, UK


APPENDIX – Case Development

OrthoPlan

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<tr>
<th>Card ID</th>
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<th>Emotional Service Clues</th>
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**Text Description per level**

**PSC_High**

*Service indicatie ::* Terwijl u de wachtruimte binnenloopt ontvangt u een sms-je van uw vliegmaatschappij. Het bericht maakt u erop attent dat uw verbindingsvlucht over 2 uur vertrekt en dat u er minstens 30 minuten over doet om naar uw uitgang te wandelen.

**PSC_Medium**

*Service indicatie ::* Bij binnenkomst in de wachtruimte zoekt u op de beeldschermen voor de vertrektdj van uw verbindingsvlucht. U ziet dat uw vlucht over 2 uur vertrekt.

**PSC_Low**

*Service indicatie ::* U hoort dat uw vlucht over 2 uur vertrekt.

**ESC_Low**

*Gedrag ::* De stewardess is druk in gesprek met haar collega en kijkt u na een poosje vragend.

*Gedrag ::* Ze knikt en vervolgt haar gesprek.

**ESC_High**

*Gedrag ::* De stewardess begroet u vriendelijk en vraagt hoe u uw vlucht ervaren heeft. U antwoordt dat het een fijne maar toch lange vlucht is geweest. “Ja, soms kunnen die vluchten lang en vermoeiend zijn”, zegt ze meelevend. Vervolgens vraagt ze “Wat kan ik voor u doen?”

*Gedrag ::* De stewardess vraagt of u nog vragen heeft en met een vriendelijke glimlach wenst zij u een plezierige reis.
Keuze opties :: Ze kijkt op haar scherm, en zegt dat alle zitplaatsen al voor de vlucht ingedeeld zijn en er geen wijziging meer mogelijk is. U bedankt de stewardess.

Keuze opties :: De stewardess toont u op haar computerscherm een beeld van het interieur van het vliegtuig. “Kiest u zelf maar een zitplaats uit”, zegt ze. U kiest een zitplaats bij het raam.

Keuze opties :: De stewardess toont u op haar computerscherm een beeld van het interieur van het vliegtuig. “Kiest u zelf maar een zitplaats uit”, zegt ze. U kiest een zitplaats bij het raam. Daarna toont ze u ook een menu met verschillende maaltijden en films waaruit u kunt kiezen.

APPENDIX – Explorative Study

Typology of the industry

The different participants were chosen on the basis of their availability, prominence within the industry and differing role in providing customer experiences. A total number of seven participants were interviewed. Each from one of the different actors we identified in our scan of the industry in the Netherlands.

![Figure 15: Typology of Actors](image)
Based on preliminary interviews with consultants within the aviation industry a clear distinction between two types of airports was found. Mainly Transit airports and Originating / Destinating Airports. The first are (usually) large scale airports with primary function of providing services for passengers that are on transit flight to their final destination. The latter are airports that mainly provide services for travellers that are departing their flight or concluding their flight. These airports tend to be of smaller scale. In this research we approached a representative of one airport in both type of categories.

**Large Scale Transit Hub Airport** A large scale international airport with over 20 million passengers a year. A floor Manager with close oversight on transit passenger service delivery was interviewed. (Appendix – Respondent F)

**Originating/Destination Airport** Small scale airport with 2 million passengers a year with a primary focus on low cost and leisure class flight providers. The general manager was interviewed for our purposes here. (Appendix – Respondent G)

**Leisure Class Flight Provider** Leisure Class Flight provider with Dutch home base. This flight provider has a specific focus providing flights for the (direct flight) vacation oriented passengers. The in-flight services product specialist was interviewed in this case. (Appendix – Respondent D)

**High Class Flight Provider** High Class Flight provider with Dutch home base. The company focuses on business and leisure class passengers and uses the Large Scale Transit Airport as its primary hub for flight transfers. We interviewed the strategic innovation director. (Appendix Respondent – B)

**Large Scale Ground Services Operator** This operator provides many of the ground services for flight providers at the large scale airport. We spoke with the service delivery duty manager. (Appendix Respondent – A)

**Consultancy Firm for the Aviation Industry** This ICT consultancy firm provides research, consultancy and tooling for airports and flight providers. The account manager for the aviation industry was interviewed. (Appendix – Respondent E)

**Academic Research Institute with focus on the aviation industry** A technical university in the Netherlands, which has a number of research sections devoted to the aviation industry. We spoke to the managing director of the central body for research within the aviation industry. (Appendix - Respondent C)
Semi-Structured Interview – Aviation Managers

- Have introduction Presentation

1. Please state your name:

2. Please state your age:

3. Please state your current function:

4. Please describe your primary responsibilities:

5. Please state the number of years in current function:

PART 1

Main research question: Can service innovation and operations managers recognise the added value of the experiential issues at hand? Do they recognise these issues within their own service offerings? Are these components relevant within the context of the aviation industry?

6. How would you describe your company’s overall approach to customer experience management? Are there any significant investments aimed at the understanding or improving the customer experience?

7. Can you mention examples where the service experience has led to the success of the service? Likewise, have you encountered situations where the failure of a service laid primarily in inadequate incorporation or lack of focus on the customer experience?

8. Let’s elaborate on the following statement: “Including the design of the customer experience is of crucial importance within the aviation industry”

9. How would you define the organisation’s need to focus on the customer experience? [moderate, somewhat urgent, urgent] Why?

10. Is it in your judgement of any value to focus on the following service aspects? Please elaborate.

   - The role of the Fellow customer in the service delivery process
     (Example; The children of a family, Parents customer but child gets a small toy/gift)
     * Vraag ook over communities of groeps voorzieningen

   - The role of self determination of the service experience by the customer
(Example; The choice between a window seat or aisle seat)

- Of understanding the customer Journey as whole
  (Example; The process from arriving at airport/to stepping out of train to boarding plane)

- Having an organisation wide customer experience statement just as we do with a company vision and mission.
  (Example; We willen dat onze passagiers genieten van een comfortabe aanloop op de reis. Wij doen dit door kordaat, vriendelijk en dienst te verlenen. De passagier verlaat ons met een welbehagen gevoel)

11. Let’s elaborate on the following statement: “It is easy to assess the experience of services.” (Als ja, hoe dan?)

12. Are you service experiences largely dependent on other actors?

**PART 2**

How do service innovation and operations managers evaluate the tool. Is this approach applicable to their design and operations environment? Would they adopt such a framework for their own activities?

- Present scenario’s

13. Are the differences between the scenarios clear to you?

14. Do the scenarios depict a realistic service offering according to you?

15. Is a scenario approach being used by your organisation currently?

16. How are your services developed currently?

17. According to you what would be the value of such as a tool?

18. In your opinion, how would it influence your awareness of the needs of your customers?

19. Are there any similar tools in place right now?

20. How would you apply such a tool in your operations?

21. Are there any words you would consider adding to the list of Kansei Words?
Respondent A – Landside Service Provider

Function
Service Delivery Duty Manager Aviation Support

Years in current function
2 years in current function

Recap general Impression of the meeting

Meeting went quite well. The respondent gave answers, which provided a birds eye of on how the company deals with delivering high quality service delivery. The meeting gave a good depiction on how the company relates to flight providers and airport operators. The interview provides a good feeding for contrasting the detailed experience specific responses by other respondents with the holistic and quantitative approach by this respondent.

Part 1

Can service innovation and operations managers recognise the added value of the experiential issues at hand? Do they recognise these issues within their own service offerings? Are these components relevant within the context of the aviation industry?

- Schiphol is carrying less passenger but more spread out. Having a high season that starts around spring and ends in October whereas it used to be July and august where to only busy months. People start going on holidays earlier

- Example of lessened service experience. Transavia check-in moved from hall 1 to hall 3. This has reduced the flow of passengers considerably. Passengers where standing in rows that led all the way to the outside door. As soon passengers arrived at Schiphol their positive experience died down. If we don’t manage the process with floor managers and backlining the whole check in process would breakdown.

- In many cases this type of situation doesn’t have to increase the total waiting time but non the less it has a dramatic effect on the experience and perception of the customer of Schiphol.

- As Schiphol introduced a separate gate area for low cost carrier, the H pier. The costs for operating are a little bit lower there. The company has decided to apply the same structure to their organisation. We provide a more simple product, less sophisticated material, but we ensure that the service quality is equal to the other business units (i.e. Line Flights)
Schiphol wanted to move to self check-in structure by 2010 but because of 9/11 this planning has encountered some setbacks. This approach should reduce the waiting time of the passenger considerably and thus reduce the travelling stress of passengers. Schiphol wants to increase the available space around the current check in area by introducing various technologies. Schiphol wants to facilitate the passenger digitally from the point that it enters the airport till the door of the airplane. They want to improve the entire flow of passengers at the airport.

Cost saving approaches are helpful for our company, however our clients will notice this and will also want to see this cost reduction in the delivery price. The ambition of the company is not to reduce its personnel through the use of the upcoming technology but to shift its focus of its services to allow for increased service performance that goes further than the functional task of service delivery.

The company has a very strict selection procedure for the hiring of personnel. This is primarily because of the high service quality expectations of the company’s clients. Our employees operate in the uniform of our clients, so we don’t make compromises on being able to deliver high quality services. We are ISO certified. We also select our personnel on the basis of how they communicate with customers.

