

Mobile Systems for Customer Service Differentiation – the Case of Lufthansa

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Abstract

The airline industry has undergone dramatic changes. Fierce competition between full service and no-frills carriers is intensifying across the world. Full service carriers had to adjust to no-frills carriers' low priced minimal service. At the same time, they still offer their traditional higher priced premium service. To make the grade on this price differentiation, they aim at providing different service levels to different customer groups. Recently, mobile communication has gained importance, especially in mobile contexts such as travelling. However, service level differentiation in mobile channels is not yet widespread. Hence, little is known about: How can the customer base be segmented for different mobile service levels? Which characteristics qualify mobile services for service level differentiation? How can mobile services be designed for service level differentiation? On the basis of an in-depth analysis of the specific case of Deutsche Lufthansa AG (LH), the paper addresses these research questions. Our findings are: Separate mobile service levels seem to be possible for only a limited number of target groups. The feasibility of creating different service levels appears to be dependent on the supported activity's predictability and task type. Service level differentiation seems to be reflected in the communication type used by the mobile service.

Keywords: Mobile Service, Airline Industry, Customer Relationship Management, Service Level Differentiation, Mobile Business.

1. Introduction

The airline industry has undergone dramatic changes in recent years (Gillen et al. 2005). Reduced revenues after the terrorist attacks of September 11th, 2001, oil prices on a historical high and so called no-frills airlines result in a tough price competition in the market (O'Connell et al. 2005). To retain their revenue streams and to cut costs, airlines must manage their customer relations very carefully; to invest in relations with valuable customers and to reduce costs for handling less valuable customers are major challenges (Rose et al. 2005). For this reason, full service carriers had to adjust to no-frills carriers' low priced minimal service. But at the same time, they still offer their traditional higher priced premium service. To make the grade on this price differentiation, full service carriers aim at providing different service levels in every communication channel. However, whereas in traditional communication channels customer-differentiated treatment according to the customer's value is common, in the emerging mobile channels this is not yet widespread. Therefore, little is known about:

- How the customer base can be segmented for different mobile service levels?
- Which characteristics qualify mobile services for service level differentiation?
- How mobile services can be designed for service level differentiation?

The case of Deutsche Lufthansa's (LH) mobile services will give insights about so far little understood service level differentiation in mobile services. In the next section, a theoretical foundation of service level differentiation as well as mobile business and mobile services is

given. In section three we describe our research methodology and in section four the background to LH, its current and its planned mobile services are described. In section five, the case is analyzed and the findings are presented. Finally, the conclusions are drawn.

2. Theoretical Foundation

2.1 Service Level Differentiation

The concept of customer relationship management (CRM) concerns attracting and keeping “economically valuable” customers and repelling and eliminating “economically invaluable” ones (Shaw et al. 1999). The increase of loyalty resulting in higher profitability can be achieved by higher service quality leading to higher customer satisfaction (Reichheld et al. 1990). Service levels are one form of a company’s investment in a customer relationship. Customers in different segments view service quality differently. They can also have different needs, desires, perceptions, and experiences (Zeithaml et al. 2001). Customer segmentation is a not a new concept (Smith 1956). Customer segmentation partitions the customer base into homogenous and disjoint customer segments (Reichhold 2006, p. 169). Traditional customer segmentation approaches have often used geographic or demographic attributes such as age, gender, etc. to classify customers (Beane et al. 1987). Recently, new publications have suggested not differentiating customers by demographic factors but by more business related attributes such as their purchase history or profitability (Bock et al. 2002; Tsai et al. 2004), or by their expected lifetime value (Hwang et al. 2003). All of them have in common a more or less detailed segmentation of the customer base similar to Zeithaml’s customer pyramid:

- *Platinum customers*: most profitable customers, who are typically heavy users of the product, who are not overly price sensitive and whose commitment to the enterprise is high.
- *Gold customers*: The profitability level is lower and the commitment is not as high as platinum members, even though they are heavy users.
- *Iron customers*: These customers provide the volume needed to utilize the firm’s capacity but whose spending levels, loyalty and profitability are not substantial enough for special treatment.
- *Lead customers*: Customers that cost the company money. The company must minimize this customer segment, either by trying to upgrade customers or by disassociating from them.

