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Technology-based service experiences

A study of the functional and emotional dimensions of telecom services

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Abstract

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Technology-based service experiences – A study of the functional and emotional dimensions of telecom services

As technology invades the societies of millions of people around the world, more and more people are today having their daily lives affected by services such as Internet banking, e-commerce, telecom services, and ATM machines. Technical advances are providing new possibilities as well as solutions to many different customer needs. To be competitive in the marketplace, companies must manage and take advantage of the opportunities technology is providing.

One of the characteristics of services requiring a lot of technical integration is that they often involve little or no physical interaction between the customer and service provider during the service encounter. Under these circumstances, it is often hard for companies to control how customers experience their services, since customer responses are not directly revealed to the company. It is nevertheless important for service providers to understand how their present and potential customers experience their offerings since this knowledge provides the prerequisites of service value.

The present investigation aims to identify and analyze the dimensions that form the basis for the service experience and how it is linked to value in use. It further aims to study how users can contribute information regarding the service experience within the technology-based service field.

The reason for choosing the technological basis for this research is that it can be assumed, according to the above-mentioned arguments that the need exists within the technology-based service field for service providers to better be able to understand what their customers are experiencing. Also, these services are just undergoing their initiation phase when it comes to service research and there is much to be done when it comes to understanding technology-based service experiences.

The research is based on a literature study of service experiences, as well as an empirical study of the different functional and emotional dimensions of the technology-based service experience. Mobile phone users were invited to reveal the different aspects of their service experience as well as the value of the different dimensions of the service offerings generated by other users and by companies.

The contribution made by this study is a framework wherein the major influencing dimensions of a technology-based service experience are put together and describe how the service experience is linked to value in use. The study also presents results relating to how users can contribute valuable information regarding the service experience by means of co-creating during a service development process. Users were found to be better as regards creating services that satisfied several of the most requested functions and emotions, including functions that concerned cost savings, and emotions such as the feeling of security.

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Sara Sandström

Contents

Introduction

This study is a contribution concerning how the service experience is linked to user value. This first chapter will introduce the area under investigation and present both the aim of the study and the research questions.

Research presentation, questions and aim

Technology is invading the societies of millions of people around the world. You only have to go back about 15-20 years to find a time when almost no one had a PC in their home or a mobile phone in their pocket. Today, people have to deal with services such as Internet banking, e-commerce, telecom services, and ATM machines. Technical advances are bringing major possibilities and efficient solutions to many different customer requirements. To be competitive in the marketplace, companies must manage and take advantage of the opportunities that technology is providing.

Service scholars often claim that services are personnel-intensive, i.e. they demand extensive interaction between the customer and the service provider (Bitner et al., 2000). The interaction between the service provider and the customer makes it possible for staff to understand how they should act toward the individual customer and management can make use of customer feedback to improve service strategies. However, recent studies have come to the conclusion that these characteristics are not always valid for services (Vargo and Lusch, 2004b). For instance, a major consequence of technology's growing importance is a corresponding growth in services that call for customers to interact with technology-based systems rather than company personnel (Bitner et al., 2000; Dabholkar, 1996; Meuter et al., 2000). Hence, one of the characteristics of services which require a lot of technical integration is that they often involve little or no physical interaction between the customer and the service provider during the service encounter and, under these circumstances, it is often hard for companies to control how customers experience services since customer responses most of the time are not revealed to the company.

When it comes to research linked to the technology-based service experience, researchers have mainly been focusing on terms such as technology anxiety and attitudes towards technology (Meuter et al., 2003; Parasuraman et al., 2005). It is nevertheless important for service providers to understand how their present and potential customers experience their offerings since this knowledge provides the prerequisites of service value and value is what every company strives to deliver to its customers. Let us thus move back a step and consider the meaning of user value.

Lately, the theory of services has come to focus on value from the perspective of the user. On the basis of customer-perceived value, value is co-created and

judged by the user of a service (Normann, 1984; Ulaga, 2001; Vargo and Lusch, 2004a). The value in use logic has caused a revolution in service marketing research (Vargo and Lusch, 2004a). According to this logic, value is no longer embedded in predefined output, but experienced by the customer at the moment of consumption. It allows the customer to become an active partner and a contributor during the value creation process. However, services and customers are dissimilar, i.e. a service provided to one customer is seldom identical to the "same" service when provided to another customer (Grönroos, 2001), and even if it is, the service would be perceived and valued differently by another customer. It is thus clear that service providers face a challenging responsibility when trying to understand what customers experience when consuming a service and the ambition to create valuable service offerings could often be hard to manage.

The co-creation process of service delivery can serve as a mutual learning process between the company and the customer (Sinkula, 1994). However, since this learning process takes place in few technology-based services due to the lack of human interaction, it is important that service providers try to interact with their customers in alternative ways, e.g. through customer co-creation during the service development process. Today, many technology-based services are developed without customer co-creation (Alam and Perry, 2002; Menor et al., 2002). A service development method like this, based on service developers' personal beliefs and intuitions, may not achieve its full potential. Previous research has indicated that services developed through co-creation with users have been perceived as both more valuable and more original by users (Kristensson et al., 2002). This study implies that companies should make a serious attempt to involve their customers in the innovation process in order to understand what brings user value. Baron et al. (2006) also suggest that methods which focus on the creativity of the individual user should be used when trying to understand the technology-based service experience.

The present investigation aims to study the dimensions constituting the prerequisites of the service experience and how they are linked to value in use. It further aims to study how users can contribute information regarding the service experience within the technology-based service field. Two general research questions are in focus:

- What dimensions constitute the service experience and how is the service experience linked to value in use?
- How can users contribute information relating to their service experience, concerning both the functional and emotional dimensions (divided into three more specific research questions in Paper II)?

The first question is considered in Paper I and the second in Paper II. The intention is that this investigation may contribute to understanding how to create perceived user value in technology-based services by identifying the different

influencing functional and emotional dimensions of the service experience. The aim of this study is not to provide any final definitions, but to shed light on a phenomenon that needs to be researched further. It is my conviction that studying the experience of technology-based services is of some importance to both the academic field, when bringing new perspectives to the debate concerning the service experience or customer value, and to practitioners when creating valuable services or when considering new service development projects.

Structure of the thesis

The first part of the thesis introduces the reader to the area under investigation and presents a summary of appended papers. The main field of the study, regarding the customer's service experience, is introduced. The introduction is followed by a discussion about previous research into the service experience, the dimensions forming the basis for the experience, and how the service experience is linked to value in use. There is a focus on how functions as well as emotions play an important role in how customers experience services. The third part describes the present investigation and the method used. An experiment was conducted whereby mobile phone users were given the task of judging user-generated and company-generated mobile phone services as regards how these were able to fulfill different experience dimensions, i.e. functions and emotions. Earlier studies on user involvement in experiments are also discussed, as well as how problems and challenges encountered during the research process were dealt with. Finally, contributions, managerial implications and suggestions for future research are given.

