

**A PICTURE IS WORTH A THOUSAND WORDS:  
TECHNOLOGY PERCEPTION IN REMOTE SERVICE ENCOUNTERS  
BASED ON METAPHORS**

Modern information technologies alter not only the nature of services and their delivery process but also the interaction at the interface between service provider and customer. This research focuses on the exploration of a new type of technology-mediated services, remote service in a B2B-context based on metaphor analyses. This study intends to contribute to literature by exploring how business customers perceive and evaluate remote services; revealing how transformation from close personal contact to technology-mediated interaction affects the relationship between provider and customer and by using metaphorical analysis to better understand customers attitude towards service technology.

Keywords: Remote Services, Service Technology, Qualitative Interviews, Metaphor Analyses

## INTRODUCTION

*“The world is becoming characterized by services”* (Ostrom et al. 2010, p. 4) during the last decade, services industries were subject to considerable changes with regard to the way services are provided and delivered (Bitner, Brown, and Meuter 2000). Modern information technologies leverage service advances (Ostrom et al. 2010) and alter not only the nature of services and their delivery process (Bitner, Brown, and Meuter 2000) but also the interaction at the interface between service providers and customers (Colby and Parasuraman 2003). (Self)-Service technologies in B2C-settings have received considerable research interest over the last years (Dabholkar 1996; Makarem, Mudambi, and Podoshen 2009). However these concepts fall short in explaining complex service technologies in business-to-business settings.

This study focuses on an emerging type of service technology in a B2B context. Remote services are provided in an interactive technology-mediated production process, exclusively allowing service providers to access and modify the service object over long distances (Schumann et al. 2007). Particularly in high technology industries such as IT, medical healthcare equipment and mechanical engineering, remote services are established instruments and are often used for remote repair and remote diagnosis and maintenance (Biehl, Prater, and McIntyre 2004). More precisely we focus on *proactive remote service that are one-directional technology-mediated services enabling the service provider to preventatively monitor, diagnose and repair physically separated service objects ideally without human to human interaction and customer’s collaboration.*

Our study aims to develop a holistic understanding of how customers perceive remote service technology, which factors influence their adoption and additionally we investigate how the transformation from close personal contact to technology-mediated interaction will affect the relationship between service provider and customer. Therefore we combine traditional face-to-face interviews with metaphor analysis because metaphors are useful to reach tacit knowledge and feelings about the service innovation (Helkkula and Pihlström 2010).

Investigating remote service technology perception is important for a number of reasons. First, physical distance and remote delivery complicates rich communication modes, such as face-to-face contact (Ostrom et al. 2010). Second, remotes services are extremely intangible and they are delivered without personal interaction. Therefore the evidence of service is often not observable to the customer and complicates the evaluation of the service performance and quality (Bitner 1993). Third, this new form of technology-mediated interaction characterized by *“boundaryless relationships and low-friction transactions, exchanges and business operations”* (Ostrom et al. 2010, p. 29) generates unexpected challenges both for the service providers and the customers (Zeithaml, Parasuraman, and Malhotra 2002) and might change the relationship especially in a B2B-setting (Selnes and Hansen 2001) because as said before interpersonal exchanges are important factors determining services success and give customers an impression about service quality (Gremler and Gwinner 2000).

## RESEARCH DESIGN

Remote services represent a relatively new field of services technology research therefore literature and concepts on remote services are limited. Moreover *“if we want to have a holistic perspective and want to obtain in-depth knowledge about certain objects qualitative approach is the most appropriate* (Sinkovics, Penz, and Ghauri 2005). An exploratory research design that emphasizes discovery over confirmation seems to be appropriate for this study. We utilize in-depth interviews as a method to capture underlying dimensions (Carson, Gilmore, and Gronhaug 2001) of how customers perceive remote service technology.

Particularly in industrial settings qualitative research plays an important role when it comes to capture subconscious motives and perceptions of respondents (Wagner, Lukassen, and Mahlendorf 2010). In-depth interviews are useful in business-to-business marketing research where it may be desirable to tailor questions to a company or to a specific respondent's knowledge and background (Craig and Douglas 2000). We conduct the interviews following the critical incident technique (CIT)<sup>1</sup> because „*the method is adapted to identify the sources of both satisfactory and dissatisfactory service encounters from the customer's point of view*“ (Bitner, Broome, and Tetreault 1990).