Each of these customer segments has a different profitability and different service level requirements and expectations. Therefore service offerings should be tailored differently to each of the segments.

2.2 Mobile Business and Mobile Services

Technological advancements in mobile communications enable new ways of doing business (Raisinghani 2002), often referred to as “mobile business” (MB). One business area where MB concepts are applied is CRM, resulting in mobile CRM (mCRM). Typical examples of mCRM are mobile marketing, mobile sales force automation and mobile customer service. The mobile services described in this article are mobile customer services. Mobile customer services are a supplier’s electronic service capabilities, which are delivered via mobile technology; the customer can access these service capabilities ubiquitously via mobile devices (e.g. Mallat et al. 2004). The aim of mobile customer relationship management is to extend customer relationships into situations where traditional interaction channels such as the web are out of reach (Aschmoneit 2004, p.97). To a certain extent, mobile services are

similar to services delivered via the World Wide Web. However, they differ from web-based service because of the portability of the devices, the association of the device with a particular user, the personalization of the application to the user, and the constraints imposed by limitation of the device (Farley et al. 2005).

Different approaches for the classification of mobile services are available in the literature. Some consider the strategic goals (Schierholz et al. 2005), some consider the task the service is to support (e.g. BenMoussa 2004; Gebauer et al. 2004), others the way the service is delivered (Amberg et al. 2004), the service's ease of use and benefits (Anckar et al. 2002) or technical characteristics of the application (Mallick 2003, pp. 89-111). To cover these different angles, the following combination of the mentioned characteristics have been chosen to analyze mobile services in this paper:

- *Intention to use*: The intention for the usage of a service can be *information access*, *data processing*, *notification*, or *2-way communication* (Gebauer et al. 2004).
- *Task type*: The task for which the mobile service is applied can be of the type *leadership*, *routine task*, *need for irregularity handling*, *interactivity*, *interdependence*, or *mobility* (BenMoussa 2004; Gebauer et al. 2004).
- *Predictability*: The mobile service's delivery or usage is either *predictable* or *unpredictable* (i.e. in reaction to exceptional events) (Anckar et al. 2002).
- *Customer segment*: A mobile service can be offered for one specific customer segment, for several or all customer segments. Sometimes a mobile service is provided for several customer segments with different parameter values (Schierholz et al. 2005).
- *Communication type*: The mobile service is either initiated by the enterprise's system (*push*), or by the customer (*pull*) (Amberg et al. 2004).
- *Application type*: A mobile service architecture can be e.g. of the type *smart client*, which is installed on the customer's device, messaging via SMS (Short Message Service), or wireless Internet via WAP (Wireless Application Protocol) (Mallick 2003, pp. 89-111).
- *Ease of use*: This attribute depends on various mobile application characteristics (Lee et al. 2004; Siau et al. 2004). For the analysis of this case study the focus is laid on the amount of text the customer needs to type in, the number of interactions, the difficulty and number of parameters to remember (e.g. username, password). Values are *high* (one interaction, nothing or small volume text to type in, nothing to remember), *medium* (multiple interactions, medium to high volume text to type in, few parameters to remember) and *low* (multiple interactions, high volume text to type in and more parameters to remember).
- *Benefits to the user* (Anckar et al. 2002; Gebauer et al. 2004), categories are *efficiency* (higher productivity due to the better use of idle times, or reduction of process times), *quality* (elimination or reduction of unpleasant activities, e.g. waiting in line), *flexibility* (possibility to react faster to changing conditions and requirements), *mobility* (possibility to change places while applying the service), *costs* (no service costs, transaction costs, e.g. SMS or while connected to the wireless Internet, service costs as well as transaction costs).