For all processes we have basic courses. Together with recruitment agencies we do a strict selection of personnel. However this getting more complicated as the employee market place is under tremendous pressure. It’s getting increasingly more difficult to find qualified personnel. Recruitment agencies consistently fail to attain the number of qualified personnel requested.

Our employees where the uniforms of our clients. Its way of delivering some extra services to our clients and in the long run loyalty. We find it very important that our product is perceived as their product (by the clients).

In certain cases we are prepared to co-invest in service delivery or improvement with Schiphol or other clients. One example, we helped on aviation company to setup an internet based self service check in. The company is thus also capable of delivering software for its client base. In another example one division of the company has developed pillars that facilitates the process of lost and found baggage handling. These are examples of how the company develops technology to increase service capability and cover broader spectrum of service delivery for the clients.

This approach follows along the lines of Schiphol increase its digitalisation of the flight process, where customers can for instance check in at home.

We have strict guidelines on service quality (service level agreements), which we check monthly with all of our clients. Even for low cost carriers its is very
important to maintain the basic experience needs such as; short waiting times, departing on time etc.

- With each of clients with have set service level agreements i.e. how many service desk, type of service desk, max. amount of waiting time. We have arrangements with our clients that we will incur fines, if we do not live up to the specified service level agreements. We are very successful at living up to those standards and thus a positive customer experience.

- “On time performance” is one of the most important aspects. It is one of those aspects that translates one to one on how the customer feels. i.e. a delayed flight has direct implications on someone vacation.

- We are considering installing “lost and found” self service pillars. This would be way of greatly increasing the service level for passengers as among things it reduces waiting times and allows the passenger to handle the complaint in its mother language. The justification for such investment always needs to be done however. Many times it's a challenge to do so.

- Such pillars could aid in the positive customer experience, as their waiting time is received. Although they might not arrive at our office happy because of their luggage loss, there is potential upswing in that they can leave happy if we help them well. These pillars could aid us in this.

- The industry’s need to focus on the customer experience is; Urgent. Although one has to add that is not only from an experience but also from a cost reduction necessity. The introduction of more self-service systems will allow cost reduction while improving the customer experience. If a potential customer experience enhancing product is developed, without it leading to equal or cost reduction it will probably not be implemented.

- The industry is under some pressure, because of increasing kerosene prices and the eco tax.

- We also have to keep in mind, which type of customer we have in front of us. Customers from Asian countries for instance have very different experience needs than European customers. If for instance you say that there is no extra seat left for a flight, you will have to double check this in the computer system when dealing with Asians.

- The company focuses on the Fellow Customer, in the sense that it tries to ensure a proper spread of passengers in waiting lines etc, to increase the processing speed of passenger and to increase the comfort of passengers. Most of the scope of focus on the fellow customer is outside the scope of the company. Most of these aspects are facilitated by Schiphol, through its shopping mall, museums etc.
We deliver software to various clients, which enable them to provide customers with more self-determination activities.

Although the company doesn’t have ‘customer experience statement’ from the customer experience point of view it does have a similar statement for its clients. “De juiste afhandeling for the juiste prijs” – “The right delivery for the right price”. Although we don’t focus on such a statement primarily, we do maintain standards that express this in for ISO standards and the service level agreements.

It is not complicated to asses the experience of our services. At all our gate procedures there is representative of our client present, which oversees our work. If we don’t fulfil the required service level agreement, we hear this pretty soon from this representative.

Respondent B – High Class Flight Provider Company

Function
Director Strategic Innovation

Years in current function
Since February 2008
3.5 years in E business world
20 years at the company

Responsible for
Looking at future differentiators for the company, by taking the customer as the primary point of view. Ensuring that what is developed not only fulfils the needs form a customer point of view but that is also commercially justifiable.

General Impression of the Meeting
The respondent is very knowledgeable on the subject. He has a clear point of view and knows how to present this well. Although the conversation lasted exactly an hour, it gave me many of the inputs needed. Potentially the material covered can be used a starting point for further analysis of the interviews.

Part 1

Can service innovation and operations managers recognise the added value of the experiential issues at hand? Do they recognise these issues within their own service offerings? Are these components relevant within the context of the aviation industry?

- Historically aviation industry has looked at service delivery elements (being a ticket, boarding an airplane, check in etc.). However now the company is looking at new ways of differentiation through focusing on the customer experience.
Instead of looking at only 1) How can we best create the possibility for people to buy us 2) How can we best facilitate the service delivery elements, it is now the strive to redesign the customer experience by looking at the entire chain of process, the passenger from bed back to the door. It’s a literal turn out how things were done before.

- The majority of our customer are familiar with flying and thus not fly for the purpose of flying. Our key customer segments are seeking to have fun, enjoyment, wanting to understand a culture, wanting the experience of visiting a special location or for business reasons.

- We are looking at; Why are these people going? And how can we fulfil this entire process. This is a very different way of looking than solely looking at the service components (an approach that has always been present in the company). How can we help customers achieve their end objective, where travel only becomes part of it.

- In the past the customer use to need to arrange everything by themselves through multiple suppliers (trains, tourism company, hotel, rental car, shows, they might want to see). In the past we where more physically restricted in what we could offer our customers. Now there is an opportunity to capitalise on that for two reasons; 1) The customers need has always been there. There is an unfulfilled need 2) New technology always these multiple suppliers to fulfil a bigger and different value chain become possible.

- One example fulfilling this need is by being able to provide information on the destination location, booking possibilities for cars and hotels. Instead of delivering only the flight we are currently able to cover a broader spectrum through our websites.

- Another example of successful implementation of focusing on customer experience is through a social community network, which they have been installed for various destinations. Primarily these have been placed for business travellers, but is also used for other activities. Customers provide each other information on destination and even make arrangement to meet each other at those destinations. Members include both travellers and residents of the destination.

- This way of focusing on the customer experience is not only an investment but is also a financially rewarding for us. But it goes further because for example the social community network isn’t directly financially rewarding but it allows us the opportunity to allow people that are much more knowledgeable on the interests of our customers to interact.

- In essence we are moving from an airline value chain to a customer value chain.
In the respondents point of view, you can’t just focus on just any one part of the customer experience. The danger then becomes that someone else in the value chain will take over the strength of the relationship, which will lead that your brand will just become one of the suppliers or one of the components in the customer journey. There is an opportunity to get to know the customer much better. He assumes one wants to have a leading role. One can only have this if one focuses on the entire chain of processes, the risk of someone else in the chain process taking over your spot is too great. You have to focus on the entire service journey.

The need to focus on the customer experience is urgent. Not from a pressure point of view but from an opportunity point of view. It’s an opportunity to add much more value to the customer than that we have been able to do.

We need to focus on the entire service journey if we want to ensure the we remain a leader in the industry and to ensure that others in the channel don’t take over our position.

The focus on the fellow customer is a key element in their service experience concept. The community network is a clear example of this. Social marketing has been in existence for 100’s of years, it is only now been capitalised on by companies. It’s a way of fulfilling a fundamental basic need. Creating a platform for interaction with fellow customers. Next to the destination community network, we also have a sport oriented community (golf), since we know that many of our customers enjoy this sport. We see tremendous value in developing a platform where our customers can interact.

His view on self determination. People will decide at the end of the day. The question always is can you give them enough choices and also can you afford to give people these different choices. Different choices means an impact on your costs. For instance people can choose their seats or lets us decide form them. It is their choice. Customers are willing to do a lot themselves, it increases transparency in the service for them, while it reduces costs for the company. The feasibility in creating self determination possibilities is thus high for the company as for the customer.

The company is currently working on a customer experience statement and is coming out with it. We want to fulfil the entire customer journey and create experience concerning the entire journey. The exact content of statement cannot be disclosed at the moment.

Net Promoter Score is one way of assessing the value service experiences. The question “Are customers willing to promote us to other”, we are considering more and more as proper way of measuring the experience of the customer.
There is a big difference in what customers say and what they do. 95% of what we could possibly be subconsciously. So what makes of us feel subconsciously is not clear enough. There aren’t enough methodologies yet to measure “what this experience actually is”.

Other ways are also interesting. The respondent takes an example form another company, who sits in with customers, sometimes for days on end, to get and indication of how the service experience adds value to their customers.

- People are mostly interested in what is done once a service breakdown. How is the service recovery. Was the company willing to go out of its way to ensure proper of the service. This creates a “wow” effect, which people talk about again and again, in a positive sense and remember.

- A gift is pretty soon forgotten. Some might even be angry with you because you gave them something, which they will throw away anyway and pollute the world. The company has tried this approach but stopped because it was simply not a successful approach. People forget about it pretty quickly.

**PART 2**

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<th>How do service innovation and operations managers evaluate the tool. Is this approach applicable to their design and operations environment? Would they adopt such a framework for their own activities?</th>
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<td>The scenario’s are headed in the right direction. You could try discussing this with our Customer research unit. They should be able to aid you much better.</td>
</tr>
<tr>
<td>Currently they implement pilots on small specific areas of the service delivery and test them in this manner.</td>
</tr>
<tr>
<td>Although services are analysed and continuously improved, the question always remains if a particular “pain point” should be alleviated, since the question always is if it improves revenue, the bottom line.</td>
</tr>
<tr>
<td>There are many creative people and many solutions. If you see something that should be there but isn’t then it is probably because it was not profitable to do so.</td>
</tr>
<tr>
<td>The kansei words taken are familiar to him and according to him are the right chosen ones. These words are used by our Customer research unit.</td>
</tr>
<tr>
<td>The Customer research unit has similar tools in place. Please contact them via your own company to find out more about this. They should be able to help you further.</td>
</tr>
</tbody>
</table>
PART 1

Can service innovation and operations managers recognise the added value of the experiential issues at hand? Do they recognise these issues within their own service offerings? Are these components relevant within the context of the aviation industry?

