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FROM TELESALES TO TELE-ADVISORY SERVICES IN TRAVEL AGENCIES

Completed Research Paper

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Abstract

Travel agency call centers are intended to complement advisory services of the bricks-and-mortar travel agencies by providing remote advisory services. Currently, they are ill-prepared for giving such advisory services due to their limitations in several areas of their work practice. This article presents the organizational as well as information and communication-related issues in work practice that need to be addressed preparing call centers to sufficiently give advice at the phone using an Internet connection. Resulting design requirements concern trust, information quality, joint problem-solving, and user satisfaction. In order to test the derived design requirements, the TeleSmartravel system was implemented and evaluated in a preliminary use at a real travel agency call center. Results indicate that a visually enhanced, collaboratively used advisory support system can beneficially influence the advisory for both the agent and the customer and therefore opens new opportunities for an innovative multi-channel advisory approach.

Keywords: Collaboration, User involvement/participation, User satisfaction, Trust, Problem-solving, Information quality, Design Science

Introduction

Travel agencies are under pressure to compete against self-service over the Internet (Dilts & Prough 2002; Werthner & Ricci 2004; Winkler et al. 2008). Suggested solutions to the ongoing disintermediation address supporting interoperability, personalisation, and constant networking (Buhalis & Law 2008) and strategies for acting as online intermediaries (Buhalis & Licata, 2003). While innovative business models that accept the Internet as an opportunity (Buhalis & Law, 2008; Barnett & Standing, 2001) are already considered, these considerations only emphasize the online distribution channel (e.g., Fesenmaier et al. 2003). Offline distribution as well as the human advice are neglected. In prior publications (Novak & Schwabe 2009; Schwabe et al. 2008) of our research group, opportunities for staying competitive through improved face-to-face advisory services have been shown. Thereby, the work practice in travel agencies were studied and general design requirements for advisory-supporting information systems were derived. According to the general requirements, we elaborated specific requirements for face-to-face advisory and implemented them into an innovative advisory scenario consisting of a visually enhanced information system (called SmartTravel) and a large touch-sensitive display. The major aim was to bridge the gap between the local customer knowledge (problem space) and the local agent knowledge (solution space) in order to overcome the information asymmetry barrier embodied by the counter table that divides the both of them.

This article aims to explain how practices from face-to-face advisory services can effectively be transferred into the telesales channel. Findings can be used to augment the multi-channel approach in the process of online travel advisory services. In this, travel agencies could serve customers who on the one hand appreciate personal contact to an agent but need or prefer the spatial flexibility of remote interaction. We therefore methodologically adapt Design Science as general research framework and follow the user-centred design process. Hereby, we started with investigating the phone-based telesales channel of a traditional travel agency. Fortunately, this research is placed within collaboration with a worldwide operating travel agency, especially targeting young and young-at-heart people's travel needs. The researchers were therefore able to initially observe telesales advisory sessions, to interview five telesales agents (including telesales manager) and analyze business reports for contextual data¹. Observation guidelines were derived from scenario-based development (Rosson & Carroll 2002) and user research (Kuniavsky 2003). Problems in current telesales work practice led to generic design requirements for a new tele-advisory service, based on the notion of value co-creation (Lusch & Vargo 2006) and the usage of the Internet resources. We developed a prototype system – TeleSmarttravel – on the basis of the design requirements. Accordingly, we tested the system instantiation against requirements involving both twelve customers and five travel agents as part of the SOLET living lab.

Prior research (Novak 2009; Novak & Schmidt 2009; Novak & Schwabe 2009) revealed that four design goals are instrumental to improve advisory:

- (1) *to increase trust,*
- (2) *to improve information quality,*
- (3) *to support joint problem-solving, and*
- (4) *to increase user satisfaction.*

Research literature shows high awareness on these four points but they are hardly cohesively addressed. Since we inform our design by intensive work in the field and the major underlying theoretical work of the areas of the instrumental design goals as well as the application domain (travel and tourism), we will introduce the instrumental design goals first. A crucial baseline reasoning for the adaption of these four goals stems from self-determination theory (Ryan & Deci 2000) and the concept of a holistic user experience (Hassenzahl 2010) combining usefulness/utility, ease of use and hedonic aspects of system use: every human action is intrinsic motivated by the expectation that the result or the action itself will fulfill certain basic human needs (e.g., autonomy, competence and relatedness, following self-determination theory) in a particular context. Thereby, obviously, all these needs fulfilled (to a demanded degree) will result in increased user satisfaction. The need to feel competent to advise people in travel planning from the agents' perspective and to decide for the right product(s) from the customers' perspective directly calls for information quality as a pre-condition. This is for instance confirmed by DeLone & McLean (1992,

¹ internal monitoring data of the researched travel agency call center regarding daily call statistics

2003) who nominate information quality as an aspect of IS success within the D&M IS Success Model. This regards similarly to trust that is both a requirement and a result of joint problem-solving what can be emphasized by a collaborative situation with a decreased principle-agent conflict through design of the situation and the used support system (Novak 2009).

