

Chapter 2

Conceptual Foundations

2.1 Objective and Methodology

"The lesson for retailers in this new experiential shopping world is simple: Make sure you define the store in terms of the experiences you deliver to the consumer, not the thing that you sell" [Danziger 2006, p. 257].

The goal of this chapter is to introduce the concept of service fascination as well as its underlying research fields and their terminologies. Based on a detailed literature review, an exposition of current research gaps and challenges provides the foundation for the research presented. As stated before, this thesis focuses on technology-based self-service systems to arouse positive customer emotions and satisfaction with the service provided which in turn differentiates the supplying company from its competitors. Zagel et al. [2014b, p. 180] define service fascination as follows:

Service Fascination

can be described as an extraordinary positive emotional state arising through conscious and subconscious effects of self-service technology use. The goal is to apply innovative technologies not only to provide better services, but to fulfill the affective, cognitive, behavioral, sensory, and social experience dimensions, leading to active positive promotion and an innovative perception of the service provider.

Based on this definition the concept includes aspects of three underlying fields of research (cf. Figure 2.1): services science, human-computer interaction, and customer experience management. These provide the theoretical foundations, including definitions and a variety of engineering and evaluation methods.

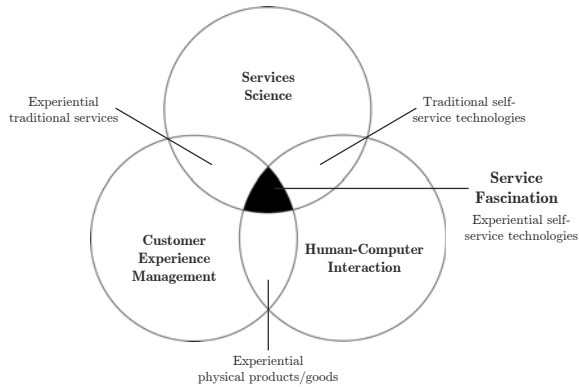


Figure 2.1 – Service Fascination - Classification

Services, and especially self-services, act as the primary object of investigation in the research presented. They are explored within the services science discipline that focuses on designing, engineering, and evaluating new, intangible service concepts instead of dealing with physical goods. The goal of the service fascination concept is to provide the consumer with exceptionally well designed, value-added services and, with a specific focus on retailing, to change the way of how products are presented and sold. Next to solely serving functional purposes, emphasis is placed on the additional delivery of hedonic values. The implementation of solutions for combinations of concrete consumer needs also represents the basis for successful innovation management [Voigt 2008, p. 403].

As a second component the definition above contains a technical element, as the self-services are realized by applying innovative technologies. Within service provision these technologies are not only used for delivering the requested performance but in particular also serve as the respective service interfaces towards the consumer (represented through the HCI research field). These interfaces need to be created in an appealing, intuitive, and easy to use way in order to meet the requirements of the users. Raskin [2001, p. 22] emphasizes that for the user the interface represents the essence of the product or service. Usability, joy of use, ease of use, user experience, and quality of use are only some of the disciplines contained in the HCI research stream [Burmester 2007, p. 246].

Customer experience management finally covers the psychological and marketing-related perspectives. It is used to strategically design holistic experiences by evoking positive emotions and provoking desired consumer behavior. "Experiences [...] connect the company and the brand with the customer's lifestyle and place the purchase occasion

in a broader social context. [...] In sum, experiences provide sensory, emotional, cognitive, behavioral, and relational values that replace functional values" [Schmitt 1999, p. 26].

Many practical examples exist for combinations of two of the research areas (cf. Figure 2.1). These traditional combinations can be found for example in exciting non-electronic services like a well executed haircut (combining services and CX), the provision of purely functional self-service technologies like ticketing kiosks (combining services and HCI), or emotional physical products like a visually attractive hifi audio system (combining HCI and CX). Much less attention is paid so far to the rather new combination of all three research areas. Nevertheless, and in consideration of the current development towards an experience economy [Pine and Gilmore 1999, pp. 97-105], it is exactly this combination that offers a high potential for differentiation. Service fascination research therefore focuses on the sweet spot of the interceptions with the goal of creating experiential self-services by applying innovative technologies and state of the art HCI methodologies.