- I can only make limited statements on how the industry is with regards to investing into the customer experience. However the industry seems to camp with some miscommunication channels. Examples are given from Philips and the detergent Omo where miscommunication has led to a product flop or where information is provided but not used to improve the problems or situations at hand.

- The industry tends to have some communication channel problems. There is a lot of knowledge and lot of will, but somehow the aviation industry hasn’t always been so able to translate these into innovation successes.

- Schiphol is busy with both aspect in a very explicit manner. Increasing efficiency and increasing the customer experience. A new innovation study is commencing shortly called “believing van de gate” about the experience at the gate. The want to improve the efficiency of the processes at the gate and also the experience at the gate; that if you have to wait, it is experienced in a more positive manner than it is today. This is a double goal if this project.

- The aim of the project of the project is to come up with a concrete design of services that delivers a) increasing efficiency, reducing waiting time, minimal intervention by personnel b) decrease space usage, because more space usage means higher costs c) the customer experience to improve the competitive stance in relation to other airports.
Some of the biggest pain points at the airport are the waiting lines, people feel being treated as cattle. Long waiting lines, your number is being called to board the plane etc.

The situation is Urgent. Because of various reasons the industry in the Netherlands and especially Schiphol need to focus on the customer experience. Also factors such as the Eco Tax play an important role.

There also projects within SIM that focus on the customer journey from home, till the entrance door at Schiphol. What type of transportation is adequate for this process? What information does the passenger need in this process? But also for the Frontports concept, how does one inricht it.

If they don’t have something like a “customer experience statement” they will have one in the near future.

PART 2

How do service innovation and operations managers evaluate the tool. Is this approach applicable to their design and operations environment? Would they adopt such a framework for their own activities?

The first thing what I would want to know when I, what are the factors that lead to the service experience. This would be of interest for both a KLM and a Schiphol.

Kansei words “Happy” and “Please” seem much alike.

“Trusted” is difficult to imagine what is meant by in relation with cared for and please.

“Safe” is a very good one.

“Focused on flying experience” is also a very nice one to take into account.

Negative connation words such as “irritated” are missing

You could think of adding an open question at the end of the scenario, so people can include their opinion on the scenario, with regards to their expected experience quality. Especially negative experience could be described this way.

KLM does customer satisfaction analysis so those Schiphol, but the probability is very low that their using conjoint based or like analysis to conduct customer research.
Differences between scenario’s are very clear. Nice way of approaching the project.

**Respondent D – Leisure/Midd Class Flight Provider**

**Function**
Product Specialist – Marketing E commerce Department

**Responsible for**
For the selection of free products on board flights; warm and cold meals, entertainment. Likewise the paid products contained in our duty free catalogues and all processes that come along with developing this.
In addition also responsible for overseeing the customer satisfaction research, which covers all aspects of the company’s products; from the booking processes to the product on board and the after sales.

**Years in current function**
2 years, work package has grown significantly during those two years.

**General Impression of the Meeting**
Very insightful meeting, that has given good contrast with interview from other Flight Providers. The meeting was very focused to the topic and gave excellent insights on the company’s view on customer experience management.

**PART 1**

Can service innovation and operations managers recognise the added value of the experiential issues at hand? Do they recognise these issues within their own service offerings? Are these components relevant within the context of the aviation industry?

- The focus on customer experience is very important topic for us at the moment. We are coming out with a “Your Choice” campaign, in a couple of weeks. In this we want to provide our customers with as many choice options online on our website, to onboard the airplane.
  It’s a trend that is very visible at the moment; more choice, especially in Europe. We are adding such aspects so as pre-selection of meals, choice of entertainment centre during flight and others through the internet. It’s comparable to the VodaPhone Blocks philosophy. We could even add aspects like travelling facilities to the airport.
  The challenge remains on developing this capability in the backoffice, but gradually we are moving in this direction.
• When compared with some of competitors, we still have some ways to go, with regards to offering choice. But for instance our “comfort class” is more elaborate than some of the upgrade (from economy class) of some of the other competitors. It is one thing to have these customer experience oriented products available but it’s a challenge in itself on how to market this positive experience aspects to the customer.

• An attempt to improve the customer experience failed; the introduction of an open bar, with juice or water, in the aisle of the cabin, when in flight. Passengers where free to get drinks etc from the bar. Success was limited, the improvement was very limited according to our survey, so we decided to stop this service. So we improved this, by providing each of our passengers with a bottle of water in the seat in front of them. This has been a great success, and was scored highly in our customer satisfaction survey.

• It is important to focus on the designing the customer experience. Customers/passengers are getting more *verwend*. The expectation level of the customer is increasing. The price of products go down, while the customer still expect to receive the same service level. Industry wide prices have come down so the difference between prices of a Top Class and Low cast carrier has been significantly reduced. The primary to differentiate has become through the delivery of the product, which is thus service and thus the customer experience. Price has become less of a factor.

• The situation is thus urgent. Aspects that increased the pressure include;
  a. More flight carriers flying to similar destination
  b. Increase of inflation, which leads to increased procurement cost.
  c. The high service expectation by the customer despite falling prices
This all means that our creativity has to increase in what we can deliver for the price that customers are willing to pay. There is a price ceiling to what can be done, which everyone in the industry faces. However we try not only to maintain the level of service but increase it if possible.

• Travelling agencies also need to be informed about our new approach towards service delivery. A large portion of our tickets sales is still through these agencies. We also have to take into account that their systems will also not be setup to handle the processes as we intend to introduce them in the future.

• The increased focus on customer experience through choice has a number of benefits for the company as well. It will lead to weight reduction on airplanes, as only for instance specified meals need to included on flight.

• We regard the focus on fellow customers very important. An example; Captivate audience, reaching the parents through the children: For years we have made sure to deliver a very child friendly product. Ensuring that the
children are satisfied as given us a significant competitive advantage. We have had alliances with large “kids patterns”. We have even had an airplane that was completely covered with emblems of this alliance partner. This is probably our best example of focus on the fellow customer.

- Offering more Self Determination is thus our chosen path for success in the future. It's one of primary focus points for the future.

- Our new slogan “Your Choice” is squarely focused on the customer experience. In this sense a customer experience statement. It is possible that the company has written customer experience statement, but it's best to look that up in the annual report.

- Because we are a leisure travel flight provider, our products always have to be fun and delightful. However these are not aims that have been “etched into stone” more like soft statements.

- Every quarter we do a general survey on our service delivery, which is adapted for our specific needs at that time. For the measurement of the experience we tend to have a more ad hoc approach. It stems more out the questions that we might have at that time. We could do that qualitatively with panels or otherwise. Our material for the survey are based on brainstorm, industry oriented magazines etc.

- A qualitative approach is probably better for assessing the experience of customers and the latent needs. A quantitative approach greatly increases the probability that you miss out on important information, since you are limited to your own conception for formulation the quantitative oriented measures and questions.

- These processes are initiated separately from the quarterly survey, which measures the existing product. The process described above is used for the development of new services.

- We have number of static factors which we measure, such as was the meal to your likeness? Are there any shortcomings? Based on their experience of the flight, would they choose to fly with us again. We also ask similar question about our upgrade product. Would you choose to buy this upgrade product again?

- Yes we are greatly dependent on other actors for the success of our customer experience. In some case this brings us in less favourable situations; for instance in some countries there is only one company that delivers airplane meals. This gives them a monopoly position, which of course is not favourable to us. We prefer to have choice in the actors we need to work with.

-87-
Some flight providers have gone outside their value chain/service journey by stepping to other markets, like cheap energy. Apparently this has a positive effect.

PART 2

How do service innovation and operations managers evaluate the tool. Is this approach applicable to their design and operations environment? Would they adopt such a framework for their own activities?

- The scenario’s are very clear. The first one presents a very pro-active behaviour and the other a more wait and see stance in service delivery.

- The scenario’s presented are very realistic. SMS service is being delivered by Schiphol right now. The handheld device is possible if the network is available at the airport. Giving Coupon is a complicated one, since other customers might see that someone else gets one, but they don’t.

- Such a tool would be of value for us. However a reference point is needed in order to employ the tool successfully better. The service is concept is better or worse than what (other service)? Also what are the differences between services and also we will need to know the risks involved if we choose to of implementing the service.

- As far the respondent knows there aren’t any tools like this in place right now. Sometimes panels are used to assess the opinion of customers.

Respondent E – Consultancy for the Aviation Industry

Function
Account Manager

Years in current function
1.5 years in current function
3 years at the department

Part 1

Can service innovation and operations managers recognise the added value of the experiential issues at hand? Do they recognise these issues within their own service offerings? Are these components relevant within the context of the aviation industry?
The focus on customer experience varies greatly per company; KLM focus on punctuality and utilises CRM to find ways so they can be more productive in the way they manage their customers. RyanAir also focus on customer experience. Many airlines try to develop their image around the customer experience.

A positive example of customer experience, is the capability of some airlines to be able to change flight booking while the passenger is still in the air. Instead of being passive, flight providers can be pro-active in handling situation such as delays and they also make sure that all solutions are tailored to the individual.