Therefore, according to the order from above, this article summarizes the four goals' regard in literature in the following section. Afterwards, we introduce our development and research approach according to the main two actions needed: user involvement within design construction and instantiation elaboration, and setting of evaluation. Subsequently, we present the results of the problem definition in the form of six central problems in current work practice. We then map these problems to the instrumental design goals by elaborating design requirements for tele-advisory services of travel agencies. Then, the according system design is presented. The following evaluation presents and discusses the results. We will thereby provide further insights into suitability of the argued development and research approach as well as of the design instantiation regarding the context of use. The conclusions finally include a brief summary and suggestions for future work.

The Instrumental Design Goals in Literature

We introduced the four instrumental design goals of increasing trust, improving information quality, supporting joint problem-solving, and increasing user satisfaction. The following subsections further discuss these goals regarding our context of travel advisory.

Trust

Trust leads to an increase of customer loyalty or commitment, respectively (Reichheld & Scheffer 2000; Moliner et al. 2007) that is the basis for long-term relationships between customers and firms. Further, trust in a seller or intermediary has a positive impact on the customer intention to purchase (Chong et al. 2003). Trust has affective, subjective aspects and cognitive, objective aspects (Madsen & Gregor 2000). Some people appear trustworthy while others do not. *Ceteris paribus*, the less personal information one has of others, the less they are trusted (Friedman 2000).

Information asymmetries are the objective reasons for a lack of trust. Information asymmetry occurs in transactions between self-interested parties with differing goals in uncertainty conditions that manifest in a principal-agent conflict (Freedman 2007; Novak 2009). In the case of travel advisory, the customer (=“principal”) has less knowledge about his or her travel options and has to take care that the travel advisor (=“agent”) optimizes the trip rather than his or her commission fee. The principal agency theory proposes (amongst others) monitoring and signaling/screening as measures to lower the information asymmetry. This requires a comprehensive and rich information flow from the agent to the customer. In a set-up in which the customer and the agent can communicate only via telephone, this is not sufficiently possible. Adding additional channels could reduce information asymmetry, enhance transparency and thus enhance the trustworthiness of the advisory service, particularly if it is used to transfer trustworthy information like recommendations from other travelers (Zhan et al. 2009). If these additional channels also transfer more personal information, the affective trust is also strengthened.

Information Quality

Information quality of travel advice has two aspects as the aforementioned problem and solution space indicate: (a) the quality of the customers' expressed needs, and (b) the quality of the advisors' recommendations.

(a) Regarding the quality of the expressed needs, it will be poor if the customers need to know what the possible answers look like and what terms are relevant in the first place before they can express what they want. Belkin et al. (1982) call this problem an “anomalous state of knowledge”. Because of the associated “stickiness” (von Hippel & Katz 2002) of the customers' needs, they do not have a seed to start searches. Travelers are in this tricky situation when they know they need vacation, but are not able to articulate what they really want. In this situation human advice is superior to all computer-based advice because a human can empathize with another person and elicit hidden needs in a question and answer dialog. Travel agencies may be well advised to focus their business models on this situation.

(b) The question of whether the quality of the answers is good concerns accessibility, correctness, up-to-dateness, coherence, trustworthiness and completeness (to name a few core established information quality criteria (Prestipino 2008)). High quality answers require rich information channels. As the Internet provides a vast amount of information that can cause confusion and stress in customers due to the cognitive load of selecting, filtering and evaluating (Frias et al. 2008), human expert advice is a chance to manage the overload to the advantage of the customer.

Joint Problem-Solving

Customers' willingness to pay for travel information increases with the customization of provided service (Khattak et al. 2003). Highly customized services require an intensive interaction between the customer and service provider (= travel agent). As proposed by service-oriented marketing (Lusch & Vargo 2006), customers become co-creators of value, and "experience and perception are essential to value determination" (Lusch & Vargo 2006, p. 44). Novak et al. (2008) show how co-creation is achieved with an environment that supports true collaboration and a *joint problem-solving*: the customer and advisor first reach an agreement on the problem (i.e., what the customers want) and then together design the solution, working with Google Maps as an anchor for travel products (hotels, flights, packaged products, etc.). The screen is set-up in a way that allows both of them to view and manipulate the data. The shared representations allow the customer to become active in "touching" her vacation, thus leading to a better and more satisfying solution because of an enhanced advisory experience and an increased perceived share of responsibility for the evolving individual travel product.