Some characteristics imply further consequences, e.g. push services are typically only allowed with an explicit permission by the customer.

3. Research Methodology

One of the fundamental decisions in research design is between deductive, quantitative and inductive, qualitative approaches (Hussey et al. 1997). This research seeks to explore a new domain, thus the use of inductive, qualitative approaches such as case study research (Eisenhardt 1989; Stake 1995; Yin 1994). Non-quantitative and non-positivistic research

methodologies such as case study research are established as an appropriate research methodology for top-tier journals and conferences in the MIS field (Benbasat et al. 1999; Davenport et al. 1999; Klein et al. 1999; Markus et al. 1999). “In natural settings [such as case studies], researchers are able to explain more clearly the causal links through real-life interventions, describe the real-life context in which an intervention occurred and explore those situations in which the intervention being evaluated has no clear, single set of outcomes” (Murphy et al. 2002). Case selection is crucial for case study research, thus literature is full of advice on this issue (e.g. Eisenhardt 1989; Perry 1998; Stake 1995).

Our choice is a single-case study for two reasons. First, due to the current state of customer segmentation in mobile services, the study is exploratory in nature and the aim is to gain an in-depth understanding of this complex subject. Hence, choosing a single-case study allows taking a holistic, in-depth and thorough view of the case. Second, as the information on these kinds of issues is often considered business-critical and thus confidential, the researchers must have access to an organization willing to share the information. Obviously, from single-case study, no statistically generalizable results can be derived.

The most prominent issues to consider in achieving high-quality case study design are construct validity and internal validity (Yin 1994). Construct validity refers to establishing suitable operational measures for the concepts being studied. This was achieved by basing the questionnaire used in the semi-structured interviews and the framework for the analysis of the mobile services on the work of previous researchers (see section 3). Internal validity refers to the reliability of a study and whether the variables chosen are sufficient for to describe and explain the topic under investigation. To ensure internal validity, the case study is based on semi-structured interviews, individual analysis of transcripts as well as information supplied by the studied organization in form of project documentation, system documentation and models, spreadsheets, organizational charts, etc. During interviews, two researchers were always present, taking notes individually. Those notes were later compared, merged and verified by researchers as well as interviewees. Follow-up interviews were conducted to clarify open issues and to allow interviewees to correct researchers’ assumptions, opinions and analyses. To achieve a rigorous case study design, this case study was created in four stages:

- (1) *Questionnaire and case design.* Literature on mobile services and customer segmentation published in top-tier journals and conferences was analyzed to derive a conceptualization of mobile services and customer segmentation. One framework to classify customers into segments and another to analyze mobile services were synthesized from approaches found in the literature.
- (2) *Preliminary contacts.* Companies with experiences in customer segmentation, a track record of successfully introducing (technological) innovations into their industries and implemented mobile services were identified. Managers responsible for the service development and operation were contacted to obtain first information about the projects. The decision for a single company was verified obtaining more detailed information about the project in a workshop with researchers and company managers.
- (3) *Case study visits.* Three semi-structured interviews were conducted on site and in telephone conferences. Interviewees were a) a senior manager responsible for the CRM strategy development, b) a manager responsible for CRM processes and Global Passenger Services as well as c) a manager of IT services responsible for information systems design and operations. Along with the interviews, the researchers obtained documentation about the project and the organization.

- (4) *Data analysis and post-visit contacts.* After the interviews, transcripts were written and a descriptive case study was written. Analysis using the frameworks from prior literature analysis was applied. The results of the analysis were discussed with other researchers and with the interviewees. The final results of the case description and analysis of the case were confirmed and approved for publication by the company.