Summary of appended papers

Below, there is a summary of the two appended papers. Both papers are included in the CuDIT (Customer Driven IT Development) II study, which is a further refinement of the CuDIT I study[1]. The CuDIT II study focuses on the functional and emotional dimensions of the technology-based service experience and how it is possible to involve customers in a co-creation process in order to gain more information about the experience-based value.

[1] For more information about the CuDIT I study, see *Studies regarding technology-based service experience* and linked references.

Paper I: Sandström, S., Edvardsson, B., Kristensson, P. & Magnusson, P. (Accepted for publication in Managing Service Quality, Vol. 18, No. 2). Value in use through service experience

Keywords – Service experience, Value in use, Technology-based services

Many companies fail to meet customer expectations with respect to the creation of customer value (van Riel and Lievens, 2004), probably because managers are not completely sure about what brings value to the customer, or how it is created. In the literature, concepts such as value and experience are often only vaguely defined. This paper strives to clarify the concept of the service experience and how it can be linked to user value. This paper aims to present a theoretical framework illustrating the total technology-based service experience, highlighting the importance of both the functional and the emotional dimensions, as well as how the service experience is linked to value in use. The research question is: What is a service experience and how is it linked to value in use? This paper takes a theoretical approach; a literature review is conducted in order to gather information about previous research into the key concept. The suggested framework is based on previous research. Hence, the contribution made by this paper is the framework that focuses on different dimensions of the service experience and value in use. The different dimensions of the framework are briefly presented below.

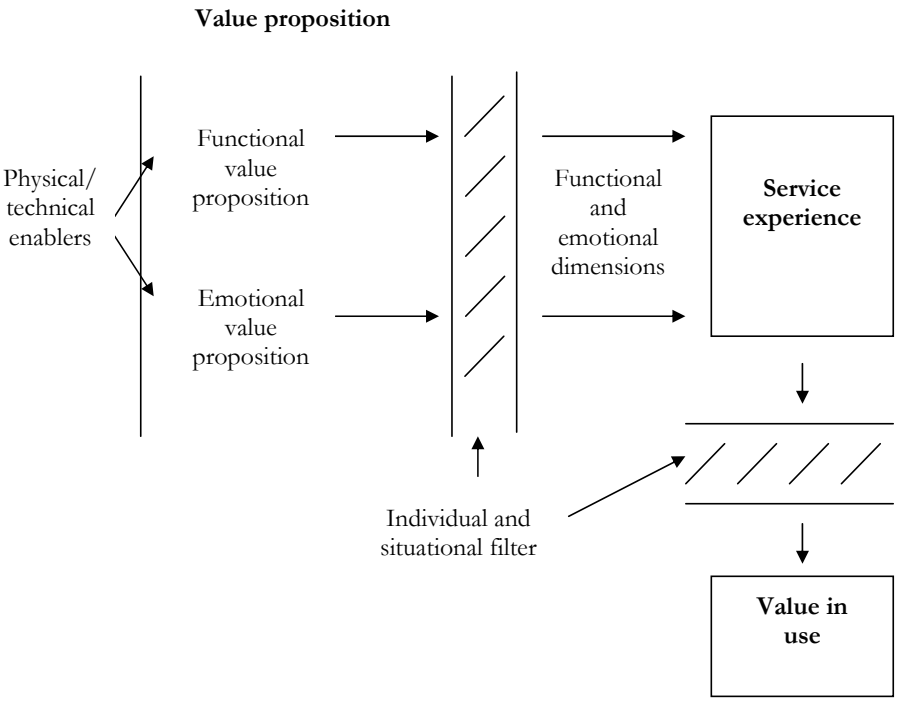

Figure 1: A framework outlining how the service experience is linked to value in use

Physical/technical enablers:

According to Bitner (1992) physical/technical enablers include physical signs, symbols, products and the infrastructure necessary to create the different attributes which influence the service experience. In respect to technology-based services, the enablers refer to the underlying systems via which the services are implemented in collaboration with the more physical products such as the mobile phone.

Value proposition:

The physical/technical enablers serve as a foundation for the actual value propositions made to the customer, i.e. the service functions available (for instance, the customer can make calls or take photos using his or her mobile phone) and the emotional value proposition (e.g. a physical symbol on a mobile phone in the form of a brand gives the customer a mental image, for instance an indication of what to expect from a service offering). Hence, the functional aspect of a value proposition includes what can be done using the physical/technical enablers available. The emotional value proposition provides the non-physical features and can include mental images, brand reputations and themes (Bitner, 1992; Normann, 2001; Rafaeli, 2004). Emotional value propositions are used to engineer the intended, favorable service experience and are viewed as expressions of company culture and strategy.

Individual and situational filter:

The service experience is unique to every individual customer and to every situation of service consumption. In this paper, the individual and situational filter refers to everything connected to the individual customer and to the situation the customer is in which affects the service experience, e.g. the demographic dimensions, the competence and skills of the customer, the surroundings of the customer, etc.

The service experience:

The following conceptualization is used in this paper: A service experience is the sum total of the functional and emotional dimensions of any kind of service. We assert that the service experience cannot be separated from the service and paid for separately. Note that the service provider can be a provider of either intangible services or tangible products. The service experience is always individual and unique to every single customer and every single occasion of consumption, and it assumes that the customer is an active co-creating part of the service consumption process.

Value in use:

Vargo and Lusch (2004a) introduced a new value perspective by coining the term *value in use* for the customer. Previously, value was regarded as a ratio of service quality to cost. In the new perspective, which has been adopted in this paper, value is realized when a service is used. Thus, customers are thus both the co-creators and judges of service value.

Paper II: Sandström, S., Magnusson, P. & Kristensson, P. (Submitted to European Journal of Innovation Management). Increased understanding of service experiences by involving users in service development

Keywords – Service experience, functions and emotions, Technology-based services, User involvement in service development

This paper aims to provide information relating to customer service experience, concerning both the functional and emotional dimensions. The research questions were as follows:

- Are functions and emotions perceived by the users as two entities that jointly generate a service experience in a technology-based service?
- Do users value functions more importantly than emotions (or vice versa) in technology-based services? This question is important since previous research often indicates that technology-based services primarily lead to functional dimensions.
- Do user-generated services and company-generated services generate the same type of service experience? By answering this question, it will be possible to examine whether or not users contribute different types of experience dimensions in a user involvement project.