User Satisfaction

The strategic guidelines of the authors' globally active project partner state: "The travel experience should start with visiting in the travel agency." Thus travel advisory should lead to a similar emotional *user satisfaction* as travelling itself. It should be exciting, information rich, entertaining and unique. Research on "hedonic information systems" shows that such task-unrelated system characteristics (Hassenzahl et al. 2000; Hassenzahl et al. 2001; van der Heijden 2004) can play an important role in user acceptance of such systems (Hassenzahl et al. 2001). Although travel advisory is a utilitarian environment for travel planning that should result in booking activities, there is a component of hedonic concerns (Decrop & Snelders 2004; Novak & Schmidt 2009). Along with the objective information quality aspects mentioned above, information should be rich enough to capture the imagination of the customer – allowing her hidden travel information needs to surface – and thus be comprehended both by the agent and the customer themselves. Beside the essential travel information, feelings of pleasure and excitement are important information attendants (Goossens 2000). A motivational support for customer's imagination and emotional activation can be achieved by making extensively use of photographs, videos and films not only in external marketing initiatives but also in the process of advice (Liebman Parrinello 1993).

Travel planning as the process of generating a highly individualized travel product is naturally a strong emotionally colored process (Hyde 1999). It concerns the most important time of the year for a person or group of persons: vacation. The product itself, therefore, is also attached with lots of feelings and emotional expectations that should be experienced right at the locus of travel planning. Especially in a telesales scenario, the transfer of any emotional information (like, e.g., the enthusiasm of the agent, the funny message of a video clip or the overwhelming look of a special landscape on a photograph) is at least as difficult as in face-to-face advisory (or even more so).

Combining the instrumental design goals, an advisory service provider offers a unique, highly individualized consultancy whereby the agent acts as the customer's expert partner in an equalized, joint problem-solving process in order to bridge the gap between the local customer knowledge of her "sticky" needs and the local agent knowledge of appropriate solutions.

Development and Research Approach

Being proactive in research and providing suitable feeds to theories in abstract organizational contexts that enable deduction of design requirements in specific contexts is a difficult challenge in IS-research (Cole et al. 2005). In our project "Travel Advisory 2.0", founded by the Swiss federation, we have the responsibility and chance to provide direct impact of research results to practical environments since these projects are framed to have to have a transfer character. We therefore follow the constructive approach of a Design Science methodology.

Thereby we contribute to the understanding of the instrumental design goals in general and their role in the specific application domain. These contributions will aid to initiate a more sophisticated next design cycle.

Following a Design Science methodology, we needed to: identify the organizational problem(s), create and evaluate IT-artifact(s) regarding the solution of the problem(s) within a given organizational context, and apply empirical and qualitative methods within a build-and-evaluate loop that is typically iterated a number of times before the final design artifact is generated (Hevner et al. 2004). Since user involvement in system development is still an acknowledged practical issue and ranges as one of the most important IT project success factors (e.g., Karlsen et al. 2006) as well as one of the most crucial reasons for project failure when insufficiently performed (e.g., Emam & Koru 2008), we decided to contextualize the common research framework of Design Science with the User-centered Design process (UCD) (Figure 3, ISO 1999). We performed the process following the three principles for user-centered design (Gould & Lewis 1985):

- Early focus on users: While targeting the needs of real users, the observed organizational problem to-be-solved gains amplitude and enriches the stakeholder perspectives.
- Empirical: Through gathering data about the artifact, designers can learn from users whether the artifact solves the problem and the design is informed.
- Iteration: A build-and-evaluate loop enables designers to continuously improve design and artifact in order to gradually meet problem-derived requirements.

After the initial planning in one cycle of UCD, the context of use is specified (travel tele-advisory in a travel agency in our case), the user and organizational requirements are gathered, and then based on those requirements a solution is produced. Finally the design is evaluated against the requirements before the cycle starts again. In order to support context specification and requirements analysis, we applied scenario-based development (Rosson & Carrol 2002) and a methods kit for user research (Kuniavsky 2003).