The need to focus on the customer experience is urgent. This is because of factors such as the tax increase and the reduction of revenue per passenger. The main driver of the reorganisation of many of these companies is the high level of competition and the need to increase efficiency.

Fellow Customers. Focus on the fellow customer is useful. It can increase productivity. For instance business travellers that sit together in a plane and exchange information. Or simple example the “meeting point” at many airports facilitate fellow customers in their need of finding each other.

Customer experience statements are present alike; Experience the airport as a day out. From a flight provider; A great way to fly

It is possible to measure the customer experience but how does one go about this? Does one take into account the amount of time people have when being interviewed. For instance leisure travellers tend to have more time available than business travellers. It is quite possible that business travellers aren’t interviewed enough at all, which means that their latent needs might not even addressed.

**Respondent F – Manager Large Scale Transit Airport**

**Function**
Duty Flow Manager

**Years in current function**
Minimum 8 years experience working at airports
3 years in current function

**Responsible for**
Prime responsible for the logistical management of passenger flow at the airport. From the point that the passengers passes the entrance door till the point of boarding the plane.

**General Impression of the Meeting**
Very interesting meeting. With specific and to the point information on the operation of the airport and the activities relating to the desired customer experience.

PART 1

Can service innovation and operations managers recognise the added value of the experiential issues at hand? Do they recognise these issues within their own service offerings? Are these components relevant within the context of the aviation industry?

- Airport has two Primary customers;
  - Internal clients; The airlines, Security, cleaning companies etc.
  - External client; The passengers, in the end all activities are oriented towards to them.

- The aim of the airport is to become “the most friendly airport” in the world. We constantly working on improving our way of welcoming the passenger to the airport. Every so many years we receive awards for our passenger facilities and performance. The airport has to compete with airports in the middle-east and others in Europe. We manage to sell ourselves well as a transfer airport. We provide everything under one roof.
  This is real battle however. One the one hand you have the increasing kerosene prices, the eco tax and of course other costs such cleaning can’t be neglected either.

- Example of a successful introduction of experience oriented service. The airport had trouble with lost transit passengers, with very short transfer times < 20 min. This meant that many flight could not depart on time because of these lost passengers, causing distress for passengers, flight providers, security and others.
  With the cooperation of other parties a fast-lane was introduced for passengers with short transit times. The lane only opens at the peak transit hours. Passengers using the fast lane get preferential treatment at security and are able to use special walk ways. The service has been an alleviation for all parties involved.

- The introduction of the self service kiosk has been a sub-optimal success up to now. Passengers are still not able to use it properly and still prefer to go to the desk. Kiosk thus gets neglected. This varies per flight provider however. Some have stewardess standing by to guide passengers and help them utilise the kiosk. In these instances the kiosk can be considered a success.
The kiosk has also been a success with people that travel a lot like business travellers. They have no problem utilising the kiosk. It’s the once a year travel that still finds the kiosk challenging or scary to use.

- We provide the kiosks for the airline. We decide where to position them. How they are placed, but it is up to airline to ensure that they are utilised properly.

- The focus on the customer experience, has core area of interest. We provide body lounge, cheap and more expensive hotel stays, rest rooms that are cleaned X times a day. We have a museum, baby care room, prayer room almost any facility imaginable is available.

- The trends in the airport change very quickly. Schiphol main port city concept is already in the past. Now its focus on being the most friendly airport on the world.

- For these reasons we attract big name (experience) brand companies such as Nike and Starbucks. We want to show that we belong to the top and that we are the best. It’s part of creating the “wow” experience. The American entering the lounge area saying “wow” the have a Nike Niketown store here.

- The plan for the future is to become a one stop airport. Currently you have to wait at the check-in point, passport checkpoint, then security and then the douene to check in goods, then you have to wait for the plane. All these waiting points we want to reduce to one waiting point. That is the way to go in the future and we are gradually moving towards that.

- The need to focus on the customer experience is urgent. You can’t wait. You can’t fall behind with the trend, you have to be on top of it. (Falling behind would mean losses for us.)

- Our entire airport is aimed at facilitating the passengers and the fellow customers. We have 60,000 departing passengers, 50,000 transfer passengers and 40,000 arriving passengers. Most of them have some form of accompaniments. We cater for these people too. We don’t only provide services for passengers, but also those that only visit the airport or come to pick someone up. The Plaza at landside is a good example of facilitating fellow customer. Focusing on the fellow customer is a great source of income for the airport. One simple example is the tariff for parking spaces, which is one of the biggest money maker for the airport.

- The role of self determination is increasing -> self service in order to increase efficiency. This will also have the effect that face-to-face contact
will also diminish. We want to keep that in however, people contact will always be needed, al be it in a different form. The machine can't give all the answers. Schiphol needs to have a face one can speak to.

- We use a marketing agency to research for us. They walk around with palmtop to fill in the information.

- I present an example of the transfer of the transavia check in to hall 3. His response; change always lead to pain. All the other clients had to move their desk to make room for transavia. Yes, our internal clients felt the pain, but that’s part of the process of improving the service. Now transavia has ample space to deliver its check-in service as needed. First transavia was in pain at hall 1. In the end we have to maximise the usage of the space that we have available. (The battle between costs, personnel, space and customer experience)

- Customer experience statement. Respondent knows that one is existing but doesn’t have an idea what it would be. He refers me to the annual report.

- Schiphol used to have a slogan “Schiphol Fabolious” but that did not stick. Check website for potential customer experience statement.

- They have started with a gastheerschap programma. We hope that this will flow to other actors such as security. We hope that at least give the passenger a smile.

- Self Determination staat heel erg op de map.

- Its about the small stuff. The flower boxes, the welcome message, the warm welcome to Schiphol. Its not the behaviour rules.

**PART 2**

<table>
<thead>
<tr>
<th>The scenario depiction are realistic</th>
</tr>
</thead>
</table>

| New services concepts tend to be developed together with the other actor groups, with a sit around the table and brainstormen. We introduce services incrementally and improve them gradually /increase capacity to handle large amount of passengers. 41.00 |
- The respondent doesn’t believe that the company has any similar tools in place right now. There are so many departments. It is difficult to know.

- The respondent recommends; removing happy.

- He would add; satisfied, cordial, a warm feeling, best host.

**Respondent G – Small Scale Originating & Destinating Airport**

**Function**
Director Operations

**Years in current function**
1.5 years in current function

Can service innovation and operations managers recognise the added value of the experiential issues at hand? Do they recognise these issues within their own service offerings? Are these components relevant within the context of the aviation industry?

- We have done significant investment in reducing waiting time. At the moment we know how much it cost to reduce the costs of waiting times and I know this reduction.

- Example of negative service delivery; security check points. It’s a highly efficient process, but receives a lot of protest. They don’t take into consideration if the client is familiar with such processes or not.

- Feeling at is ease is probably to primary experience the customer wants to experience. Reaching their destination is of primary concern, the rest is secondary to that.

- The need to focus on the customer experience is urgent because of stifling competition with other airports in the region.
APPENDIX – Guide to Kansei Engineering Type II for the design and assessment of experiential services

Guide to Kansei Engineering Type II for the design and assessment of experiential services

This guide has been compiled as a deliverable from an Internship performed at TNO ICT section Business Innovation and Modeling by Richard John, a student of the ‘Management of Technology’ programme at the TUDelft Faculty of Technology, Policy and Management. The guide was developed as part of the Msc. Thesis of the programme.

Reading Guidelines

The guide contains three sections;

Introduction (Page 1 - 4)
A short introduction on Kansei Engineering and a schematic overview on Kansei Engineering Type II.

Kansei Engineering Type II for experiential service design explained in steps (Page 4 - 19)
The second section details the phases of the methodology as presented in the scheme and contains description, theory, examples and recommendations for proper implementation of the approach.

Appendix (Page 20 - 30)
The appendix contains a glossary, a compilation of summaries on the relevant theories and details on using SPSS 16.00. A short description on implementing the approach in the TNO Klanten Barometer has also been added.

Words that have been included in the glossary have been marked with an *.

1. Introduction

Kansei Engineering is an engineering methodology originating from the industrial design field and is an ergonomic consumer-oriented technology for new product development. The approach was developed in Japan, for the development of products that match consumers, emotional needs and psychological feelings.

The terminology of Kansei (which is one of numerous Chinese “loan words” assimilated into the daily Japanese) can be translated as meaning emotionality, sensuality, sensitivity as part of experience.

There are various approaches towards Kansei Engineering. All forms are based on the premise that emotions and feelings of human beings are based on external stimuli from the environment. Approaches can either be qualitative or quantitative in nature.

The approach presented here is quantitative in nature. Attributes of products are
carefully adjusted so that one can ascertain, how these attributes influence the feelings and emotions of (potential) consumers.

1.1 Applicability of Kansei Engineering Type II for service design

The approach allows one to assess the added value of aspects of a service (i.e. SMS service, Service employee) on indicators of service experience such as satisfaction, comfort, feeling valued and others.

The approach is based on Conjoint Analysis* and is implemented by presenting a preset number of scenarios, which contain unique combinations of service components, to respondents (preferably N > 10).

The end result is an overview of the added experience value of the service components and an estimate of the ‘best’ service combination for a desired customer experience. The approach even allows one to make estimates on combinations of service components, which have not been explicitly tested within the approach.