An experimental approach is taken in this study. Users were tasked with evaluating user-generated and company-generated services. Each participant was given the assignment of studying the 22 service descriptions and reporting the functional and emotional experience dimensions. Three functional experience dimensions (time saving, cost reduction and learning) and fourteen emotional experience dimensions (joy, contentment, alleviation, surprise, entertainment, security, liking, connectedness (i.e. social connections with others), pride, flirting, affection, anxiety, irritation, embarrassment,) constituted the evaluation material. Then, the participants were asked to rate how important the functional and emotional telecom service experience dimensions are for them in general, using the same scale.

The experience dimensions most requested were; the feeling of security, cost reduction, and time saving. This study shows that users are to some extent better at coming up with services that generate value in use. According to the results of

this experiment, some of the most important required experience dimensions, functional dimensions, are better met by user-generated services. Cost reduction, an experience dimension that is functionally-oriented, was best served by the ideas generated by users. Users also generated significantly better ideas which stimulated security, the highest-ranked terminal experience dimension. It is also of interest to note that the services generated by companies were perceived as significantly better when it comes to services with the purpose of generating emotionally-oriented dimensions concerning pleasure and fun (i.e. entertainment, connectedness and joy).

The results of this study imply the adoption of a more advanced user focus during service development in order to be able to know what generates value for technology-based service users.

Previous theories regarding the service experience and the framing of the research problems

This part will provide the theoretical background to the research problems. Even though the service experience is studied in a technology-based service context in this thesis, an examination and discussion of the service experience in general are conducted. The reason for this is that there is little researched into the service experience of technology-based services explicitly and because theories regarding service experiences in general were largely considered applicable to the technology-based service field.

Value propositions from a service experience perspective

Customers do not buy goods or services: They buy offerings which render services which create value. (Gummesson, 1995, pp. 250-51)

The above statement implies two concerns. Firstly, it can be concluded that the often-discussed differences between tangible goods and intangible services in product and service research can be defined as offerings which in turn render services. Hence, the service is either a tangible good or a service in the traditional sense (Rust and Oliver, 1994). For example, a car can be seen as a means of transportation. Vargo and Lusch (2004b) also abandon the notion of differences between goods and services by stressing the lack of validation of the four service characteristics; intangibility, heterogeneity, perishability, and inseparability. This is also the perspective on service taken in this thesis.

The second part of the statement implies that customers buy service offerings which create value as perceived by the customer. Since the customer or user value of a service is realized when the service is consumed, users themselves become an active co-creating part of the value creation process (Vargo and Lusch, 2004a; Wikström, 1995). Vargo and Lusch (2004a) stress the key role of the customer in value creation. A value creation constellation means collaborating with and learning from customers as well as being adaptive to their individual and dynamic needs. An enterprise can only offer value propositions; the customer must determine value and participate in creating it via the consumption process. Value is not realized until customers take part in the activities that compose the service and make use of that service.

The service offering is composed of a mix of dimensions, e.g. products, product services, transaction services, brands, packages, prices, advertising, personal sales assistants, etc. Mixing and matching these various dimensions of service offerings into an appropriate integrated whole becomes a challenge for managers when developing successful services. In recent years, managers have become increasingly aware of the need to focus on more than the cognitive aspect of the service offering. Berry et al. (2002) suggest that firms must provide their

customers with satisfactory experiences in order to create user value. To implement such a strategy, firms must gain an understanding of the customer's journey – from the expectation he or she has before the experience occurs to the assessments he or she is likely to make when it is over. The result of this is that firms can no longer act autonomously, designing or developing services with little or no input from their customers. Customers must be an active part of the co-creation of value. Customers engage in the processes of defining as well as creating value. The co-created service experiences of customers become the very basis of value (Prahalad and Ramaswamy, 2004).

Vargo and Lusch's (2004a) logic of user value is adopted in this thesis, i.e. user value cannot be predefined in companies' service offerings prior to consumption, but has to be co-created and judged by the user. The value of a service is thus something individual to every single customer and the result of how that customer experiences the service. If value is the result of how the customer experiences the service, what then is a service experience? What constitutes the service experience and how is it linked to value in use?

The service experience in previous research

Over a period of a hundred years or so, the focus of the business economy has gone from being product-oriented, to service-oriented, and finally to being experience-oriented (Pine and Gilmore, 1998). Today, many successful companies adopt a holistic and customer-centric approach in their business dealings. In order to encourage people to share their ideas with firms and let them feel they are profitably investing time, a memorable experience has to be created. Several attempts have been made to provide an explanation of how a service experience might be characterized and what it consists of (Ariely and Zauberman, 2000; Arnould et al., 1999; Berry et al., 2002; Bitner, 1992; Gentile, 2005; Gupta and Vajic, 1999; Hirschman and Holbrook, 1982; Holbrook and Kuwahara, 1998; Holbrook and Hirschman, 1982; Mano and Oliver, 1993; Mathwick et al., 2001; O'Cass and Grace, 2004; Pine and Gilmore, 1998; Prahalad and Ramaswamy, 2004; Wakefield and Blodgett, 1999). Gupta and Vajic (1999) state that an experience occurs when a customer experience some sensation or knowledge acquisition resulting from some level of interaction with different dimensions of a context created by a service provider. Berry et al. (2006) argue that the experience is the service – a good customer experience is a good customer service.

In the marketing literature, experiences are often used to refer to a certain group of services including travel, music, the theatre, restaurants, hotels and the arts. The core of these services is related to hedonic consumption (Hirschman and Holbrook, 1982): the visual images, tactile impressions and sounds that create the individual experiences and emotive aspects of the service experience. To give an example in line with this perspective on the consumption experience, both

Holyfield (1999) and Arnould et al. (1999) studied the adventure experience of river rafting. Babin et al. (1994) also distinguish between utilitarian (task-related and rational) and hedonic (personal and emotional) value. They stress that value has to recognize both a utilitarian experience dimension resulting from the conscious pursuit of an intended consequence, i.e. getting something, and a hedonic experience dimension which reflects the act of doing it because of the enjoyment of doing it. The service experience, according to this view, thus consists of the emotions triggered by the service. Another similar way of studying consumption experiences is the one that Pine and Gilmore (1998) and Arnould and Price (1993) focus on. Pine and Gilmore (1998) argue that the product or service should act as a stage for the customer experience. The experience, in this context, is something which is separated from the product or service and which provides the customer with extraordinary value. Businesses have to design experiences that customers are willing to pay more for: such as, for example, when you can sing karaoke in a taxi. This staged offering is an "extraordinary" (Arnould and Price, 1993) experience here and customers are thus willing to pay more than they would for an ordinary taxi. Still, experiences are viewed here as something resulting from the emotional perception of the service. The utilitarian, or functional, part of the service is considered the core service, like the transportation part of the taxi ride, and it serves as a stage for the "fun" in being able to sing karaoke in the car.