4. The CASE of lufthansa

4.1 Corporate Background

Lufthansa (in the following referred to as LH) is an aviation corporation founded in 1951 as a government-owned German flag carrier, and then privatized starting in 1953. Today it is one of the world's largest airlines. LH's major business is its passenger business area "Passage" with 63 % of its corporate sales. With its 90,000 employees LH realized a total revenue of €m 16,965 and had 50 m bookings in 2004 (Lufthansa AG 2005). LH positions itself as a full-service airline. It aims at providing products to customers in the market, meeting the specific requirements of each customer segment. To increase customer loyalty, as most other airlines, LH offers a frequent flyer program called "Miles & More" (M&M), in which more than 10 m members receive bonus miles for each flight they take with LH (or a partner) (Klophaus 2005). As most other airlines, LH differentiates three product lines which include different service levels: first class, business class and economy class. Additionally, within the M&M program customers have one of five different statuses (see table 1), depending on the customers' bonus miles account balance. These statuses are associated with product lines, e.g. a senator status customer receives first class service (except for the lounge where there's a senator and a first class lounges) even when flying economy class.

Target group for mobile services	LH customer statuses	Characteristics	LH product lines
status customers (SC)	honorable circle (HON)	600,000 miles within two year	first class
	senator (SEN)	150,000 miles within one year	
	frequent traveller (FTL)	50,000 miles within one year	business class
basic customers (BC)	Miles & More members	M&M member	economy class
non-members (NM)	non-members	not a M&M member, a prospective or non-customer	

Table 1. LH customer segments

The *non-members (NM)* are mostly customers who only fly occasionally or who are not very loyal to a particular airline. Their primary requirement is the low flight price. For a lower fare they will accept waiting times to a certain extent. LH's profit margin from this customer segment is small and causes a high cost pressure. Cost-cutting through self-services is often infeasible since many of these customers are inexperienced in standard handling procedures (e.g. the check-in process). The *basic customers (BC)* have the same requirements and consequences for LH as the non-members. However, this segment flies more frequently and is therefore more familiar with standard handling procedures. Self-service is suitable for this customer segment. The *Frequent Traveller* and the *Senator* expect a high flexibility in changing flights as well as fast and efficient handling procedures. While LH meets their requirements and this customer segment perceives the service difference to basic customers, they are less price-sensitive. Self-services are highly eligible for FTL and SEN since they are well experienced in handling procedures and highly interested in self-services due to resulting time-savings. The difference between FTL and SEN is noticeable in the Senator's additional service features (e.g. access to the senator lounge). The *Honorable Circle* has the same requirements as FTL and SEN. Additionally, they pay great attention to the individual service, such as the new First Class Terminal in Frankfurt which is exclusively provided for

customers in the first class product lines. Hence, self-services are not suitable for this customer segment. LH aims to reflect the different service levels for its customer segments in each communication channel. In particular FTL, SEN and HON (SC) shall perceive a higher service than *basic customers* which again receive different services than *non-members*.

4.2 Deutsche Lufthansa's Mobile Services

With the advent of mobile services, LH aims to provide a higher service quality to its customers and to meet its hallmark of innovation. An increased service quality through mobile services can be achieved by saving time or using idle time productively; innovation is reflected in the perceived innovative connotation of mobile services. According to LH's goal to make customer differentiation recognizable in each channel, LH strived to develop mobile services with different service levels. For this LH defined three target groups based on its customer segments (see table 1): SC, BC and NM. An explanation of the services is given in the following sections. Mobile services are available for flights ex Germany operated by Lufthansa¹.