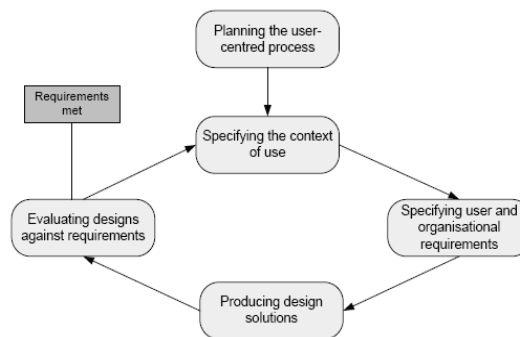


Figure 3. User-centered design process (ISO, 1999)

In the end, we have two main challenges while performing the outer build-and-evaluate loop from elaborating the context of use to reach a first instantiation for a remote travel advisory support system: First, we need to prevent intense user involvement in smaller build-and-evaluate loops using a variety of low-fidelity but assessable artifacts as demanded through the development process. Second, development, knowledge-gaining and evaluation need to be aligned to the instrumental goals stemming from a previous build-and-evaluate loop with a similar context (co-located vs. remote advisory). Results of the final evaluation will explicitly show how well system design fits into the context of use. Implicitly, we can argue whether the chosen development procedures are suitable. The following subsections describe first the form of user involvement we performed, and second the summative evaluation setting at the end of the outer build-and-evaluate loop.

User Involvement and Activities to Inform Design

The requirements specification is drawn from both theoretical/conceptual sources and from empirical sources. The theoretical work consolidates and extends prior work of the authors' research group on collaborative co-creation and

reintermediation, outlining opportunities and approaches for bricks-and-mortar companies to position themselves against pure Internet competition.

As mentioned in the introduction we collaborate in this research with a worldwide operating travel agency, especially targeting young and young-at-heart people's travel needs. The researchers initially observed five longer telesales advisory sessions. This explorative procedure of observations was intended to last until a saturation of insights has been reached. Consequently, we had to spend three whole high-traffic working days at the travel agency call center in order to experience the longer advisory sessions. We subsequently interviewed five telesales agents (including the telesales manager) in a semi-structured manner. These interviews lasted between 40 and 90 minutes. The interviews have been analyzed in order to arrange the problem scenarios for the next analysis phase. For contextual data, we have had access to business reports mainly consisting of daily call statistics and performance data. We visually prepared the data to discuss interpretations in a separate meeting lasting two hours with two general management members and the telesales manager to gain deeper situation understanding. Guidelines for the qualitative-oriented observations were derived from user research (Kuniavsky 2003). Scenario-based development according to Rosson & Carrol (2002) allows us to early produce deliverables that can easily be understood by the real users of the evolving system in the form of stories. The first stories we have developed have been the problem scenarios reflecting typical telesales situations. Since the travel agents can read and understand these stories (compared to more formalized deliverables like UML diagrams), we have been able to validate and adjust our impressions of the current situation in informal follow-up conversations with the same agents. Conducting a claims analysis (Rosson & Carrol 2002, p. 72) subsequently revealed and confirmed the six problem areas described in section "Analysis of Current Practice and Problems in Travel-Telesales". Deriving the requirements for improving the situation led to the creation of activity, information, and interaction scenarios. These stories again supported a further user involvement since users could have been asked for feedback on these stories during follow-up conversations.

We subsequently initiated the two-step requirements development that firstly informed design about lightweight vs. heavyweight implementation arguments and secondly about the state of current technology accompanied with formative evaluations. The decision for a lightweight implementation that needs to support mash-up-enabling technologies additionally informed design. We instantiated the derived specific design requirements in the design solution implemented by TeleSmartravel as a precondition for the summative evaluation.

Evaluation Setting

The evaluation afterwards needed to be conducted against the design goals and the specific user expectations. Therefore, the summative, empirical evaluation was set as a field study at the real-world call center. As proposed by the derived requirements, stimulating software systems need to provide both instrumental and hedonic value to the user (see also (Novak & Schmidt 2009)). Therefore, the experiment was aimed at assessing the intention to use, the overall user experience, and the hedonic vs. pragmatic quality of the telesales scenario using a collaborative browsable web application in comparison to the traditional telesales scenario. The experiment was conducted in a counterbalanced within-subjects design with twelve participants and four travel agents. Participants received an allowance for their expenses of 40 CHF. Travel agents supported the experiments on a voluntary basis but with management support. One out of four participants was also involved in the formative evaluations but all of them were previously involved in other scenarios of use (e.g., co-located advisory). The customer participants were between 20 and 30 years old and reflected the ordinary clientele of our partner travel agency. With the exception of one, all customer participants declared high proficiency in computer use (six professional, five advanced, one occasional use).