However, there are several other ways of conceptualizing the service experience concept, which even include even the functional or utilitarian part of the service experience. One example is Gentile (2005), which takes its inspiration from psychologist Pinker's (1997) description of the experience in the *modularity of mind* and relates it, to the service experience. He categorizes the service experience into six different kinds of experiences, thus: *Sensorial Experience* – an experience which involves sensory (or multisensory) stimulations and the physical body, *Emotional Experience* – an experience which involves one's affective system through the generation of moods, feelings, emotions, *Cognitive Experience* – an experience connected with thinking or conscious mental processes, *Pragmatic Experience* – an experience arising from the practical act of doing something, *Lifestyle Experience* – an experience that emanates from the affirmation of the system of values and the beliefs of the person often through the adoption of a lifestyle and behaviors, and *Relational Experience* – an experience that involves the person and, beyond, his or her social context and his or her relationship with other people or also with his or her ideal self.

The sensorial part of the service experience is often recalled as the physical or tangible factors (Aubert-Gamet, 1997; Bitner, 1992; Berry, 2002; Edvardsson et al., 2005; Hirschman and Holbrook, 1982; Normann, 2001; Parasuraman et al., 2005; Rafaeli and Vilnai-Yavetz, 2004; Venkatesh, 1999; Wakefield and Blodgett, 1999). Bitner (1992) labels the physical surroundings of a service setting as a *servicescape*. The word *servicescape* is a combination of *services* and *landscape*, and includes ambient conditions (temperature, air quality and noise), space and function (layout, equipment and furnishings), and signs and symbols (such as

signage, style of décor, and personal artifacts). This also concerns the infrastructure necessary to create the physical attributes having a direct or indirect influence on the service experience.

Berry et al. (2006), Carbon and Haeckel (1994) and Pullman and Gross (2004) discuss the importance of physical surrounding when distinguishing between physical context (mechanic and functional clues (Berry et al., 2006; Carbon and Haeckel, 1994)) and relational context (humanic clues (Berry et al., 2006; Carbon and Haeckel, 1994)). Functional clues relate to the technical quality (Grönroos, 1983) of the offering, the "what" of the service experience. Functional clues indicate whether the different parts of the service are working as they are supposed to. The mechanic clues are the sensory presentation of the service, very similar to the servicescape. This includes the sights, smells, sounds, tastes, and textures of the service experience. Finally, humanic clues emerge from the behavior and appearance of the service providers and constitute the "how" of the service. This includes the provider's dress, voice, choice of words, etc. The sum total of all the clues composes the service experience by influencing the customers' thought, feelings, and behaviors. The service experience is thus anything the customer perceives through its presence or absence. Berry et al. (2006) also claim that functional clues are the basis for the cognitive perception of a service while the mechanic and humanic clues are the basis for the emotional perception.

Mathwick et al., (2001) define a tool that characterizes experienced-based value by means of what they call the EVS (experiential value scale), which takes into account both the functional and emotional experience dimensions. The EVS consists of intrinsic and extrinsic value on the x-axis and active and reactive value on the y-axis. Extrinsic value denotes the benefits you get from consuming the service while intrinsic value denotes the pleasure you get by experiencing the consumption itself, apart from any other consequences that may result from the consumption. The active and reactive value scale describes how active the customer is during the consumption process. Hence, this scale takes into account the functional and the emotional experience dimensions, as well as the co-creation part of the customer. This perspective on the service experience has many similarities with how the service experience is looked upon in this thesis. However, there is one important difference. The EVS scale considers value and experience to be the same thing, which is not the case in this thesis. Just how value is linked to the service experience will be discussed later on, but first let us look at an illustration that makes it clearer how the service experience is regarded in this thesis.

Example: "A mobile phone service provider is proposing an MP3 service in its latest mobile phone. As long as the owner of the phone doesn't know the MP3 service exists, it will not be a service experience. However, merely being aware of the MP3 service in the phone can be enough to create a service experience of an emotional nature by offering the owner of the phone a feeling of pride or satisfaction. (However, the value perceived via the knowledge of owning a phone that is capable of playing MP3 files is not exactly the same value perceived when making use of the MP3 service.) This could be compared to the feeling of pride when you have a sports car in your garage, showing it off to others and enjoying the status it brings. When the owner of the phone uses the MP3 service, he or she will experience the service by enjoying the music, and save money because he/she will not have to buy a dedicated MP3 player. How the MP3 service is experienced will differ with the user's situation; consider a quiet buss versus a crowded and noisy space. It will also differ with the person using the service, knowledge of how to use the MP3 service, or access to music downloads for the phone. Hence, the service experience is unique to every individual user and situation. The service provider offers functional and emotional propositions and depending on the user and situation, the service experience will be quite different. Every sensation or knowledge acquisition that the user connects to the MP3 service will be a part of the service experience."

Hence, in line with Berry et al. (2006) and Carbon and Haeckel (1994), the service experience is the sum total of all the clues composing the service experience by means of influencing the customers' thoughts, feelings, and behaviors. The service experience is anything the customer perceives by means of its presence or absence.

This example illustrates the impact of physical surroundings when using a service. It could be assumed that the servicescape (Bitner, 1992), in the technology-based context, is often hard for companies to exercise control over, since the service experiences are perceived in many different environments. The example also shows how both functional and emotional dimensions can play an important role during the creation of the prerequisites for satisfying service experiences. Consequently, it might now be appropriate to clarify the two different, but closely connected, experience outcome dimensions.

Functions are sometimes classified as the technical quality or the "what" of the service (Grönroos, 1983). According to this thesis, the function of a service can be defined as the benefits of a service, e.g. time saving, cost reduction, and learning (Kristensson et al., 2002), since these dimensions are "what" a customer

achieves by using the service. Note the difference between the functional dimensions of a service, according to this thesis, and the functional quality and similarity between the functional dimensions of a service and its technical quality in the depiction of Grönroos (1983). Exactly how the term functional dimension is used in this thesis is more closely related to the conceptualization of functional clues conducted by Berry et al. (2006) and Carbon and Haeckel (1994). These dimensions are most often measurable (Zeithaml, 1977). For example, how much time or money will the customer save by using this service? The functional appropriateness of a service is the key to success in the market place (McDonagh-Philip and Lebbon, 2000).