4.2.1 Current mobile services

- (1) *Mobile check-in service*: This service is used to change the check-in status of the customer. The check-in procedure is a routine task, which is predictable (typically shortly prior to departure). The service is different for status and basic customers. It is not provided to non-members. Prior to departure status customers receive a check-in request via SMS. They only need to reply with "y" for yes followed by the flight number which was given in the check-in request message. They will then get a confirmation-SMS with flight information. In contrast to status customers basic customers and non-members must initiate the check-in service by themselves via WAP. In five steps they must enter the URL, M&M number, as well as last name. Then they must select the flight. All customers having used the SMS Check-in have to pick up their boarding pass at Quick Check-in machines supporting reduced pick-up times.
- (2) *Flight-related information service*: This service notifies customers about events such as gate changes, flight delays or flight cancellations. The events are unpredictable and create a need for irregularity handling, e.g. walking to a different gate. The service is equal for status and basic customers. It is not provided to non-members. As soon as one of the events occurs customers will receive an alert-SMS. They need not reply to this SMS.
- (3) *Arrival/departure information service*: This service allows customers to access information about a specific flight (e.g. arrival and departure time, punctuality or gate number). The service is a routine task but initiated by customers and therefore unpredictable for LH. It is equal for all target groups. One way to access this flight information is by sending an SMS with "d" for departures or "a" for arrivals followed by the flight number. Another way is the WAP service. Four steps are necessary here. Customers must enter the URL, select a departure or arrival location from a list of major airports or enter a city code, select the scheduled time, and finally select his flight.
- (4) *Flight plan service*: This service allows all target groups to request flight plans at specific dates and arrival or departure locations. The characteristics are similar to the previous service. The major difference is that it is not available via SMS pull but only as WAP

¹ On selected long-haul flights Lufthansa offers free wireless LAN access to business and first class passengers. This service is not covered in this case.

pull. Customers must enter the URL, enter the departure and arrival locations and select a date. They then must select a connection from a list. The received information includes flight numbers, departure and arrival terminals as well as make and type of the aircraft used on the flights.

- (5) *Miles & More balance service*: This service allows customers to access their M&M account's balance. The service is a routine task, initiated by customers and therefore unpredictable for LH. It is equal for status and basic customers. It is not applicable to non-members. The service is provided via SMS or WAP. Customers send the word "miles" to LH via SMS. Via WAP customers enter the URL and M&M number (or his user name) and password.
- (6) *LH contact information service*: This service allows looking up Lufthansa's contact phone numbers. The service is a routine task, initiated by customers and therefore unpredictable for LH. It is equal for all target groups. Via WAP customers enter the URL and select the LH contact information service.

4.2.2 *Planned mobile services*

Mobile services have been well-accepted by LH customers: 64% of the HON customers have entered their mobile phone number in their M&M profile and 47% of them have also given a permission to LH to contact them by SMS. In comparison, 93% of these customers have given their email address, but only 24% of those have also given the permission to be contacted by email. Even though the services are only available for flights departing from German airports so far, LH experiences more than one million service transactions per year (i.e. mobile check-in, request for flight-related information, notification flight changes, etc.). 80% of these are SMS push services, 9% WAP pull services, 8% PDA timetable and 3% SMS pull services (in 2005, the 2004 distribution only differs marginally).

This high acceptance of mobile services encourages LH's plans to extend the mobile services following its goal of customer differentiation within the services. The following three services are LH's most advanced services in conception and realization:

- (7) *Rebooking information service*: Beginning in summer 2006, LH will inform customers who have been rebooked due to delays or cancellations. These customers receive detailed information about the new bookings. Initially this service will only be available for flights departing from the German hubs in Frankfurt and Munich. It will be provided to all customers who have given permission in their M&M profile. As soon as the event occurs, customers receive the notification.
- (8) *Lost baggage information service*: Immediately after flight arrival this service will notify the basic customer via SMS-push about the loss of his baggage. The service could be provided to basic and status customer, but is planned to be provided only to the basic customer. Status customers will receive higher non-electronic service: they will be informed in person by the flight crew, shortly prior to arrival.

Additionally, all mobile services will be internationalized. Beginning in summer 2006 all mobile services will be also applicable to flights departing from international locations and will be also available for customers who have subscriptions with international mobile network operators.