We have chosen the healthcare industry as unit of analysis since the medical- and healthcare sector is very essential for service technology research (Ostrom et al. 2010), remote services in this industry are developed and established to a certain extent and interview partners can refer to their experience, incidents and know-how collected over the time. In accordance with our research aims we selected medical engineers and technicians being directly affected by remote service technologies. This study comprises a total of 25 extensive qualitative in-depth interviews with remote service customers and 10 interviews with remote service representatives across 10 different hospitals in the USA, Germany and Sweden.

A content analysis is conducted to examine the data material. During the analysis it became obvious that interview partners frequently used metaphors to describe their technology perception and to substantiate their individual understanding. At this point a systematic metaphor analysis is included in the methodological process to give consideration to the extraordinary linguistic richness. “*The essence of a metaphor is understanding and experience one kind of thing in terms of another [...] they are an expression of structure of thoughts*” (Lackhoff and Johnson 1980). Literature in metaphors highlight their use in the context of service development. Metaphors are used to capture needs and ideas from fresh perspectives (Durgee and Chen 2006) to describe experience of service process, customer needs and wants (Zaltman 2003) and for new product idea generation (Dahl and Moreau 2002). In this complex and technology-demanding remote service contexts it is of high importance to reach unspoken tacit needs for co-construction of new or revised services that can be supported by the use of metaphors (Helkkula and Pihlström 2010).

## RESULTS

Five emerging categories (technical, functional, relational, economic and prospective dimension) are identified (all results are shown in figure 1) to influence remote service perception.

Customers value the technological advances offered by remote services. One customer state “*it's like the reconnaissance for the military, it's the satellite photo that gives us an advanced notice that the hurricane is coming.*” [IP05]. This statement not only highlight the importance and perceived usefulness of the technology but at the same time it reveals the customers situational environment. Customers in medical settings have to ensure reliability of technological equipment and therefore remote service are regarded as helpful and supportive. Another topic is the relational dimension that is identified in a technology-mediated service encounter. Remote services are perceived to limit social and relational exchange respectively face-to-face interaction between customers and service providers. Customer recognize the loss of social contact as a negative factor and describe possible results of limited interaction summarized in the following picture: “*When we've sent rockets to the moon it takes many, many, many years, thousands of people to pick up all the things to measure, monitor and*

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<sup>1</sup> (Flanagan 1954)

control remotely. But at the end of day they can't necessarily get the, remember the, it was an Apollo.... that's 13. It was the fact that the people on earth could look at the information and asked the guys, look at this, tell me what you see. You couldn't get away without the interaction. When we've sent an unmanned rocket to mars and it failed, that's it. There's nobody who can help you. You can't get away from the human contact. Not in our life time.”[IP13].