The approach can best be applied where one is interested in designing or improving a collection of closely related service components. Since the approach mirrors a product-design methodology, it is less suitable for the depiction of large process-oriented aspects of service innovation, such as the design of an entire service journey*. The approach is suitable however for focus on minor parts of a service journey (as was done within the Thesis). It is also well suited for usage in the design and assessment of specific aspects of a service journey, such as Self Service Kiosks, Websites, Ticketing dispensers etc.

1.2. Brief example of the approach

The core of the approach is based on Kansei words. Kansei words enables a consumer to express the generated Kansei (Experience) of a service or product. Using computer software and statistical analysis methods a number of service attribute combinations are presented to consumers. The consumers then judge the service or product combination on each individual Kansei word. In essence for each Kansei a number of properties are found, which affect it.

For example in a study of the design of a ‘can of beer’ it was shown that the score of the Kansei Word ‘bitter’ is most affected by the colour of the can and the shape of the logo. In fact a black colour in combination with a non-oval logo evokes a strong bitter Kansei, whereas a white can with an oval logo generates the opposite Kansei.

These results of participating consumers is collected in a database, which is known as a Kansei Knowledge Base. Service experience designers where then able to assess the database for the development of new experiential services, which fit a desired Kansei.
1.3. Generic Scheme of Kansei Engineering Type II

We will explain the generic scheme of Kansei engineering Type II as according to Dahlaard and Schütte (2008). These are two prominent scholars within the design field. They base their model on Japanese publications on Kansei Engineering. They have identified the following phases;

1) **Choice of Domain** As a first step one needs to formulate the general idea behind the product or service.

2) **Span the semantic space** Any artefact can be described through semantic expressions. A large number of words describing the domain i.e. comfort, satisfied, exhilaration. Sources for words are; pertinent literature, commercials, experts etc.

3) **Span the space of properties** The span of service space properties is a collection of selected properties of the product or service. These can also be based on different sources including existing products or services, suggestions for consumer panels, design concepts etc.

4) **Synthesis** In the synthesis step the semantic and the space of properties are linked together. Respondents fill in a number of scenarios of which each represents a unique combination of the properties of the product or service. In this way connections between abstract feelings and technical specifications are established and quantified. For every Kansei word (the semantic space) a number of product or service properties are found to be affecting the Kansei word. There are many options for linking the Kansei words with product or service properties including, fuzzy set theory, genetic algorithm, conjoint analysis and category identification.

5) **Test of Validity (External Validation)** The last step before declaring the data results as suitable for a Kansei Knowledge base is the validation process. This validation should be done in order to check if the prediction model is reliable and realistic.
6) *Model Building* The database can be expressed in a model, which denotes the link between consumer feelings and product properties. This thus becomes the Kansei Engineering system (KES). The KES can aid in establishing the correct design solution for a predefined psychological feeling, which has been developed through a business case or service strategy.
Kansei Engineering Type II for experiential service design explained in steps

2.1. Introduction

This section details the phases of Kansei Engineering Type II as explained in the scheme on page 3. Each phase covers most of the following aspects;

- **Aims** Describes the primary aim and deliverable(s) of the phase.

- **Description** Describes the details for performing the processes within the phase.

- **Example** Examples of the phase was done within the thesis,

- **Recommendations in retrospect** Recommendations on how to improve the process. This done by after reflecting back on the experiences during the thesis.

- **Relevant Theory** A short description on relevant theories. It is explained how they can be useful for implementation of the phase. More detailed explanation ,Title and complete reference to the theory has been provided in the appendix.
2.2. Phase 1 – Choice of Domain

**Aims – Establish the context of the service design**

The aim is to develop a holistic view of the intended service. The Choice of Domain is used to express the intended service concept in general terms.

**Deliverables: Design Brief containing criteria and storyline**

**Description**

The domain space contains the story lines and criteria for the design of the service. It is based on interviews, meetings and brainstorm sessions with stakeholders. The design brief should be presented in a format that allows for rapid and easy understanding of service concepts such as a storyboard or story line.

**Example**

Our development of the domain space was mostly based on collaborative interviews with stakeholders from the industry. The concepts and ideas from these interviews were condensed to form an initial set of criteria for an experiential service provision. We referred to theories on experiential design to ensure a complete and holistic depiction of the experiential service. We chose to base the study on a case of a concise service journey* of a passenger in transit at an airport. Some of the criteria for the case where:

- e. A service should be represented that serves the interest of most if not all the stakeholders interviewed during the explorative study of the industry.

- f. It should be a concept of a service provision that is familiar to a large part of the travelling Dutch population.

- g. It should be a service concept that allows for the depiction of the experiential service design components in levels.

The design brief was based on a short and generic storyline of the service encounters the passenger would come across during the service.
During the thesis we developed a short storyline of a possible service journey of the passenger at the transit airport. As part of the storyline, we also included the potential experience that was being created in currently existing service journey experiences at a transit airport.

<table>
<thead>
<tr>
<th>Service Journey/Storyline</th>
<th>Experience</th>
</tr>
</thead>
<tbody>
<tr>
<td>A  Arrival</td>
<td>Curiosity</td>
</tr>
<tr>
<td>B  Attain Flight Info</td>
<td>Pleasure from first interaction with service employees</td>
</tr>
<tr>
<td>C  Attain Coupon</td>
<td>Choice in participation activities</td>
</tr>
<tr>
<td>D  Buy Gift</td>
<td>Pro-active creation of experience</td>
</tr>
<tr>
<td>E  Alert for Flight Departure</td>
<td>Create Tension &amp; Dismay</td>
</tr>
<tr>
<td>F  Interaction Flight Service Crew</td>
<td>Create Positive Experience</td>
</tr>
<tr>
<td>G  Arrive at Gate</td>
<td>Emotional Relief/Downturn</td>
</tr>
</tbody>
</table>

Table i: Example of Storyline & Service Journey of the transit case

Recommendations in retrospect

It would have been valuable to put more emphasis on theories such as the Customer Experience Statement by Shaw (2005). It would have led to a more straightforward design of the fictitious case. The intent of the service experience would have been clear and would probably have led to an easier selection of design components and indicators of service quality in phase two and three of the process.

Relevant Theory

Voss and Zomerdijk (2007) Their overview on Experiential Design Areas can aid in providing a generic overview of the elements that should be taken into account when developing an experiential service. The theory presented by them can easily integrated in discussion with service providers of the intended customer experience.

Shaw (2005a) & Berry et al. (2002) The “Customer Experience Statement” as by Shaw or the “Experience Motiv” as by Berry et al. can serve purpose here as it provides a guideline for the intended experience of the service. The inclusion of a “Customer Experience Statement” can be beneficial for usage in later stages of the design process (Phase 2 and 3) as it provides a clear boundaries for the intended experience and thus characteristics of the intended service.
2.3. Phase 2 – Span the Semantic Space

**Aims – Establish Indicators of Experience Quality (Kansei Words)**

The aim of phase two is to develop a set of indicators, which can appropriately allow for the measurement of the intended experience of the service.

**Deliverable: (Preliminary) Set of Expected Experience Quality Indicators.**

*Description*

The idea is to develop a set of indicators, which describe the intended service experience. Like in step one the selection of indicators can be based on interviews with stakeholders. Other sources of indicators can be Magazines, Pertinent Literature, Manuals, Experts, Experienced Users, Relating Kansei Studies, Ideas, Visions. In the thesis we selected five indicators of experience quality. However according to Dahlaard et al. (2008) it is possible to include many more indicators (20+). The number of indicators to include is mostly dependent on the design team’s estimation on the workload respondents are able to handle.

*Example*

In the study we focused on a selection of indicators by Shaw and as proposed by stakeholders from the aviation industry. The result was a diversified set of indicators, which covered emotional and physical aspects of the service experience and some common indicators of service quality. We have chosen to represent the indicators in sentences. We recommend the design team to do so as well, as it ensures that indicators are interpreted in an unambiguous manner. Our selection of Indicators of Expected Experience Quality were:

- You feel valued as a customer (Emotional)
- The service makes you feel comfortable (Physical)
- The service makes you feel assured (Emotional)
- You are satisfied with the service (Emotional/Common Indicator)
- The service surpasses your expectation (Common Indicator)

*Recommendations in retrospect*

The selection of indicators is mostly based on the literature by Shaw (2005) and interviews with stakeholders from the industry. Within Kansei Engineering there is also a statistical approach towards the development and selection of Kansei words. This approach allows for the selection of a large set of indicators, whilst reducing the potential for duplicate interpretation of the indicators by respondents. More information on this alternative approach can be found in the reader by Schütte (2005).
Relevant Theory

Shaw (2005b) “Experience Clusters” According to Shaw (2005b) focusing on the customer experience can lead to an increase in customer loyalty, attract new customers, reduce costs and increase spending by customers. There are clusters of experiences that drive value (i.e. feeling valued & comfortable) and one that destroys value and loyalty. As the experience clusters by Shaw are specifically designed for the assessment or identification of (favourable) emotional responses to service experiences, it is of value to consider the theory.

2.4. Phase 3 – Span the Space of Properties

<table>
<thead>
<tr>
<th>Aims – Selection of experiential design components</th>
</tr>
</thead>
<tbody>
<tr>
<td>The aim of step three is to develop a selection of experiential service components, which can be expressed in different variations of the service.</td>
</tr>
<tr>
<td>Deliverable: Selection of Experiential Design Components and their levels.</td>
</tr>
</tbody>
</table>

Description

In this phase we indentify to aspects of service. For easy analogy we refer back to the example of the design of the ‘can of beer’ presented in section 1.2. First one chooses the attributes to analyse (i.e. colour of the can of beer) and the variations there of (i.e. colours blue, grey, gold). In this case of experiential services the attributes are i.e. Physical aspects of the service delivery and the variations are the service provisions (i.e. SMS service, public display, PDA). In our thesis these attributes where named Experiential Design Components.