5. Analysis

5.1 Customer segmentation

LH status customers (HON, SEN, FTL) are LH's heavy users, which only differ in their profitability and commitment. Due to their heavy usage they can be allocated to Zeithaml's *platinum/gold* customer segment. Basic customers can be equated with Zeithaml's *iron* customer segment. These customers provide the volume needed to utilize the firm's capacity but they are not specially treated by LH. Finally, LH's non-members are equal to Zeithaml's *lead* customer segment. LH tries to minimize this customer segment by attracting them into the M&M program.

LH customer segments: Target groups for mobile services	Zeithaml's customer segments
status customers (SC)	platinum
	gold
basic customers (BC)	iron
non-members (NM)	lead

Table 2 Mapping LH customer segments to Zeithaml's customer segments

5.2 Mobile services

To understand which characteristics qualify mobile services for service level differentiation, the characteristics of LH's mobile services with regard to Zeithaml's four customer segments are analyzed in detail. The results are presented in table 3, furthermore the mobile check-in push and pull service as well as the flight-related information service are described exemplarily.

- (1) *Mobile check-in service: platinum/gold* profits from the service's *high ease of use*. The customer must only perform one interaction and must type in a single letter in combination with his flight number. However, for *iron* and *lead* the mobile service is of low ease of use. The customer must perform multiple interactions, type in relatively high volume text and must remember more parameters. Both customer segments benefit from *efficiency* and *quality* increase because of reduced buffer and waiting time as well as *flexibility* and *mobility* since they can check-in from anywhere. Additionally *platinum/gold* benefit from the *convenience* of not having to remember to perform the check-in their M&M membership number. *Costs* for the customer are comparable, only push services cause transaction costs for LH though.
- (2) *Flight-related information service*: The service is equal for *platinum/gold* and *iron*. It is not provided to *lead*. The *ease of use* for this service is *high*. The customer does not need to perform one interaction or need to type in text. Both customer groups benefit from increased *efficiency* and *quality*, e.g. in case of a flight delay customers can arrive later at the airport and are highly *flexible* since they can directly react to changes. The service creates *no costs* for customers.

	Task characteristics			Mobile service characteristics				
	Intention to use	Task type	Predictability	Communication type	Application type	Ease of use	Benefits to the user	Zeithaml's segments
Current mobile services								
1. Mobile check-in	data processing	routine task	predictable	push	SMS	high	efficiency, quality, mobility	platinum/ gold
				pull	WAP	low	efficiency, quality, mobility	iron, lead

2. Flight related information	notification	need for irregularity handling	un-predictable	push	SMS	high	efficiency, flexibility, quality, no costs	platinum/gold, iron
3. Arrival/departure information	information access	routine task	un-predictable	pull	SMS/WAP	medium / medium	efficiency, quality	all
4. Flight plan	information access	routine task	un-predictable	pull	WAP	medium	efficiency, mobility	all
5. Miles & More balance	information access	routine task	un-predictable	pull	SMS/WAP	high / medium	efficiency, quality	platinum/gold, iron
6. LH contact information	information access	routine task	un-predictable	pull	WAP	high	efficiency, flexibility	all
Planned mobile services								
7. Rebooking information service	information access	need for irregularity handling	un-predictable	push	SMS	high	efficiency, quality, mobility	platinum/gold, iron
8. Lost baggage information service	notification	need for irregularity handling	un-predictable	push	SMS	high	efficiency, flexibility, quality, no costs	iron

Table 3. Classification of LH's mobile services according to task and service characteristics and Zeithaml's customer segments

5.3 Key findings

Based on the case study of LH's mobile services, the following insights regarding mobile service level differentiation can be transferred to Zeithaml's customer pyramid.. These findings exemplify how customer differentiation in mobile services may be achieved.

Finding 1: The case suggests that providing one separate service level for each of Zeithaml's four customer segments might be too complex in practice. Instead, the highest customer segments (platinum, gold) can be combined to one customer group (premium customers). The two lower customer segments (iron, lead) can also be combined to one separate customer group (mass customers). The reason why only two different service levels are offered can be explained with the small number of mobile service characteristics eligible for service differentiation (see finding 3).