The following sections provide an overview about the three underlying research areas including design, engineering, and evaluation methods of highest relevance for the context of service fascination research. Gaps in current research are disclosed for each domain and overlaps are identified. A combination of the methods discussed is used as a basis for building the theoretical service fascination research model that is applied within the design science process.

2.2 Services Science

2.2.1 Definition

The current understanding of the term "services" is introduced in the 1930s and used to describe the residual economic category next to agriculture and manufacturing [Chesbrough and Spohrer 2006, p. 36]. Today, services represent far more than half of the economy of industrialized nations [Paulson 2006, p. 18]. While "goods increasingly become commodities, service is becoming the key differentiator even in the goods sector" [Rust and Miu 2006, p. 49]. This transition from the traditional, tangible, and source-oriented logic to a service-oriented perspective is also called service-dominant logic [Vargo and Lusch 2004, pp. 1-17; Vargo and Lusch 2006, pp. 43-56; Lusch et al. 2007, pp. 5-18].

Several researchers provide scientific definitions for services. Corsten and Gössinger [2007, p. 21] arrange these approaches into three groups: enumerative definitions (listing examples for services), negative definitions (separating services from physical goods), and

explicit definitions based on constitutive aspects. A very general view is that services can be seen as bundles of functionalities that serve a certain need [Brettreich-Teichmann 2007, p. 4]. In literature (cf. Zeithaml et al. [1985, pp. 33-46], Bodendorf [1999, pp. 5-6], and Bruhn [2006, pp. 19-33]), services are characterized by the following features:

- intangibility,
- heterogeneity,
- inseparability,
- perishability,
- and requirement of an external factor.

Being executed as actions and performances, services can be described as intangible. They usually "cannot be counted, measured, inventoried, tested, and verified in advance of sale" [Parasuraman et al. 1985, p. 42]. Intangibility is referred to as the main differentiator in comparison to traditional, physical goods, serving as the foundation for all further differences [Bateson 1977, pp. 1-30]. Services are heterogeneous. The more complex a service is, the harder it is for the service supplier to deliver uniform quality. This means that consistency in service execution is difficult to ensure [Zeithaml et al. 1985, p. 34]. Moreover, the *uno-actu* principle defines the inseparability of production and consumption of services. Berry et al. [2002b, p. 7] state that inseparability "means that consumers must synchronize their availability with the availability of the service". Services are furthermore produced in interaction with an external factor. This external factor is either used or transformed and is represented by either a person, an object, information, or a nominal good, implying at least an indirect consumer contact [Bruhn 2006, p. 22; Bruhn and Meffert 2012, p. 47].

The majority of authors follows the idea of describing services on basis of the three dimensions (cf. Figure 2.2) elaborated by Hilke [1989, pp. 10-12] and Corsten [1990, pp. 18-19]. This approach, concentrating on the constitutive aspects of services, is widely approved in science and taken as a basis for subsequent work and service definitions.

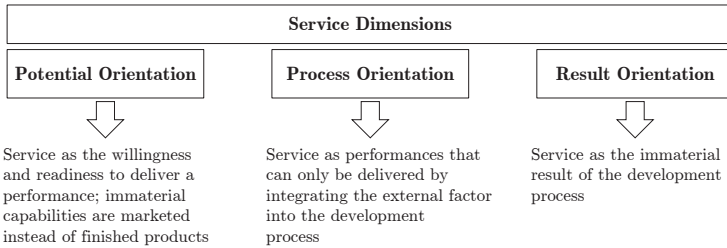


Figure 2.2 – Service Dimensions
 adapted from Hilke [1989, p. 10] and Corsten [1990, p. 18]

Based on Raabe [2011, pp. 21-23] it is possible to describe the dimensions as follows:

- **Potential Orientation:** Before being able to deliver a performance, the service provider has to ensure the capability and the resources to do so. The potential dimension therefore includes all prerequisites (internal factors) that enable the supplier to perform the desired task. Next to physical, psychological, and mental skills, these also include the tools and equipment that may be needed to deliver the performance.
- **Process Orientation:** Delivering a service requires the utilization of the external factor, e.g., represented through the consumer. This also implicates the *uno-actu*-principle described above, stating that production and consumption of a service happen at the same time, preventing the pre-production of services [Corsten 1990, pp. 18-19]. The dimension includes all process steps that lead to the service provided.
- **Result Orientation:** This dimension focuses on the traditionally immaterial result of the service. Nevertheless, as the service delivery process is applied to an external factor that is used, modified, or transformed, the result often also has tangible components.