The primary criteria for the selection of the different variations is that they are clearly distinguishable by the respondents. It is recommended that a workshop is held with a representative group of respondents to ensure that variations of the service are interpreted as intended by the design team. In our implementation we added labels to different service provisions ranging from low to high (See example). We pre assumed that certain variations would have lower experience value than others. It is not strictly necessary to make this distinction but it can help the design team to have a clear understanding of what is being analysed and what can be expected from the results in general.

The development of the Span of Properties tends to proceed in an iterative process. Usually one will need a couple of rounds of refinement before one has attained a set of service provisions that will be interpreted as intended by respondents.

We should note that Conjoint Analysis allows for the analysis of a maximum of about ten to twelve variations of attributes. This should thus be taken into account when selecting and designing the Experiential Design Components.

Example

-102-
Our selection of Experiential Design Components and service provisions where developed in four rounds of refinement. In this process we reduced the number of experiential design components from five to three. We would like to state that in practice phase three and four are done in parallel and not sequentially as described in the Scheme by Dahlaard and Schütte (2008). This is because we need input from SPSS (Orthoplan) to ensure proper development of the service provisions. (The details of the Orthoplan are explained in phase four) The explorative study was used to make an initial selection of the variations of the experiential design components. We have included an overview, which concisely depicts the final selection. The text to describe the variation has been included in blue. An example of an entire scenario has been included at the end.

- Emotional Service Clues
  
  **Low:** Non Empathic Service Employee
  
  De stewardess is druk in gesprek met haar collega en kijkt u na een poosje vragend.

  **High:** Empathic Service Employee
  
  De stewardess begroet u vriendelijk en vraagt hoe u uw vlucht ervaren heeft. U antwoordt dat het een fijne maar toch lange vlucht is geweest. “Ja, soms kunnen die vluchten lang en vermoeiend zijn”, zegt ze meelevend. Vervolgens vraagt ze “Wat kan ik voor u doen?” De stewardess vraagt of u nog vragen heeft en met een vriendelijke glimlach wenst zij u een plezierige reis.

Emotional aspects related to the emotional behaviour of the service employee. As emotions are difficult to express and interpret by respondents, we decided simply use two variations. Either (very) empathic behaviour versus non empathic behaviour.
- Physical Service Clues
  
  **Low:** No indication
  
  U hoort dat uw vlucht over 2 uur vertrekt.

  **Medium:** Public Display of Departure Times
  
  Bij binnenkomst in de wachtruimte zoekt u op de beeldschermen voor de vertrektijd van uw verbindingsvlucht. U ziet dat uw vlucht over 2 uur vertrekt.

  **High:** SMS Service
  
  Terwijl u de wachtruimte binnen loopt ontvangt u een sms-je van uw vliegmaatschappij. Het bericht maakt u erop attent dat uw verbindingsvlucht over 2 uur vertrekt en dat u er minstens 30 minuten over doet om naar uw uitgang te wandelen.

We included aspects that were related to the physical aspects of the service. In this manner we could establish how different ways of providing flight information could influence the experience of the passengers.

- Co creation processes
  
  **Low:** No Service choice
  
  Ze kijkt op haar scherm, en zegt dat alle zitplaatsen al voor de vlucht ingedeeld zijn en er geen wijziging meer mogelijk is. U bedankt de stewardess.

  **Medium:** One service choice
  

  **High:** Multiple service choices (three)
  

The passenger was allowed to co create in the service process by having choice options in services onboard of the flight.

An example of an entire scenario has been depicted in figure i.
Recommendations in retrospect

The study was based on written scenarios. Within these scenarios we labelled the service component at the beginning of each paragraph. This was done to increase the likelihood of respondents interpreting the scenario properly and thus attaining viable results from an academic & scientific view point. Some questioned if this way of describing the information led to respondents using rational instead of their emotions to fill in the survey.

Depending on the purpose of the study and the capability of the researchers, it can be of value to use other forms of portraying the intended service, such as by depictions, on location testing or simulation labs. This will increase the reliability of the result as the service concept more closely matches that of the actual service and will circumvent any necessity of labelling.
2.5. Phase 4 – Synthesis

**Aims – Selection of experiential design components and levels of service**

The aim of step four is to link the Semantic Space and the Space of Properties together. It will lead to establishing a Kansei of the experiential design components within the intended service.

**Deliverable: Survey, SPSS Orthoplan and Conjoint Analysis plan & database.**

We based our identification of the relationship between the two spaces on Traditional Conjoint Analysis. This approach entails that a Conjoint Analysis needs to be done on each of the indicators separately. In practice this means that the same scenarios can be used for all indicators but that the Conjoint Analysis needs to be done for each of the indicators separately. The general process of phase four proceeds in three steps:

1) Develop Orthoplan
2) Develop Scenarios
3) Distribute Survey

1) **Develop Orthoplan** An Orthoplan is a scheme, which presents a preselected set of variations in such a manner that only a limited number of combinations need to be analysed to make valid conclusions. The predictive capability of Conjoint Analysis stems from the fact this it is possible to present a relatively small sub set of scenarios to respondents and subsequently being able to come to conclusions on all possible scenarios of the intended service. The explanation of implementing the Orthoplan and Traditional Conjoint Analysis for Kansei Engineering type II has been added in appendix D. An example of an Orthoplan has included below.

<table>
<thead>
<tr>
<th>Card ID</th>
<th>Physical Service Clues</th>
<th>Emotional Service Clues</th>
<th>Self Determination</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>high</td>
<td>low</td>
<td>low</td>
</tr>
<tr>
<td>2</td>
<td>low</td>
<td>high</td>
<td>high</td>
</tr>
<tr>
<td>3</td>
<td>high</td>
<td>low</td>
<td>high</td>
</tr>
<tr>
<td>4</td>
<td>low</td>
<td>low</td>
<td>med</td>
</tr>
<tr>
<td>5</td>
<td>med</td>
<td>low</td>
<td>high</td>
</tr>
</tbody>
</table>

2) **Develop Scenarios** Once the Orthoplan has been developed, it becomes possible to fill in the scenarios. Please see the example in the following section.

3) **Distribute Survey** One way of distributing the survey is by using the TNO Klantenbarometer. In appendix E, we give a short description of how this was done within the thesis.
Example

The Klantenbarometer survey was made available on the intranet of TNO, which led to an exposure to a total number of 4500 potential respondents. Four variations of the survey where developed. These variations differed in the sequence in which the different scenarios were presented. This was done to reduce the effects of respondent fatigue and bias due to unfamiliarity with the information presented within the scenarios. The results of the surveys were added together to compile a single SPSS database. Furthermore it is useful to note that we used a five point Likert scale to implement the survey. This is common within Kansei Engineering Type II. For convenience sake we have added a screenshot of a scenario and the indicators of experience quality as implement in the TNO Klantenbarometer.

![Scenario A](image)

1. U bent tevreden over de dienstverlening.
   - helemaal oneens
   - oneens
   - neutraal
   - eens
   - helemaal eens

2. De dienst is gemak bevorderend.
   - helemaal oneens
   - oneens
   - neutraal
   - eens
   - helemaal eens

3. U voelt zich gewaardeerd als klant.
   - helemaal oneens
   - oneens
   - neutraal
   - eens
   - helemaal eens

4. U enaat de dienstverlening als geruststellend.
   - helemaal oneens
   - oneens
   - neutraal
   - eens
   - helemaal eens

5. De dienstverlening overtreft uw verwachtingen.
   - helemaal oneens
   - oneens
   - neutraal
   - eens
   - helemaal eens

Figure iii :: Snapshot Implemented Survey
2.6. Phase 5 – Test of Validity

*Aims – To assess the validity of the results from the synthesis phase*

The results are judged on their appropriateness and consistency for the usage or development of the Kansei Engineering System.

*Deliverable: Go/ No Go on the results*

*Description*

As is common to scientific research we analysed the results in terms of internal, external and construct validity. However within Kansei Engineering the main lays in judging if the results seem to be consistent throughout the set of indicators included in the study. This is normally done by analysing tables and data on correlation and measures for relative importance of the properties or Kansei words. Are there unexpected or contradicting results in the data? This is done by a manual check of the results within the database. According to Schütte (2005) there are no statistical tools developed specifically for Kansei Engineering for this purpose. If the results are considered inconsistent the team reverts back to phases two and three to adjust the selection of indicators or experiential design components.

2.7. Phase 6 – Model Building

*Aims – Build a Model which allow for the easy depiction of the information*

In phase six the results are compiled into a (interactive) database for the design and retrieval of Kansei with regards to selected experiential components or a complete service concept.

*Deliverable: Kansei Engineering Database*

*Description*

As the primary purpose of the thesis was to make scientific statements on the relationship of Indicators of Expected Experience Quality and Experiential Design Components within a setup which mirrors Kansei Engineering, our efforts lay in presenting the data in a concise and clear manner. Hence we did not develop a database, which could be utilised for this purpose. However we depicted the results of the study in various forms, including tables and graphical depictions of the results.