Emotions consist of "the affective responses to one's perceptions of the series of attributes that compose a product or service performance" (Dubé and Mennon, 2000, p. 288). Such emotions are usually intentional (i.e. they have an object or a referent) and are different to the concept of mood, which is a generalized state induced by a variety of factors, and is usually diffused and non-intentional (Bagozzi et al., 1999). Emotions and mood (and attitudes) are all dimensions of a general category of mental feeling processes, referred to as "affect" (Bagozzi et al., 1999). The emotional dimension of the satisfaction assessment of a service is thus independent of the overall affective sense present in the respondent at the time the service was provided (deRuyter and Bloemer, 1998). Consumption emotions have been conceptualized either as taxonomy of discrete primary emotions such as joy, interest, sadness and happiness (Izard, 1977; Richins, 1997) or as a limited number of basic dimensions such as pleasure, arousal, or positive-negative affects (Russell, 1980; Watson et al., 1988). Diener et al. (1995) identify six basic emotion groups: love, joy, fear, anger, shame, and sadness using four emotion words to represent each group, for example love – *affection, love, caring, fondness*, joy – *joy, happiness, contentment, pride*, etc.

The functional dimensions have received more attention due to their tangibility and the large amount of capital associated with the service delivery process. Hence, to fully leverage experience as part of a value proposition, organizations must manage the emotional dimension of experiences with the same amount of rigor they apply to the management of service functionality. An emotional reaction is part of a qualitative and favorable experience (Cronin, 2003; Edvardsson et al., 2005; Sherry, 1998). Functional qualities are not enough!

Studies regarding the technology-based service experience

Despite the interest shown by practitioners and scholars in the technology-based service field as regards understanding the impact of new information and communications technologies, few efforts have been made to explain and obtain a more comprehensible picture of it (Grewal et al., 2001). The examples below

are some of the studies of the technology-based service experience which have been carried out during recent years.

Baron et al. (2006) contributes to our understanding of technology-based service-usage. They stress that the TAM (Technology Acceptance Model) should be called into question in technology-based services where the customer plays an active role in the co-creation of value. This also gives weight to the emotional aspects that accompany the use of a technology-based service. However, almost all TAM studies have adopted a quantitative approach to measuring the effects of behavioral beliefs on the users' attitudes toward technology. The TAM has received a lot of academic research attention, as well as a lot of criticism. In particular, statistical-modeling-based TAM developments ignore the paradoxes of technology acceptance faced by individuals (Mick and Fournier, 1998). Customers often have mixed feelings about technological services which create paradoxes. For example: technology can facilitate both less and more time being spent on activities, e.g. Internet bookings which can be achieved quickly but require greater amounts of information gathering. Another example is the fact that technology can facilitate human togetherness as well as lead to human isolation, e.g. TV events in public spaces vis-à-vis watching TV at home. Baron et al. (2006) suggest that more qualitative methods focusing on the creativity of the individual user should be used when trying to understand the technology-based service experience, including the emotional and socially-related part of the service experience.

Another study concerning mobile phone services was conducted by Van der Wal et al. (2002). This study reveals which dimensions of service quality, according to the SERVQUAL scale, are important to customers. Van der Wal et al. (2002) stress the importance of "responsiveness" on the part of the service provider in the form of helping and providing the requested service on time, as well as the "assurance" of the service provider in terms of being knowledgeable and inspiring trust in its customers.

The final example of research concerning the technology-based service experience is the CuDIT I (Customer Driven IT Development) study. The CuDIT I study was an experimental study whose main aim was to examine the benefits of involving customers during an innovation project, i.e. the actual value of user involvement. Could users generate better ideas for service experiences than the service developers of telecom companies? The CuDIT I study investigated users' possibilities of generating original, valuable, and realizable service ideas. Advanced users, ordinary users, and professional product developers were given the task of creating ideas for future mobile phone service experiences. The study also aimed to create the foundation for a new experimental method which was used to compare the characteristics of new services suggested by users with those of professional developers. One principle used in the design was to emulate authentic conditions and a real world test which refers to one important research question – Are users able to come up with better services? The results showed that ordinary users generated

significantly more original and valuable ideas than did professional developers and advanced users, with the professional developers and advanced users creating more easily realizable ideas (Kristensson et al., 2002; Magnusson et al., 2003).

Hence, some studies concerning the technology-based service experience have been undertaken in respect of the functional and emotional dimensions. However, research relating to the service experience and evaluation of the service experience is only undergoing its initiation phase and much more remains to be explored.

Linking technology-based service experience to value in use

Although the service experience is a criterion for evaluating and understanding service performance (McKnight and Sechrest, 2003), relatively little attention has been devoted to understanding the service experience and its influence on customer perceptions of service value (O'Neill and Palmer, 2003). Some researchers have tried to establish both the functional and the emotional importance of the value concept. For example, Oliver (1996) stresses the fact that satisfaction is not a simple cognitive measure but a complete affective state. In fact, the concept of customer value goes back to Adam Smith's classical work dating from the 18th century wherein he contended that the customer's perceived value was decided by the sum of the offering's functionality and the emotions experienced when using it. This perspective on value is now enjoying a renaissance and, in line with Vargo and Lusch's (2004a) statement that value is something that is perceived and evaluated at the moment of consumption, this is also the perspective used in this thesis. Hence, the following statement is made with regard to the link between the service experience and value in use. Value in use is the evaluation of the service experience, i.e. the individual judgment regarding the sum total of all functional and emotional experience dimensions. Value cannot be predefined by the service provider, but is defined by the user of a service during consumption.

Note that value is not the same thing as the sum total of all the functional and emotional dimensions, but the *evaluation* of these. For example, even if the experience of playing a game on a mobile phone is much the same for two different users, one user might think it important to have the possibility to play while the other does not.

A study conducted by Orsingher and Marzocchi (2003) investigates the hierarchical structure of the service experience dimensions in relation to customer-perceived value. Orsingher and Marzocchi (2003) stress the overall level of satisfaction when consequences and values are added to the service attributes. A primary assumption made in their study is that satisfactory service experiences are organized in the customer's mind in the form of hierarchical

cognitive networks with satisfaction dimensions being stored at different levels of abstraction. The different dimensions of the service experience are thus linked to different consequences and values. The results showed that customers primarily strive to maximize an internal state of comfort as well as save time and money. This could be offered by the service provider via front-line employee kindness and appropriate conveniences that are dependent on the service offering etc.