Travel agents received a 30 minute hands-on training one week before the test and had one training session. During the training session, a researcher acted as customer. Right before the evaluation sessions started, agents received a leaflet and were given the opportunity to ask the experimenter some questions. Customers received no prior training and did not meet the agent before the sessions. Six customers first performed the vacation planning task (relaxing vacation and activity holiday, permuted over the two scenarios) in the traditional telesales scenario and afterwards with the TeleSmartravel prototype. The remaining participants first used the TeleSmartravel-based advice and then the conventional advisory scenario. The time for task completion was limited to 30 minutes (medium duration of a typical consultancy session in a face-to-face setting).

User feedback in this evaluation was collected through in-situ observations, a questionnaire, and a short informal interview after each run of the test. The questionnaire results are thereby the baseline for analysis. Observations and interviews were used to enrich data interpretation of the questionnaires. Both agents and customer participants received a questionnaire that consisted of three parts:

- (1) a set of questions in order to verify the likelihood of acceptance of the proposed innovation by the target users (customers and travel agents) (based on (Venkatesh et al. 2003));
- (2) The AttrakDiff2 questionnaire (Hassenzahl et al. 2003) that differentiates between pragmatic and hedonic qualities as independent constructs determining the overall perception of the attractiveness of a system (Hassenzahl et al. 2000; Hassenzahl et al. 2001). Pragmatic quality (PQ) refers to the perceived quality of manipulation (i.e., effectiveness and efficiency of use). Hedonic quality (HQ) is described in terms of hedonic stimulation (HQ-S) and hedonic identity (HQ-I). The stimulation quality refers to the extent to which the system stimulates the innate human need for personal development (e.g., new skills and knowledge). By offering exciting functionalities, content or interaction styles, a system can heighten the user's attention, over-come motivational barriers or ease a problem-solving process (Hassenzahl et al. 2003) – thus supporting effective task completion and further usage. The identity aspect refers to addressing a personal need of expressing oneself and being perceived by others in a certain way (Hassenzahl et al. 2003). As people commonly express themselves through personal objects (e.g., clothes, jewelry, mobiles), the functionalities, design or visual appearance of a system can relate to a user's need for communicating a certain identity;
- (3) a number of specific usability and attitude assessing questions that focus on trust (perceived benevolence, honesty, competence and trustworthiness) in the agent and the advisory situation (elaborated from Chong et al. (2003)) that gives an overview of trust in seller-buyer situations) and certain prototype functionalities in order to inform future improvement for practical use.

The entire questionnaire was based on a 7-point Likert-scale. Only three out of the four agents handed in their questionnaires, as one was called to an urgent task immediately after the experiment.

The organizational requirements have been revisited using open ended semi-structured interviews with telesales agents a day after their test trials lasting from 20 to approximately 30 minutes, and a retrospective interview with the telesales manager within one month after the experiment which lasted 50 minutes. The telesales manager indicated that he himself conducted retrospective conversations with the four involved agents in order to “gain an overview about all impressions” of his telesales agents.

Analysis of Current Practice and Problems in Travel-Telesales

As mentioned above, we investigated the daily business of a real-world travel agency call center through conducting in-situ observations, semi-structured interviews, and discussing analyzed internal statistics of the researched travel agency in order to determine both organizational and advisory-related requirements for an innovative tele-advisory. The summarized observation and interviewing results are presented in the following two subsections. In order to structure the results, they are divided into organizational and advisory-related issues. An overview and short description of the identified issues is summarized in Table 1.

Organizational Issues

There are three main functions of the observed telesales call center: (1) the call center works on complaints in prior sales in the agencies, (2) the call center accepts travel bookings and conducts some travel advisory, and (3) it also executes orders of the in-house Internet platform. Thus, the call center is already embedded in the existing online channel and in the co-located advisory and selling channel. Therefore, the organizational base for a connected multi-channel sales strategy is already established. The telesales with ten agents performs like one branch with three to six agents excluding pure Internet platform transactions.

Due to lack of primary work according to the agents' core competency of travel advisory, the call center agents have to work on several additional back-office tasks. Only 17% of their total working time, agents are on the phone with customers. The interviewed agents all indicated that they additionally tend to shorten the calls at times when there are also many requests via the Internet channel. Also, telesales currently provides services in small bursts of activities – 87% of calls do not last longer than five minutes, a further 10% last between six and ten minutes, and