Finding 2: The feasibility creating different service levels appears to depend on the two task characteristics predictability and task type. In the case of LH, three predictability/task type combinations have been identified: predictable/routine task (e.g. check-in), unpredictable/routine task (e.g. flight plan), unpredictable/need for irregularity handling (e.g. gate change). Service level differentiation happens only in predictable routine tasks (see service 1 in the hatched cells in table 4), thus it does not seem to be feasible for every mobile service (see table 3 and 4).

Mobile service characteristics		Task characteristics: Predictability/ task type		
Communication type	Application type	Predictable / routine tasks	Unpredictable / routine task	Unpredictable / need for irregularity handling
pull	WAP		3, 4, 5, 6	
	SMS	1	3, 5	
push	SMS	1		2, 7, 8

Table 4. Feasibility of service level differentiation depending on predictability and task type (numbers refer to the enumeration of mobile services in section 3.2)

Finding 3: Service level differentiation seems to be reflected in the mobile service characteristic communication type. It can be achieved by the choice of communication type which then determines the application type. Both communication and application type determine the ease of use and the benefits to the user (see table 5). E.g. a premium customer profits by more convenience of an SMS push service since he does not need to remember

performing the service but is reminded by the company. Offering WAP pull services is less costly for LH thus suitable for lower service levels.

Service level	Mobile service characteristics			
	Communication type	Application type	Ease of use	Benefits to the user
1: highly valuable customers (platinum, gold)	push	SMS	high / medium	marginally higher
2: less valuable customers (iron, lead)	pull	WAP	medium / low	marginally lower

Table 5. Mobile service characteristics eligible for service differentiation

The suitable choices for the communication type dependent on the task characteristics are the following (see finding 2):

- *Push or pull for predictable/routine tasks:* Both parties, the company as well as the customer, can predict the time when the service must be conducted. The premium customer benefits from the automatic check-in request (*push*). For the mass customer the *pull* service is slightly lower in service level, since he must remember to initialize the check-in.
- *Pull for unpredictable/routine task:* The customer's usage of this service type is not predictable to the company (e.g. LH's flight plan service, LH contact information service). Therefore, pull is the only communication type, which can be applied for this service.
- *Push for unpredictable/need for irregularity handling:* The need of requesting this service type by the customer is not predictable for him (e.g. LH's flight-related information service to notify the customer about a gate change). Providing a push service to the premium customer and to withhold this information for the mass customer would create distinctive disadvantages to him (e.g. missing the flight) and eventually might cause costs or even liability for LH. Therefore, push is the only communication type, which can be applied.

6. Conclusions & Further Research

Lufthansa aims at providing customer-differentiated service levels in each channel, including its mobile services. For the customer differentiation in its mobile services, LH defined two target groups for service level differentiation, derived from its five customer segments. The feasibility to create different mobile service levels is dependent on the two task characteristics "predictability" and "task type", with one predictability/task type combination enabling service level differentiation (i.e. predictable routine tasks). The design of LH's current and planned mobile services showed that different mobile service levels were achieved by different communication types and application types, resulting in different ease of use and benefits to the user. Despite of some technical challenges and the perception of Lufthansa among price sensitive customers, it is to mention that the positive results result of customer differentiation in mobile services encourage LH to expand their mobile services.

The analysis of Lufthansa's services has shown that with reasonable adoptions to the specific context of the case company the theoretical concept of Zeithaml (for customer segmentation) provides a useful background for practice. Concerning the classification scheme for mobile services, we experienced that existing approaches are too narrow in scope. However, combining multiple approaches into a holistic classification scheme resulted in a practicable framework to describe Lufthansa's services. Limitations of the research lie in the research goals and design. Our focus was to explore the domain of customer service level differentiation in mobile services. The findings should be verified with further cases and, later on, with a broader quantitative research design.

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