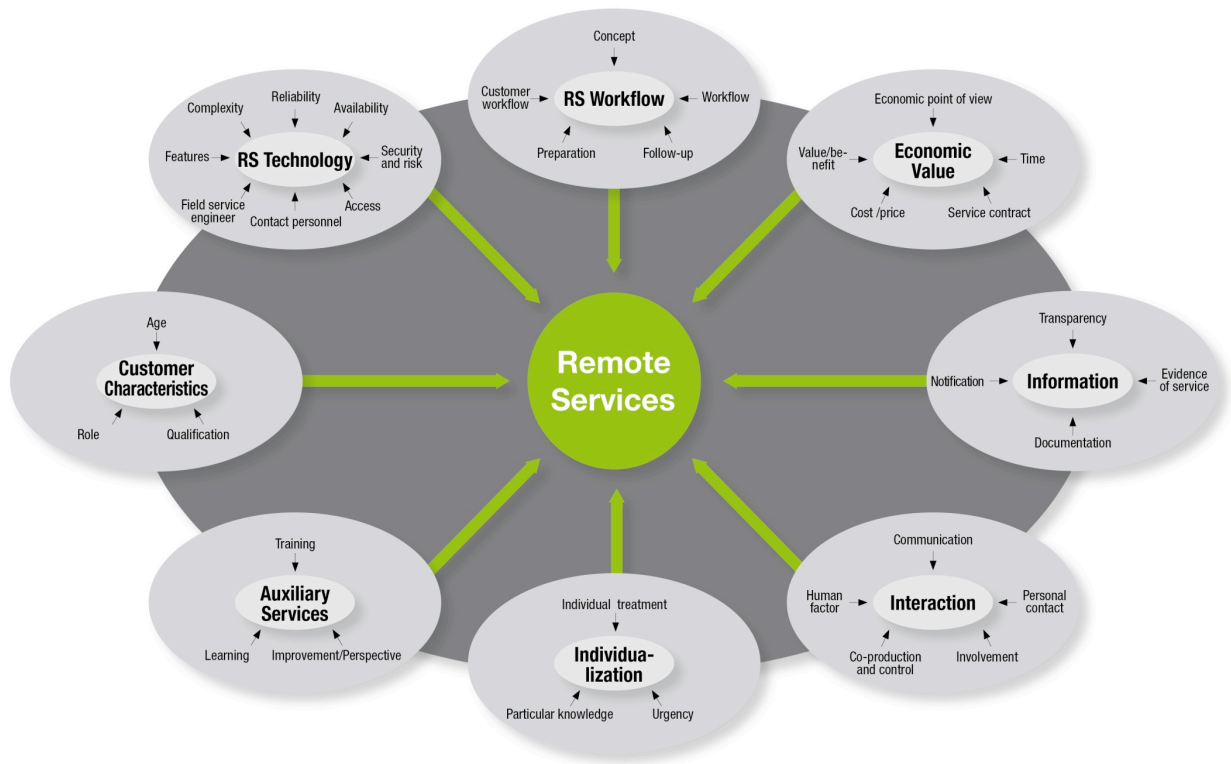


Figure 1 Results from exploratory interview study

With this metaphor the customer strongly expresses his attitude towards human-less service delivery. This opinion is supported by another customer quotation, the customer talks about *two guys* meaning the service provider technicians that are replaced by the technology. *“There is nothing, we get very, very frustrated if we can't get them to help. They are our live lines. Without these two guys at the helm of this boat we are not better than the Titanic.”*[IP20]. This picture reveals the helplessness of service customers without service provider technicians who supported them to cope with technology. The prospective category includes aspects of learning and training of the customers to better deal and understand the technology-mediated services. One customer summarize the importance of customer’s training in this picture *“It's like the calculator when it first came out, if you don't know what the answer should be how Remote Services as Calculator you are going to know that you punched in the wrong numbers? When I was in college, when the TI10 and the HP28 first came out, first calculators, ability to do larger rhythms on the calculator, and my professor has used to say, you have two choices, you can use your calculator, the answer is either right or wrong, because it's digital, one is 0. Or you can work the problem out and show me that you understand what it's doing, the process, and I'd give you credit for everything you right So out did right. So, calculator went out, I went back to my slide”*[IP03]. Based on this

metaphor we can conclude that customers only understand the value of remote services when they receive appropriate training and guidance to use the technology and comprehend even processes that are running in the background as most processes do in a remote service context.

## **CONCLUSION AND IMPLICATIONS**

Based on qualitative interviews with service providers and customers and metaphor analyses this study has identified five dimensions that influence the remote service technology perception. We can conclude that technical, functional, relational, economic and prospective factors influence customers' remote service perception particularly proven by metaphors that are used by the interview partners. This research adds to service marketing literature by investigating a new type of technology-mediated service and relevant influence factors that determine customer's perception. Additionally this research has contributed to research methodology by proving the usefulness of metaphors to understand service processes and customer perceptions about technological innovations. This research was conducted in Germany, Sweden and the USA and it can also be assumed that the use of metaphors in the qualitative interviews helps to overcome language barriers particularly in interview situation with a mix of native and non-native speaking interview partners. Based on the results this study can also set up managerial implication for remote service provider. It became obvious that customer value the technological advantages of the new service type but at the same time they emphasize the importance of relational factors like face-to-face interaction and interpersonal exchanges during the service delivery to maintain the relationship with their service provider. Service providers have to understand that remote services are perceived to be risky and complex and customers call for training and guidance to understand and efficiently use the services. Training of customers also effects the risk perception. For remote service providers it is also important that they use the technology not only for service provision but also as a tool for committing the customer more closely to the company.

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