only a small rate of 3% of all calls last longer than ten minutes. In contrast, an average face-to-face advisory lasts 30 minutes. By no means, this can be interpreted as efficiency advantage of telesales over branch-based sales. Agents as well as the telesales manager confirm that short calls only address clarification and complaints (“Sometimes I feel like technical support for our Internet platform.”). Additionally, telesales has more employees than a branch but only performs like one branch. We can conclude: People choose the telesales channel for clarification on issues regarding prior sales and currently pending sales. In a kind of vicious circle, call center agents unlearn their advisory abilities and become administrative personnel or incident managers, instead of the problem managers that travel agents are supposed to be. Therefore, call center agents cannot be flexibly deployed in agencies and the call center. A home-made management problem on the agent’s inflexibility occurs. In an interview, the call center manager confirmed: “I would embrace a solution enabling my agents to re-learn real travel advisory.” Since we cannot directly influence a needed organizational re-organization by our advisory support tool design, we decided not to directly address this problem in system design. Naming this problem on the other hand is an important part of the overall organizational service design and enables us to follow possible related effects in observations. We will reference to this as *the role-model problem* (P1).

Advisory-related Issues

There are limitations regarding the problem-solving capabilities of a phone-based telesales channel. In contrast to a face-to-face sales conversation, the dialogue partners are reduced to their voices. Nevertheless, the counter-part is assessed during the first seconds of the talk (Stempfle & Zartmann, 2007). Warming up the customer, eliciting his or her needs as well as preparing an offer are all carried out only via speech because traditionally there are no other supporting tools available. Most customers do not consider telesales to be a viable option for demanding advisory for complex travel products. Although call-center agents are trained like their colleagues at the physical agencies, the perceived traditional functions of telesales are flight booking, answering simple additional questions regarding a previously booked journey, and complaints. The difference is the lack of media richness: the communication is limited to speech wherein little personality is transmitted. Customers often do not even understand the name of their agents (and vice versa), and then have no resource other than asking again and again. In co-located advisory, in contrast, this problem can be resolved in many different ways: the agent can ask for the ID to write the name correctly, he or she can ask the customer to write his or her name down on a sheet of paper and so on. These actions only last seconds and ease that situation very quickly but always by adapting procedures that are not possible in a remote situation. Agents therefore ask for the spelling of names what prolongs the process of becoming acquainted with each other and delays advisory. The term for this is *the social awareness problem* (P2).

Some successful telesales agents can explain destinations and products in such a way that customers can easily visualize them in their minds. But these agents are rare as agents and manager confirm. The others have difficulties in explaining without the visual aid of pictures. While agents at the travel office can extemporize by using a map, for example, to show where the destination is located, the telesales agent has no more utility other than his or her speech. In most cases, the agent struggles with the task, lacks confidence, and transfers this perception of uncertainty to the customer, resulting in the customer’s interpretation of the uncertainty as incompetence. An agent stated: “An advisory is even more difficult when I have to explain a destination that I have never seen myself. In a branch I have at least catalogues with photos.” Although visual expression is an issue in face-to-face advisory (catalogue pictures are small, printouts are of low quality), that is even more noticeable in telesales. The name of this is *the visual expression problem* (P3).

In the telesales scenario, there are some more problems that had already been observed in the face-to-face advisory, but in an amplified manner. The most prominent issue, besides the visual expression problem, was that a shared representation of the problems at hand and of potential solutions was lacking (Rodden et al. 2003; Schwabe 1995). In a face-to-face setting, the travel agent can point to travel catalogues or make notes on a piece of paper, draw lines on a printed map etc., and the customer is able to do the same; this representation is already insufficient for advisory on complex travel needs (traceability and ease of documentation are adversely affected, but anyhow exist) but in telesales, the situation is even worse: The telesales agent does not share any document with the customer and both the problem and the solution remain “in the air”. The customer as well has no tools (besides speech) to express needs, wishes, preferences, his or her opinion etc., and additionally has even less experience in doing this compared to the agent. Agents explain their difficulties not only in explaining things but also in understanding the customers’ answers. This problem affects both parts of the advisory conversation and reveals the absence of a baseline for joint

elaboration and cooperation: the shared material supporting shared knowledge and memory (e.g., Schwabe 2001). The reference to this is *the shared representation problem* (P4).

The advisors pointed out that for more complex advice, the provision of visual information is crucial for the success of an advisory session. In these cases traditional advisors have two main ways of augmenting the telephone communication with visual impressions. At some point in the interaction, the call is interrupted on the initiative of the agent or customer. Then either the agent sends further material (brochures, catalogues, printouts, etc.) via surface mail or the customer searches the Internet on her own with more or even less success. In the first case, the material from the agent arrives at the customer a few days later, but it is difficult for the customer to understand why particular offers were selected. In the second case the customer goes on the Internet and may become frustrated by the search efforts. Then arranging a follow-up session to the prior talk is difficult. Will the customer call again in order to book or will he or she just continue with his or her own booking over the Internet? When should a pro-active agent call him or her again?