*Example*
As an example we have added an overview table from the thesis and graphical depiction of the results. The ‘Utility’ describes the experiential added value of the service components in relation to each other. SPSS also gives results in terms of ‘Averaged Importance Score’, these have been included in the table under %, It describes the importance of the Experiential Design Components to generating a specific feeling. For instance generating a feeling of being valued is for 53% dependent on Emotional Service Clues.

![Table iii :: Results of the study](image)

<table>
<thead>
<tr>
<th>Physical Service Clues</th>
<th>Satisfied n = 119</th>
<th>Exceeds Expectations n = 122</th>
<th>Feel Valued n = 122</th>
<th>Feel Assured n = 111</th>
<th>Comfort n = 122</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low No Public Display</td>
<td>Utility</td>
<td>Std. Error</td>
<td>%</td>
<td>Utility</td>
<td>Std. Error</td>
</tr>
<tr>
<td>Medium Public Display</td>
<td>-0.15 0.04</td>
<td>-0.15 0.03</td>
<td>-0.15 0.02</td>
<td>-0.15 0.02</td>
<td>-0.13 0.04</td>
</tr>
<tr>
<td>High SMS Service</td>
<td>0.13 0.04</td>
<td>0.18 0.03</td>
<td>0.09 0.02</td>
<td>0.13 0.04</td>
<td>0.29 0.06</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Emotional Service Clues</th>
<th>Satisfied n = 119</th>
<th>Exceeds Expectations n = 122</th>
<th>Feel Valued n = 122</th>
<th>Feel Assured n = 111</th>
<th>Comfort n = 122</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low Non Empathic Employee</td>
<td>-0.53 0.03</td>
<td>-0.58 0.02</td>
<td>-0.79 0.02</td>
<td>-0.52 0.03</td>
<td>-0.33 0.05</td>
</tr>
<tr>
<td>High Highly Empathic Employee</td>
<td>0.53 0.03</td>
<td>0.58 0.02</td>
<td>0.79 0.02</td>
<td>0.52 0.03</td>
<td>0.33 0.05</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Participation</th>
<th>Satisfied n = 119</th>
<th>Exceeds Expectations n = 122</th>
<th>Feel Valued n = 122</th>
<th>Feel Assured n = 111</th>
<th>Comfort n = 122</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low No Service Choice</td>
<td>-0.48 0.04</td>
<td>-0.58 0.03</td>
<td>-0.37 0.02</td>
<td>-0.36 0.04</td>
<td>-0.51 0.06</td>
</tr>
<tr>
<td>Medium Single Service Choice</td>
<td>0.15 0.04</td>
<td>0.13 0.03</td>
<td>0.06 0.02</td>
<td>0.08 0.04</td>
<td>0.16 0.06</td>
</tr>
<tr>
<td>High Multi Services Choice</td>
<td>0.33 0.04</td>
<td>0.45 0.03</td>
<td>0.31 0.02</td>
<td>0.28 0.04</td>
<td>0.35 0.06</td>
</tr>
</tbody>
</table>

Table iii :: Results of the study

Recommendations in retrospect

It is possible to add weighing factors to the indicators used in the study. In this manner it becomes possible to establish a best design solution according to the value put to different experiences required from the service. For instance if one needed to design a service experience with a high level of comfort, this could be done by including a weighing factor of 1 for comfort and 0.8 for the other indicators. This approach is best utilised when the data is transformed into a spreadsheet or Kansei Knowledge Base for interactive usage with. Although the results where straightforward in our study, a weighting approach can prove to be useful in more complicated scenarios or services.
2.8 Recommendations for further research on developing Kansei Engineering for the design and assessment of Experiential Service Concepts.

In reflection of the process of the study undertaken during the thesis we would like to add the following recommendations for improving the future application of this approach:

- **Quick and Dirty Kansei Engineering** The approach presented here can alternatively also be implemented in a quick and dirty fashion during a consultancy session with clients. Phases one through three can be done in a quick brainstorm session. Phase four would require a rudimentary implementation of Conjoint Analysis within an excel sheet. One example of a working Excel based Conjoint Analysis can be found at [http://www.sawtoothsoftware.com/download/techpap/caexcel.pdf](http://www.sawtoothsoftware.com/download/techpap/caexcel.pdf) and [http://www.dobney.com/Conjoint/conjoint_simple.htm](http://www.dobney.com/Conjoint/conjoint_simple.htm)

- **Format of Experiment** The guide was developed using a study that was based on written scenario’s of a service concept. More consistent and reliable results can be achieved by utilizing the Kansei Engineering approach within a Customer Experience Lab setup or at an actual service location.

- **Larger sets of Indicators of Expected Experience Quality** As the scientific value of the study was of primary interest, it was not in our best interest to include a large set of indicators. Larger sets of indicators would have lead to other measures that need be taken that would have reduced the scientific merit of the study. However these measures could still would not reduce the commercial variability of the approach or its results however. We would recommend that instead of presenting all scenarios of the service concept, different respondents groups receive subsets of the entire set of service concept scenarios. This would reduce fatigue when filling in the scenarios and thus increase the number of indicators that respondents could handle in a single round of surveys.

6. **Linkage with Quantitative (financial) methods of Customer Experience Management**

   It should be possible to use the approach presented in this study with methods, which give insights on the financial added value of service concepts. One way of doing this would be by using the experience cluster by Shaw (2005). Shaw explains how these clusters can be linked with the Net Promoter Score, a measure which relates customer experience to loyalty and financial measures.
Appendix A - Glossary

A.4. Averaged Importance Score

The averaged importance score is a standardized measure of the relative strength of each experiential design component included in the study. It allows one to make comparative statements between the different experiential service components.

A.1. Conjoint Analyses

Conjoint Analysis is a statistical technique used to determine how people value different features that make up an individual product or service. The objective of conjoint analysis is to determine what combination of a limited number of attributes is most influential on respondent choice or decision making.

A.2. Service Journey

A service journey depicts the customer interaction with the service provider from the first moment of contact until the last interaction to complete the service transaction. It is of interest to look at the service journeys because customers tend to base their final assessment of the service experience on the service journey as whole.

A.3. Utility

Utility as used within Conjoint Analysis as the conceptual basis for measuring value. It is a subjective judgement of preference unique to the respondent participating in the study. Utility is assumed to be based on the value placed on each of the levels by the participating respondent.
APPENDIX C - Perspectives on experiential service design

In the literature review in the thesis we presented a number of theories on experiential service design. We will briefly present the most relevant theories here. The theories aid in bringing content to the phases described in the previous section.

B.1. Engineering Emotional Values in Product Design

According to Schütte, Kansei Engineering is a concept and a methodology in strong development, and thus a framework in which tools and methods are continuously developed, added and integrated.

The aim of his thesis was to; Firstly, to improve understanding of the nature of products making emotional impact on the users and customers. Secondly, to identify and improve methods capable of grasping those affective values and translating them into concrete product design solutions. The thesis presents three empirical studies and two methodological papers, with regards to Kansei Engineering. As a concluding proposition he presents a conceptual model on Kansei Engineering methodology which is based on the experience from the performed studies, with the intent of providing a structure for performing Kansei Engineering studies.

Simon Schütte 2005, Linköpings Universitet, Department of Mechanical Engineering (Available for free on the internet)

B.2. ‘Experience Motif’, touch-points and clues

According to Berry, Carbone and Heackel (2002) each service oriented company should have an “Experience Motif”. The “Experience Motif” reflects the organisation’s core customer experience oriented values and branding strategies. Shaw (2005) speaks of the “Customer Experience Statement”. They consider the development of a proper “Customer Experience Statement” as critical to evoking the right emotions with their customers. Every company should be able to recognise the experience clues it is sending to its customers. These are anything that can be perceived or sensed – or recognised by its absence (Berry, Carbone and Heackel, 2002).


B.3. Service Design in terms of Experiential Design Areas
According to Voss and Zomerdijk (2007) companies innovate in five distinct design areas; One of the remarkable conclusions of this study was that these companies innovated in five distinct design areas; the physical environment, service employees, service delivery process, fellow customers, back office support.

A holistic model on service experience design. A proposition of a model for encapsulating the different ‘Design Areas’ that encompasses most of in not all experiential services. We have included this model in our study because it’s based on one of the latest empirical studies on service experience design (2007).

In addition Voss and Zomerdijk (2007) discuss the ‘service as a journey’ approach taken by many scholars and service design agencies. The total customer experience is the sum of every touch-point, which the consumer encounters. Some characteristics of the service as a journey perspective are;

- Touch-points include both physical (i.e. travelling to a service) and non physical (i.e. the building anticipation of experiencing the service) aspects to service delivery.

![Diagram of Service Experience Model](image)


**B.4. Service Design in terms of Experiential Themes**

In a research on turning service concepts into service experiences Fynes and Lally (2008) did a review of the existing traditional service concept development literature and identified five common “themes”. Subsequently they argued that customer experiences are a progression from services. This means that experiential service concepts should include the core service elements as identified by them and additional experience specific components. This observation has led to a proposition of a conceptual model of service experience concepts.

Fynes and Lally (2008) identify the *Emotional Theme* and *Participation Activities* as the newest addition to service design and highlight these as the “novel” experience oriented elements of service design.
C.1. Introduction

This section explains how Conjoint Analysis can be implemented in SPSS for usage as Kansei Engineering synthesis tool. In concise steps we will explain how to develop an Orthogonal Design, Display the design and how to run the design using the SPSS syntax box. We should note that the usage of Conjoint Analysis within SPSS 16.00 requires the SPSS Conjoint optional add-on module and requires a separate License Authorisation.