This specification leads Bruhn and Meffert [2012, p. 25] to provide the following constitutive service definition, taken as a working basis for this thesis: "Services are independent, marketable performances that are linked to the provision and/or the deployment of capabilities (potential orientation). Internal and external factors are combined within the context of the service provision process (process orientation). The factor combination of the service supplier is applied with the objective of providing a benefit to the external factor - humans or their objects (result orientation)."

In the academic community, services and their related innovation efforts are researched within the services science discipline [Bitner et al. 2008, pp. 227-228]. "Services science is a multidisciplinary field that seeks to bring together knowledge from diverse areas to improve the service industry's operations, performance, and innovation. In essence, it represents a melding of technology with an understanding of business processes and organization" [Paulson 2006, p. 18]. The importance of technology is also mentioned by Rust and Miu [2006, p. 49] who make clear that a "computing-driven revolution is under way in the global economy guided by the principle that every business must become a service business in order to survive". While describing service systems as "value-co-creation configurations of people, technology, value propositions connecting internal and external service systems, and shared information", Maglio and Spohrer [2008, p. 18] define services science as "the study of service systems, aiming to create a basis for systematic service innovation" [Maglio and Spohrer 2008, p. 18]. In their work, Bitner et al. [2008, p. 228] finally define the discipline as follows: "Services Science is an emerging discipline that focuses on fundamental science, models, theories and applications to drive innovation, competition, and quality of life through service(s)."

Based on its key research issues, Hidaka [2006, p. 41] describes services sciences as a multidisciplinary field and "significant in that they are aimed at creating innovation in services by fusing all the knowledge and methodology derived from business, natural sciences, engineering, and social sciences, as well as the demand-side (consumer-side) innovations" (cf. Figure 2.3).

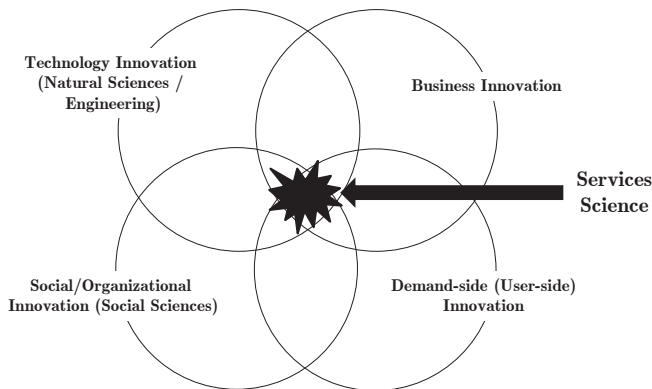


Figure 2.3 – Services Science Research Discipline
adapted from Hidaka [2006, p. 41]

Building on these classifications, the following sections provide an overview about current research trends in services science. Special focus lies on electronic services, service engineering, as well as the assessment of service quality.

2.2.2 Research Trends

2.2.2.1 Self-Services

"The traditional boundary between provider and customer can shift toward the self service, with the customer performing many of the tasks previously done by the provider" [Campbell et al. 2011, p. 173]. Meuter et al. [2000, p. 50] explain self-services by stating that they "are technological interfaces that enable customers to produce a service independent of direct service employee involvement". The same argumentation is followed by Salomann et al. [2006, p. 66] who argue that "customers themselves perform tasks that were once done for them by others". Building on these definitions it becomes obvious, that self-service providers outsource tasks to the consumer, while the role of the service employee, e.g. in the physical shop, is increasingly repressed.