The problem can also be solved by the customer beforehand. Before the customer calls an agent, he or she searches the Internet for information on his or her own. Will he or she then call the travel agency to finalize bookings? And if he or she does so, how can he or she share the information he or she found with the advisor?

Both alternatives are time-consuming, not only in the actual advisory session but also in pre- and post-processing. It can be very unsatisfying as most of the time is consumed by waiting. Further, a relationship between the customer and agent (or even a partnership in problem-solving) can only be established laboriously through these procedures. A resulting issue is the attitude of the customer who possibly will not accept advisory fees for a slow process and for information that he or she has actually found his- or herself on the Internet. Furthermore, there is little chance of enjoyment in travel planning in these scenarios. The reference for this is *the modal fragmentation problem* (P5).

Agents who are experienced in using the Internet explained situations where they tried to complete the travel advisory during the first call. In these situations, they had to engage in two streams of activities simultaneously: they had to talk to the customer in order to understand their needs, present possible solutions, and establish and retain a friendly atmosphere. At the same time, they had to search for possible solutions in their information systems.

While customers in the face-to-face scenario can actually see that the agent performs an action on the PC or looks at a book or brochure, in the telesales there is just an uneasy period of quiet. As customers are not used to longer periods of silence on the telephone, the agent has to explain the waiting times again and again. The necessity of legitimizing periods of quiet leads to an intensive time pressure on the agent. Answers to questions are expected to follow immediately, much more than in the face-to-face setting. This is confirmed by an agent who summarizes this problem as follows: "At the telephone, there is high time pressure when information is not at hand and needs to be searched. At the counter the customer can see what the agent actually does but at the phone there is simply silence." The name of this is *the immediate feedback expectation problem* (P6).

In a few cases the agent asks the customers whether they have a PC at their disposal. If so, they visit a specified website together: Here the customer acts as a voice-controlled device of the agent without visual feedback. This situation contributes to a better visual and shared understanding of offers, but is perceived as very awkward by the agent. This is true especially when customers use other web browsers or click unwittingly on unintended links, and the sharing of views fails. This is another instance of the shared representation problem (P4).

To summarize, the analysis of tele-advisory leads to two major insights: 1) Tele-advisory faces the same kinds of problems as the face-to-face setting, but frequently in an amplified way (shared representation problems, visual expression problems, immediate feedback problems), and 2) Tele-advisory has some additional problems that we did not observe in the face-to-face setting (role model problems, social awareness problems, modal fragmentation problems). We can thus build on our experiences in the co-located scenario, and address the distributed setting specifically in order to generate design requirements for tele-advisory.

Table 1. Problems of Tele-Advisory in Travel Agencies

P1. The role-model problem	... means that for operational reasons there is a contra-productive transfer of activities to employees who consequently unlearn their core competency.
P2. The social awareness problem	... addresses the limitations of the telephone-channel regarding the transmission of socially important information like mimic and gesture of the counterpart.
P3. The visual expression problem	... refers to the limited abilities to make the travel product(s) more tangible by, e.g., having a photograph of a hotel available.
P4. The shared representation problem	... reflects the nature of the unsupported distributed setting regarding shared materials that would allow the counterparts to elaborate jointly an appropriate solution to a developed problem statement.
P5. The modal fragmentation problem	... is characterized by the interruptions of a tele-advisory session due to the limitations of visual expression and shared representation.
P6. The immediate feedback expectation problem	... occurs whenever the customer cannot explain him- or herself delays in the conversation with the travel agent what leads to an immense time pressure for the agent.

Designing a Tele-Advisory Service for Remote Travel Advisory

Since we base our work on prior efforts in the context of co-located travel advisory, we use the confirmed instrumental design goals and general design requirements as baseline for designing a remote travel advisory. The following subsections introduce the requirements mapping from co-located to remote travel advisory, the review of available systems, and finally the system instantiation TeleSmarttravel.