Summarizing the above argumentation regarding the link between service experience and value in use, a company cannot create anything of value without the co-creating individuals (Prahalad and Ramaswamy, 2000); the company can only create value propositions consisting of one functional part, i.e. including what it is possible to do when using the service, and one emotional part which provides the non-physical features and can include mental images, brand reputation, and themes (Bitner, 1992; Normann, 2001; Rafaeli and Vilnai-Yavetz, 2004). The emotional value propositions are used to engineer the intended, favorable service experience and are viewed as expressions of company culture and strategy. However, as a foundation for the actual value propositions, or service offering, there has to be physical/technical products or attributes that are dimensions necessary for creating the conditions to provide a service experience (Bitner, 1992). Physical/technical enablers include physical signs, symbols, products, and the infrastructure necessary to create the different attributes that influence the service experience.

The co-creation of a service experience is conducted by the individual user of the service. There are, as previously mentioned, dimensions in a value co-creation process that are personal to every individual customer and are thus dependent on the situation in which the customer acts. We refer to these dimensions as the individual and situational filter. In this thesis, the individual and situational filter refers to everything connected to the individual customer and the situation the customer is in which affects the service experience. The individual and situational filter has an effect on how the customer of a service experiences a service offering as well as how the customer evaluates his or her service experience.

Hence, the service provider makes a value proposition in the form of one functional and one emotional part; every individual customer uses and experiences it and then makes an evaluation in the form of value in use.

Method

This chapter provides a background as to why the experiment which included user involvement was chosen as the method of understanding service experiences, as well as how methodological research problems were treated.

The background of the choice of method

Even though research has shown that new products and services must accurately respond to customer needs if they are to succeed in the marketplace, it is often a very costly matter for firms to genuinely understand their customers' needs. Information about needs is very complex, and conventional market research techniques often only skim the surface. The task of understanding customer needs is growing even more difficult as firms are increasingly striving to learn about and serve the unique needs of each individual customer, and as the pace of change with regard to markets and customer needs is growing faster (von Hippel and Katz, 2002). A study based on a large sample of new manufactured goods and services (Griffin, 1997) showed that the overall rate of success for newly commercialized products has remained stable at less than 60%, compared to earlier studies by Page (1993). Several review studies have concluded that, to develop successful new products or services, a firm must acquire an in-depth understanding of its customers' needs (Brown and Eisenhardt, 1995; Craig and Hart, 1992; de Brentani, 1995; de Brentani and Cooper, 1992; Edgett, 1994), which requires customer involvement during the development process.

The contribution made by customers in order to understand underlying human needs and the service experience

The successful development of new products and services is dependent on knowledge of underlying human needs and insights like these may only have light shed on them if company-customer relations become closer. Interaction and communication with customers is important because those are the means by which companies derive new and valuable ideas for new products or services (Kristensson et al., 2002). The ability to create a stream of new services can be a sustainable competitive advantage for companies in almost any industry. It appears that there is pressure on many service firms to interact with potential customers and obtain input from them during new service development programs (Ennew and Blinks, 1996; Kelly, 1992). Indeed, several research streams have provided insights into the importance of customer input and customer manufacturer interactions when it comes to facilitating marketing objectives (Alam, 2002; Gruner and Homburg, 2000; von Hippel, 1978). A firm's

focus on human resources, teamwork, and customer collaboration is one of the most important factors of new service success.

Customer involvement can sometimes be perceived as problematic. To some extent customers may not be aware of their needs or be able to articulate them. Coates (1997) distinguishes between the idea of the stereotype (what a typical product is currently like) and the ideal (imagining what an object should be like). New designs aim to come reasonably close to the ideal, while not leaving the perception of the stereotype (standard) too far behind. Coates (1997) criticizes the use of stereotypes in comparison to ideals. Stereotypes are what participants know most about and are able to relate to. Ideals are fuzzy as they vary between people and are not necessarily conscious. Techniques have been employed by authors to retrieve peoples' ideals rather than their stereotypes in order to overcome this shortcoming. A methodological way to trigger novel ideas was to encourage people to consider the "future". By assisting customers in suspending reality, new ideas and wishes may emerge. People begin to think more creatively and disclose their wishes and ideals more freely (Bruseberg and McDonagh-Philip, 2001). Bennett and Cooper (1981) also question the usefulness of customers as a source of input during new product development, mainly because customer perception is limited to what customers can currently relate to because of the customers' ability to express and verbalize their needs is limited, since they do not know what is technically feasible.

There are, however, several benefits from involving customers in the service development process. Involving customers in the innovation process can serve as a means of gaining important knowledge of them (Magnusson et al., 2003). Customer involvement can form the basis for a mutual learning process whereby the developing company, together with its prospective customers, explores a new technology, for instance. Sinkula (1994) argues that collaborations with customers contribute to mutual and iterative learning about applications for new technologies. Nonaka and Takeuchi (1995) stress that tacit knowledge, i.e. knowledge that can be hard to express explicitly, can be gained through the sharing of experiences. If a company's customers are willing to share their experiences and ideas for future services, as well as what service experiences they wish to realize through the service ideas, then important information about what creates value for those customers could be illuminated.

I am of the opinion that it is worth attempting to involve users in a service development process since earlier studies of customer involvement have also shown positive results. One of these is the CuDIT I study which was carried out some years ago and which serves as a research basis for this study.

Methodological problems and solutions

Two research questions have been studied in this thesis. As mentioned in the introduction, the first question relating to what constitutes a technology-based service experience and how the service experience is linked to value in use is dealt with in Paper I. The second paper is based on the research question concerning how users can contribute information relating to the technology-based service experience, with regard to both the functional and emotional dimensions.

Paper I – The literature review

The first paper is based on a literature review. The focus here is on how previous research has dealt with the dimensions composing the service experience and how they are linked to value. This information gathered from the literature study has then been compiled within a framework. This method was chosen since there seems to be a need to obtain an overview of previous theories on service experience and the different ways of conceptualizing the service experience.

The major problem I faced during the literature review process primarily concerned the different ways of dealing with the experience concept in previous research. When searching for articles concerning the service/product experience and service/product perceptions, the bulk of the results did not deal with the subject of this thesis area at all. Another problem was the numerous articles which did not include definitions in the search, but dealt with the same area anyway. For example, some articles concerned crowding in retail stores or physical surroundings and those are thus of great interest to this research. One solution to this problem was to search the reference lists in interesting articles. However, since this problem occurred early on during the research process, a considerable amount of time was spent on conducting a serious and in-depth search for information.