The recent technological developments, especially in the area of information and communication technology (ICT), lead to a new understanding in the service domain. Meffert [2001, p. 943] describes the evolution of ICT and especially the Internet as an important driver of modern services marketing. This development leads to the emergence of self-services that are realized by using different kinds of technologies, not only to substitute the service encounter, but also to provide the consumer with digital contents in a fast, time and location independent manner.

Hence, and in contrast to traditional services, these electronic services (also called e-services) make use of ICT to deliver the intended results. This can happen for example by using electronic networks. Most authors associate e-services with services that are provided through the Internet as a time and space bridging media [Grönroos et al. 2000, p. 245; de Ruyter et al. 2000, p. 186; Breithaupt 2002, p. 185; Gillig 2011, p. 1]. Nevertheless, there is also another understanding, taking the definition to a more general level and the technology mediation (independently from the Internet as a medium) as the basis for a definition (cf. Wegmann [2002, p. 247], Wirtz and Olderog [2002, p. 515], Rowley [2006, p. 341], Meffert and Bruhn [2012, pp. 275-276]). Bruhn [2002, p. 6] clarifies the differences between traditional and electronic services using the delimitation presented in Figure 2.4.

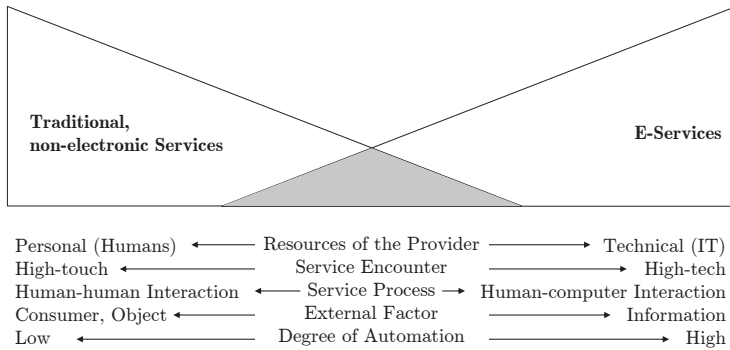


Figure 2.4 – Delimitation of E-Services
adapted from Bruhn [2002, p. 12]

While with traditional services the service encounter, constituting the interface between provider and consumer, is represented by human service personnel, e-services use electronic platforms that are provided via modern communication technology. Consequently, the consumer is interacting with a computer system instead of a human. Also electronic services involve the integration of an external factor. E-services require the consumer to functionally contribute, providing information to the system. Furthermore providing services in a digital form necessitates a standardization of the performance at least in the phase of interaction, making it possible to automate the process. [Bruhn 2002, pp. 8-13]

Introducing electronic self-services leads to benefits, but also may involve shortcomings on the provider as well as the user side. Next to saving costs and time, the goal for companies is to improve customer satisfaction [Bitner et al. 2002, p. 98; Salomann et al. 2006, p. 73]. But also an increased freedom of choice for the consumers as well as the elimination of media conversions is mentioned [Salomann et al. 2006, p. 73].

Technologies take on a special role in services science. They can support the process of service creation, either representing alternative possibilities for service delivery as a whole or acting as support tools for improving service delivery [Meffert and Bruhn 2012, p. 143].

2.2.2.2 Self-Service Technologies

The definition of self-service technologies is closely linked to the one of electronic self-services. Beatson et al. [2006, p. 853] describe SSTs as "where customers deliver service

themselves using some form of a technological interface". While research in e-services focuses on the services and which traditional tasks can be improved through electronic media, SST research has a stronger focus on the technological components. SSTs represent a relatively new service delivery method [Beatson et al. 2006, p. 854], gaining more and more importance as technology advances [Beatson et al. 2006, p. 854; Beatson et al. 2007, p. 75; Jia et al. 2012, p. 209].