C.2. Orthogonal Design

‘Generate Orthogonal Design’ generates a data file containing an orthogonal main-effects design that permits the statistical testing of several factors (Experiential Design Components) without testing every combination of factor levels. This design can be displayed with the Display Design procedure, and the data file can be used by other procedures, such as Conjoint. The Generate Orthogonal Design procedure creates a reduced set of product profiles that is small enough to include in a survey but large enough to assess the relative importance of each factor.

C.2.1. To Generate an Orthogonal Design

➢ From the menus choose:
  Data
  Orthogonal Design
  Generate...

Figure v - Generate Orthogonal Design dialog box
Define at least one factor. Enter a name in the Factor Name text box. Factor names can be any valid variable name, except `status_` or `card_`. You can also assign an optional factor label.

- Click Add to add the factor name and an optional label. To delete a factor, select it in the list and click Remove. To modify a factor name or label, select it in the list, modify the name or label and click Change.

- Define values for each factor by selecting the factor and clicking Define Values.

**Data File.** Allows you to control the destination of the orthogonal design. You can either create a new dataset containing the orthogonal design, or you can replace the active dataset.

- *Create new data file.* Creates a new data file containing the factors and cases generated by the plan. By default, this data file is named `ortho.sav`, and it is saved to the current directory. Click File to specify a different name and destination for the file.

- *Replace working data file.* Replaces the active dataset with the generated plan.

### C.2.2. Defining Values for an Orthogonal Design

You must assign values to each level of the selected factor or factors. The factor name will be displayed after Values and Labels for.

Enter each value of the factor. You can elect to give the values descriptive labels. If you do not assign labels to the values, labels that correspond to the values are automatically assigned (that is, a value of 1 is assigned a label of 1, a value of 3 is assigned a label of 3, and so on).

![Generate Design Define Values dialog box](image)

**Figure vi - Generate Design Define Values dialog box**
C.3. Displaying a Design

The Display Design procedure allows you to print an experimental design. The procedure can display designs created with the Generate Orthogonal Design.

C.3.1. To Display an Orthogonal Design

- From the menus choose:
  
  Data
  
  Orthogonal Design
  
  Display...

- Move one or more factors into the Factors list.

- Select a format for displaying the profiles in the output.

**Format.** You can choose ‘Listing for experimenter’ to generate a list, which can be used for the purpose designing the service profiles of the intended service.

- *Listing for experimenter.* Displays the design in a draft format that differentiates holdout profiles from experimental profiles and lists simulation profiles separately following the experimental and holdout profiles.

Optionally, you can, Click Titles to define headers and footers for the profiles.

C.4. Running a Conjoint Analysis

Once the data has been collected using for instance the Klantenbarometer it can be analysed using the Conjoint procedure of SPSS. A graphical user interface is not yet available for the Conjoint procedure. To obtain a conjoint analysis, you must enter command syntax for a CONJOINT command into a syntax window and then run it.

* For complete command syntax information about the CONJOINT command, please see the Command Syntax Reference in the Conjoint SPSS 16.00 available on the SPSS website.
C.4.1. To Run a Command from a Syntax Window

From the menus choose:

File
   New
   SPSS Syntax...

This opens a syntax window.

- Enter the command syntax for the CONJOINT command.

- Highlight the command in the syntax window, and click the Run button (the right-pointing triangle) on the Syntax Editor toolbar.

C.4.2. Requirements

The Conjoint procedure requires two files—a data file and a plan file—and the specification of how data were recorded (for example, each data point is a preference score from 1 to 100). The plan file consists of the set of product profiles to be rated by the subjects and should be generated using the Generate Orthogonal Design discussed in section C.1. The data file contains the preference scores or rankings of those profiles collected from the subjects. A separate data file should be generated for each indicator of experience quality included in the study. The plan and data files are specified with the PLAN and DATA subcommands, respectively. The method of data recording is specified with the SCORE subcommand.

**SCORE Subcommand**

The SCORE subcommand indicates that each data point is a preference score assigned to the profiles, starting with the score of profile 1, then the score of profile 2, and so on. This type of data might be generated, for example, by asking subjects to assign a number from 1 to 100 to show how much they liked the profile. A higher score implies greater preference.

CONJOINT PLAN=* /DATA='RUGRANKS.SAV' /SCORE=SCORE1 TO SCORE22.

The variable SCORE1 contains the score for profile 1, and SCORE22 contains the score for profile 22.

**PRINT Subcommand**

The PRINT subcommand allows you to control the content of the tabular output. For example, if you have a large number of subjects, you can choose to limit the output to summary results only, omitting detailed output for each subject, as shown in the following example:

CONJOINT PLAN=* /DATA='RUGRANKS.SAV' /RANK=RANK1 TO RANK22 /SUBJECT=ID
PLOT Subcommand

The PLOT subcommand controls whether plots are included in the output. Like tabular output (PRINT subcommand), you can control whether the output is limited to summary results or includes results for each subject. By default, no plots are produced. In the following example, output includes all available plots:

CONJOINT PLAN=* /DATA='RUGRANKS.SAV' /RANK=RANK1 TO RANK22 /SUBJECT=ID /PLOT=ALL.

UTILITY Subcommand

The UTILITY subcommand writes an SPSS data file containing detailed information for each subject. It includes the utilities for DISCRETE factors, the slope and quadratic functions for LINEAR, IDEAL, and ANTIIDEAL factors, the regression constant, and the estimated preference scores. These values can then be used in further analyses or for making additional plots with other procedures. The following example creates a utility file named rugutil.sav:

CONJOINT PLAN=* /DATA='RUGRANKS.SAV' /RANK=RANK1 TO RANK22 /SUBJECT=ID /UTILITY='RUGUTIL.SAV'.

C.4.3. Example of the syntax used within the Thesis

For Kansei Engineering Type II it is necessary run the CONJONT syntax on each of the indicators separately. An example of the syntax for one of the indicators used in the thesis has been included here;

CONJOINT PLAN='C:\Data Analysis\ORTHO PLAN Final_17092008.sav' /DATA='C:\Data Analysis\overtreft\Kansei_Tool_All Results_Final_20081103.sav' /SCORE=SCORE1 to SCORE9 /SUBJECT=ID /PRINT=SUMMARYONLY /PLOT=ALL /UTILITY='C:\Data Analysis\overtreft\Conjoint_Output Data_overtreft.sav'.
APPENDIX D - Guidelines to implementing the Conjoint Analysis TNO Klantenbarometer Online survey tool

In this section we will discuss the most primary aspects of implementing the Kansei Engineering in the TNO klantenbarometer Online Survey Tool. We will not delve into all aspects of design a survey within this tool, but focus on those elements that where specific to Kansei Engineering.

D.1. Presenting the indicators

In the figure viii, we show part of the list of questions posted in de tool. We numbered the questioncode KZT_xxx. Per scenario we increased the second digit by one and started recounting the questions. So KZT_000 through KZT_004 contains the first scenario. KZT_010 through KZT_014 contains the second scenario and so forth.

<table>
<thead>
<tr>
<th>Questioncode</th>
<th>Scenario Description</th>
<th>Value</th>
<th>Text</th>
</tr>
</thead>
<tbody>
<tr>
<td>KZT_000 1</td>
<td>0 100 RADONNAASTEKKAAR</td>
<td>102867</td>
<td>Edit, Maak kopie, Verwijder, Naar pool</td>
</tr>
<tr>
<td>KZT_001 2</td>
<td>0 100 RADONNAASTEKKAAR</td>
<td>102868</td>
<td>Edit, Maak kopie, Verwijder, Naar pool</td>
</tr>
<tr>
<td>KZT_002 3</td>
<td>0 100 RADONNAASTEKKAAR</td>
<td>104819</td>
<td>Edit, Maak kopie, Verwijder, Naar pool</td>
</tr>
<tr>
<td>KZT_003 4</td>
<td>0 100 RADONNAASTEKKAAR</td>
<td>104820</td>
<td>Edit, Maak kopie, Verwijder, Naar pool</td>
</tr>
<tr>
<td>KZT_004 5</td>
<td>0 100 RADONNAASTEKKAAR</td>
<td>104821</td>
<td>Edit, Maak kopie, Verwijder, Naar pool</td>
</tr>
<tr>
<td>KZT_005 6</td>
<td>0 100 RADONNAASTEKKAAR</td>
<td>104876</td>
<td>Edit, Maak kopie, Verwijder, Naar pool</td>
</tr>
<tr>
<td>KZT_010 10</td>
<td>1 100 RADONNAASTEKKAAR</td>
<td>104872</td>
<td>Edit, Maak kopie, Verwijder, Naar pool</td>
</tr>
</tbody>
</table>

The Questioncodes with rounded numbers (KZR_000, KZT_010, KZT_020 etc.) contains the written text of the scenario. Figure ix shows how we implemented the scenarios for within these questions.
As can be seen in figure ix, the text of the scenarios was entered in the 'Inleiding' textbox. The indicator of service quality was entered in the 'Tekst' textbox. This implementation allowed for a concise layout of scenarios and survey questions.

The survey was developed using straightforward functions from the TNO klantenbarometer tool. The original survey is still available on the TNO klantenbarometer server and can be found under: Kies opdrachtgever > TNO Richard John (575).