Paper II – The experimental study

The empirical research was part of the CuDIT II study, which in turn is based on an previous user involvement study conducted some years ago, the CuDIT I study (Kristensson et al., 2002; Magnusson et al., 2003; Matthing et al., 2004). The CuDIT II study was carried out in collaboration with two researchers – Per Kristensson, who holds a PhD in Psychology and Peter Magnusson, who holds a PhD in Business Administration, and who both work at the Service Research Center at Karlstad University. The research was financed by the Jan Wallander and Tom Hedelius foundation.

The empirical experiment was conducted at the Service Research Center at Karlstad University and includes a part whereby users had to come up with new service ideas for mobile phones, and a part whereby a jury consisting of another user group linked the service ideas to different functions and emotions.

The purpose of the experiment is to discover or uncover phenomena in real life. The need for experiments within science emphasizes the fact that it is not possible to simply lie back and passively study how things work in real life (Danermark et al., 2003). The experiment as a research method, unlike other methods such as observations and surveys, is viewed as one of the most efficient ways to determine causation, even if true experiments in natural settings are even more efficient than experiments in laboratory settings. However, experiments in laboratory settings, like the one used in this study, provide an important alternative to true experiments as they provide a comparison between two or more different variables in a more naturalistic way than in more common research surveys (Shaughnessy et al., 2000). The point is that the researcher has to manipulate the experiment surrounding and produce the research result. One weakness of the experimental research approach is that it strengthens the internal validity at the expense of the external validity. However, as the majority of studies carried out within product development tend to be naturalistic and exposed to internal validity threats, studies like the present one whereby crucial variables are analyzed in controlled settings ought to play an important role. Furthermore, Kristensson et al. (2002) using a more naturalistic approach (quasi-experiments) also produced results very similar to the experimental findings reported here. That study and the present one constitute an implicit methods triangulation, which supports the validity of both studies.

Collection and measurement of the material

The user-involved service ideas were chosen by undertaking an empirical study in which 34 individuals (20 men and 14 women) participated. The participants were to generate mobile phone services that they personally would like to be offered in the marketplace in the future. One might criticize the use of students as surrogates for customers but there are several studies indicating that this procedure is legitimate when the aim is to secure internal validity (Ashton and Kramer, 1980).

The ideas generated by these 34 users were judged by a panel of three professionals from the telecom industry. This panel of professionals judged the ideas on a scale ranging from one to ten according to the originality and user value of the ideas. Altogether 145 ideas were generated and the eleven which scored highest were selected. The ideas selected all scored eight or higher either in terms of originality or user value. During the assessment the judges used the Consensual Assessment Technique (CAT) introduced by Amabile (1996). The CAT was used in order to evaluate the user-involved service ideas. The CAT is a technique whereby expert judges assess and measure the merit of creative

performance. The rationale behind the CAT is that two or more people, with assumed expertise in a given domain, are to judge the creative merit of a certain contribution. The judges are to make their assessments on their own, independently of each other. Afterwards the judges' assessments are compared; if there is consensus regarding the creative value and merit of a particular product or service, then the judges' assessments will appear to be a reliable and valid verdict.

This method could however be called into question since the assumption that the judges are experts is one criterion and one underlying assumption in this thesis is that companies might miss some valuable information when not involving users in the development process. When letting experts evaluate and uncover the "best" user ideas, could this perhaps be the same thing as having professionals develop the service ideas? Will important information be rendered invisible again when letting the filter of expertise come between creativity and material results? One might ask oneself: Why not let users evaluate user ideas? However, earlier tests (Amabile, 1996) have shown that there is no difference between how experts and users perceive value and originality. Consequently, the eleven user ideas chosen are assumed to be the most original and valuable to the user jury as well.

In order to be able to compare the functional and emotional benefits of user-involved ideas with ideas generated by companies, we had to select service ideas from both sources. Thus, we randomly chose eleven recently-launched and strongly-marketed services (i.e. descriptions of services) from various mobile telecom service providers using websites on the Internet. However, one might perhaps have opinions about whether or not these ideas were actually unknown to the participants who were supposed to be evaluating the service ideas. However, the participants did not show any signs of recognizing the company-generated service ideas.

The evaluation process

There were 17 individuals (nine men and eight women) who participated in the evaluation. All the participants were students who were recruited on the campus area and who joined voluntarily without receiving any course credits.

Each participant was told to study the 22 ideas that had been generated by other users or generated by companies (eleven of each) and then score them as regards the different functional and emotional benefits. Subsequently, the participants were told to score just how important the functional and emotional telecom service benefits are to them personally, in general, on the same scale. Since both the user-generated and company-generated service ideas were perceived in the same way by the participants, the intention was that it would not be a problem to compare the user-generated ideas (i.e. subjective presumed experiences) with the company-generated ideas (i.e. services already being provided). In fact, the

company-generated ideas are also the presumed experiences of professional service developers.

No other difficulties were observed during the evaluation process, explained in more detail in Paper II.

Contributions, managerial implications and suggestions for future research

This chapter is divided into two parts, "Contributions" and "Managerial implications and suggestions for future research". The contributions are discussed in accordance with the results of the experiment, but also in relation to the theoretical frame of reference and findings of Paper I. Managerial implications and suggestions for future research are given since this study is to be seen as a small step during an early phase of the exploration of the service experience in the technology-based service setting.

Contributions

The present research investigation has aimed to identify and analyze which dimensions constitute the service experience and how the service experience is linked to value in use, as well as how users can contribute information about the service experience, with regard to both the functional and emotional dimensions.

Based on the literature study undertaken in Paper I, and the empirical experiment adopted in Paper II, two major contributions can be described. The first concerns the framework outlining how the service experience is linked to value in use, also constructed in Paper I. The second contribution, based on the results of Paper II, reveals the importance of involving users in the service development process in order to gain a deeper understanding of the technology-based experience. These two contributions will be discussed in more detail below.

The framework outlining how the service experience is linked to value in use

The framework contributes toward understanding value creation through the service experience. The framework combines several service experience dimensions which have previously been studied separately. This study makes an attempt to bring them together and link them to value in use. This study also sets the service experience in a technology-based service context, which has only been covered by a limited amount of published research materials previously. However, I am of the opinion that the perspective of the service experience framework is also applicable to other types of service settings.

One of the results emerging from this study is that offerings such as technology-based services evidently provide the user with both a functional and an emotional experience. Technology-based services have mainly been characterized by functional dimensions in earlier studies. The experiment has also shown that users perceive clear differences between functional and

emotional-related experience dimensions in technology-based services. It is not just experiences relating to travel, music, etc., known as hedonic services (Hirschman and Holbrook, 1982) that create individual experiences which include emotive aspects.