SSTs traditionally represent IT systems that are used to automate processes in a company's front office and to replace manual human activities. Tasks that have been performed by the service supplier before are now handed over to the customer in a do-it-yourself manner [Mertens et al. 2012, pp. 106-108]. Today, most e-services provided through SSTs follow utilitarian goals. Implementations can be done through electronic platforms, for example provided through the Internet and using the consumer's own interaction devices (e.g., home banking or travel booking applications), or in form of a combination of hardware and software (e.g., ATM machines or information kiosks). [Bodendorf 1999, pp. 23-25; Meuter et al. 2000, p. 52; Mertens et al. 2012, pp. 108-122; Meffert and Bruhn 2012, p. 359]

In their foundations article, Meuter et al. [2000, p. 52] categorize the types of SSTs using a matrix of interface (the technology) vs. purpose (the service), providing an overview about the range of different SSTs based on previous literature. This classification, depicted in Table 2.1 is still valid today and applied in subsequent research (cf. Nysveen and Pedersen [2011, p. 2] or Bruhn and Meffert [2012, p. 359]).

For automating as well as for refining services, the internal factor is of particular importance. This requires the service provider to ensure the availability and performance of the internal capabilities [Meffert and Bruhn 2012, pp. 251-253].

Lee and Allaway [2002, pp. 553-554] state that "firms that replace or augment service personnel with SSTs can lower delivery costs and release service personnel from routine tasks [...]. In addition, these technology-based service innovations can potentially meet customer service needs across a wider range", additionally enhancing customer satisfaction "and fascination with the capabilities of the SST". The independence of service provider availability also leads to what Berry et al. [2002b, p. 7] call "access convenience". "Technologies specifically designed to improve customer convenience can affect each type of service convenience" [Berry et al. 2002b, p. 9]. The use of SSTs can also lead to an improved brand image, e.g. by positioning the company as an innovation leader, or by providing extraordinary services leading to positive customer experiences [Salomann et al. 2006, p. 73].

Table 2.1 – Categories and Examples of SSTs in Use
adapted from Meuter et al. [2000, p. 52]

<i>Purpose/ Interface</i>	<i>Customer Service</i>	<i>Transactions</i>	<i>Self-Help</i>
<i>Telephone/ Interactive Voice Response</i>	<ul style="list-style-type: none"> • Telephone banking • Flight information • Order status 	<ul style="list-style-type: none"> • Telephone banking • Prescription refills 	<ul style="list-style-type: none"> • Information telephone lines
<i>Online/ Internet</i>	<ul style="list-style-type: none"> • Package tracking • Account information 	<ul style="list-style-type: none"> • Retail purchasing • Financial transactions 	<ul style="list-style-type: none"> • Internet information search • Distance learning
<i>Interactive Kiosks</i>	<ul style="list-style-type: none"> • ATMs • Hotel checkout 	<ul style="list-style-type: none"> • Pay at the pump • Hotel checkout • Car rental 	<ul style="list-style-type: none"> • Blood pressure machines • Tourist information
<i>Video/CD</i>			<ul style="list-style-type: none"> • Tax preparation software • Television/ CD-based training

Nevertheless, the acceptance of technology-based service encounters heavily depends on a reliable functionality [Bitner 2001, pp. 10-11; Meffert and Bruhn 2012, p. 359]. As shortcomings of SSTs researchers identify the potential lack of acceptance, e.g. because tasks now have to be fulfilled by the consumer himself/herself instead of the traditional service supplier. Also missing attractiveness and ease of use are mentioned as a back-draw. Poor interface design leads to anxiety of non tech-savvy consumers and the experience of stress. Finally, consumers might perceive a lack of personal contact when interacting with SSTs. [Salomann et al. 2006, pp. 73-74]

The integration of SSTs with traditional customer touch points, e.g. in the form of in-store kiosks in retail environments, is one of the major trends in the self-service domain [Salomann et al. 2006, p. 81]. With the traditional understanding of e-services, e.g. provided through the Internet, "customers have to rely entirely on sight and sound" due to the missing face-to-face interaction with a human employee in the respective physical environment [Rowley 2006, p. 341]. With physical self-service encounters (for example represented through kiosk systems) applying innovative technologies and interaction types, it is possible to bypass this drawback. It is the service supplier that decides on the

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2016, XXI, 338 p. 140 illus., Softcover

ISBN: 978-3-658-11672-9