To gain a deeper understanding of the technology-based service experience, Baron et al., (2006) have suggested a method focusing on the creativity of the user in order to detect the emotions connected to the technology-based service experience. It was my intention to do so in this study, in order to capture both the functional and the emotional experience dimensions of the technology-based service experience. However, the results of the experiment show that users tend to both prefer and generate functionally-related technology-based services. However, this result was to some extent both new and surprising since it was expected that by using a method whereby the individual user is given the opportunity to be a part of service creation, more emotionally-related dimensions would be in focus. One possible reason for this result could be explained by Berry et al. (2006) who claim that functional clues (i.e. indicators of whether or not the different parts of the service are working as they are supposed to) form the basis for the cognitive perception of a service (referred to as functional dimensions in this thesis) and the mechanic (i.e. the sensory presentation of the service) and humanic clues (i.e. the behavior and appearance of service providers) form the basis for the emotional perception. Even if Berry et al.'s (2006) perspective on the service experience is different from the characteristics argued for in this thesis, the empirical findings in this thesis somehow support the logic of Berry et al. (2006). If humanic clues result in emotional perception, one could envision the possibility that a lack of humanic clues might result in less focus being put on the emotional perception, as with technology-based services, which was the case in this study.

In summary, the framework outlining how the service experience is linked to value in use in technology-based services is a contribution in itself with regard to the debate about service value. The study conducted by Orsingher and Marzocchi (2003) claimed that the different dimensions of the service experience are linked to different consequences and values. The conclusions drawn from the literature review conducted in Paper I support this statement.

Several attempts have been made to explain the service experience, but few have focused on the entire journey from the value proposition to the service experience, and finally the perceived value of the user. This study provides a new framework which includes several of the connected dimensions that have previously been studied in isolation.

The importance of involving users in a service development process in order to gain a deeper understanding of the technology-based experience

This study also reveals the importance of co-creating services with customers in a technology-based service field. According to this study, users of mobile phone services were better at creating the desired service experiences, taking into account both the security and cost reduction when companies focus on pleasure and fun. One could ask oneself why users are better at creating more desired service experiences. Does it have to do with trends within technology-based services which make service providers copy each other's services instead of spending time on developing new and original ones; or could it be the fact that it costs money and time to co-create with users? Maybe, it could be emphasized that deeper skills regarding technology could prevent professional service developers from creating more unique service offerings. It is thus the opinion of the author that learning together with one's customers, comes what is called corporate intelligence and with that comes successful competitive advantage in the marketplace. Firms can no longer act autonomously, as Prahalad and Ramaswamy (2004) state, designing services with little or no input from their customers. Customers must play an active part in co-creating value.

Overall, the users were found to be better at creating services that were of a functional nature. Companies, on the other hand, were better at delivering service experiences of a more emotional nature.

Additionally, the study conducted by Orsingher and Marzocchi (2003) correlates positively with this one. These authors stress that customers primarily strive toward maximizing an internal state of comfort as well as saving time and money. This was also the result of the experiment on the mobile phone users in the CuDIT II study.

Managerial implications and suggestions for future research

The framework outlining the service experience linked to value in use could serve as a tool for managers when creating service offerings. The framework focuses on different aspects of the service; the prerequisites of the value proposition, the different outcome dimensions of the service experience, and how value is linked to the service experience. In particular, the framework takes both the functional and emotional aspects of the service experience into consideration. Functional and emotional experience dimensions are both equally important to bear in mind when creating successful new service offerings. Consequently, this framework may hopefully be able to offer service providers increased insight into how their customers experience their services and what they want the service to achieve. Perhaps this would generate new and improved services which meet user requirements in a new and more efficient way.

However, this study is lacking in terms of reliability, in some way, as it is only supported by one empirical study. Future empirical studies of the technology-based service experience and how it is linked to value are called for. Additionally, research into user involvement and how to achieve tacit knowledge of the service experience could give authority to this study. Even studies in other areas besides the field currently being studied, i.e. technology-based services, could create a broader base of knowledge of the service experience.

It is the belief of the author that an experimental method could be used more frequently in both marketing and service development research, since this will provide in-depth understanding even though it is a quantitative method. This study verifies the experimental method as a useful instrument for gleaning information about the tacit knowledge of the customers. The participants in the experiment were able to articulate how they perceived the services generated both by other users and by professional service developers concerning the functional and emotional dimensions of the services as well as what they considered to be important experience dimensions regarding technology-based services. This resulted in comprehensive information about how the users experienced technology-based services.

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Appendix – Appended papers

I. Sandström, S., Edvardsson, B., Kristensson, P. & Magnusson, P. (2008), "Value in use through service experience", Accepted for publication in *Managing Service Quality*, Vol. 18, No. 2.

II. Sandström, S., Magnusson, P. & Kristensson, P. (2008), "Increased understanding of service experience through involving users", submitted to *European Journal of Innovation Management*.

Technology-based service experiences

As technology invades the societies of millions of people around the world, more and more people are today having their daily lives affected by services such as Internet banking, e-commerce, telecom services, and ATM machines. Technical advances are providing new possibilities as well as solutions to many different customer needs. To be competitive in the marketplace, companies must manage and take advantage of the opportunities technology is providing.

One of the characteristics of services requiring a lot of technical integration is that they often involve little or no physical interaction between the customer and service provider during the service encounter. Under these circumstances, it is often hard for companies to control how customers experience their services, since customer responses are not directly revealed to the company. It is nevertheless important for service providers to understand how their present and potential customers experience their offerings since this knowledge provides the prerequisites of service value.

The present investigation aims to identify and analyze the dimensions that form the basis for the service experience and how it is linked to value in use. It further aims to study how users can contribute information regarding the service experience within the technology-based service field. The reason for choosing the technological basis for this research is that it can be assumed, according to the above-mentioned arguments that the need exists within the technology-based service field for service providers to better be able to understand what their customers are experiencing. Also, these services are just undergoing their initiation phase when it comes to service research and there is much to be done when it comes to understanding technology-based service experiences.

The research is based on a literature study of service experiences, as well as an empirical study of the different functional and emotional dimensions of the technology-based service experience. Mobile phone users were invited to reveal the different aspects of their service experience as well as the value of the different dimensions of the service offerings generated by other users and by companies.

The contribution made by this study is a framework wherein the major influencing dimensions of a technology-based service experience are put together and describe how the service experience is linked to value in use. The study also presents results relating to how users can contribute valuable information regarding the service experience by means of co-creating during a service development process. Users were found to be better as regards creating services that satisfied several of the most requested functions and emotions, including functions that concerned cost savings, and emotions such as the feeling of security.

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