Design Goals and General Design Requirements

After successfully developing a system to support face-to-face advisory, striving to transfer the concepts from the face-to-face scenario to the telesales scenario was a central objective. Thus, the design goal is to create a system that supports travel tele-advisory for complex travel information needs better than does the current telephone (and mail) service. Specifically, we aim to:

- (1) *increase the trust between customer and agent,*
- (2) *increase the information quality,*
- (3) *increase the joint problem solving capabilities of agent and customer, and*
- (4) *increase the emotional user satisfaction.*

Having introduced the four general design goals, we now map them onto a set of general requirements that themselves were derived from prior studies. Table 2 depicts general design requirements for face-to-face advisory (building on (Novak & Schwabe 2009)) in the left column. The right column provides the corresponding general requirements for tele-advisory and the remote advisory problems that are solved². Each design requirement consists of a recommendation (e.g., “Provide shared visualization of all information sources...”), an objective (e.g., “... to increase trust”), and a reference to the specifically elaborated advisory issues (e.g., “ref. P3”). By doing so, design choices are linked to the existing literature base and lay a foundation for evaluation. Furthermore, design requirements can later be translated into hypotheses (“If you provide shared visualization, the trust is increased”) once a specific theoretical base for causes and effects of advisory systems has been created.

² Problem 1 is not addressed because it is purely organizational and does not affect the system instantiation itself what we already explained in subsection “Organizational Issues”.

Table 2. Design requirements for support systems in face-to-face advisory (left) and tele-advisory (right) with listed referred problems of traditional telesales in brackets

Design requirements for face-to-face advisory	Design requirements for tele-advisory
DR1. Provide shared visualization of all information sources available to the agent to increase trust and to support the problem solving process.	DR1(t). Provide shared <i>synchronized</i> visualization of all information sources available to the agent to increase trust and to support the problem solving process (ref. P3, P4).
DR2. Present problem and solution space for both parties to support the problem solving process.	DR2(t). Present problem and solution space for both parties to support the problem solving process (ref. P4).
DR3. Integrate information from different sources including professional external and user-generated content to increase information quality and trust.	DR3(t). Integrate information from different sources including professional external and user-generated content to increase information quality and trust.
DR4. Support joint interaction with the system for both parties to increase problem solving.	DR4(t). Support joint <i>remote</i> interaction with the system for both parties <i>at the same time</i> to increase problem solving (ref. P5, P6).
DR5. Allow active exploration of the solution space by the customer to increase emotional user satisfaction.	DR5(t). Allow active exploration of the solution space by the customer <i>visible to the agent</i> to increase emotional user satisfaction (ref. P4).
DR6. Use multimedia resources extensively in a visually impacting way to increase emotional user satisfaction.	DR6(t). Use multimedia resources extensively in a visually impacting way to increase emotional user satisfaction (ref. P3, P4).
DR7. Provide natural and intuitive interaction to increase emotional user satisfaction.	DR7(t). <i>Provide intuitive and easy-to-access synchronized interaction with low requirements for clients in hard- or software</i> to increase emotional user satisfaction (ref. P5, P6).
	DR8(t). <i>Make both parties aware of each other</i> to increase trust (ref. P2).

Further Inform Design: Review of Available Systems

Does available technology sufficiently fulfill the requirements? A technology search quickly identified collaborative browsing (shortened: co-browsing) as an appropriate technology class. The web-based technique synchronizes views on websites that can be navigated in a cooperative manner. First ideas for co-browsing arose in the 90s of the past century: Group-Web (Greenberg & Roseman 1996), CoWeb (Jacobs et al. 1996), and CoReview (Maly et al. 2000) focused on group work. The pioneer systems can inform design, but cannot be adapted to an implementation problem today since they are (naturally) not technologically up-to-date. Therefore, the latest established commercial systems were investigated. However, no available tool fulfilled the requirements: Tools for computer support (e.g., TeamViewer³) implement the heavyweight approach that requires the installation of special software on the clients. This is not acceptable for ad-hoc collaboration such as in travel advisory sessions. Systems specifically designed for supporting conversations between customers and support agents in order to help with orientation on a website (e.g., LivePerson⁴, LiveZilla⁵), implement the lightweight co-browsing, but technically fail (e.g., in synchronizing JavaScript which is needed for including GoogleMaps) and are limited to a specific computer configuration (e.g., Internet Explorer). Further, the providers do not address collaborative product design specifically. Thus, the decision was to self-implement a co-browsing module that allowed co-navigation of the web-based prototype system called TeleSmartravel.

³ www.teamviewer.com

⁴ www.liveperson.com

⁵ www.livezilla.net

The Design of TeleSmarttravel

The design of TeleSmarttravel bases as well as our SmartTravel prototype for co-located travel advisory on a collaborative reformulation of the advisory situation. The reduction of asymmetry-increasing situation properties was identified to provide a source for increasing trust and user satisfaction. Providing opportunities to increase customer involvements and active participation in the joint problem-solving process promise an increase of user satisfaction and trust. The artifact should therefore be able to support collaboration in the specific setting in remote advisory.

The shared interface of the TeleSmarttravel Prototype is depicted in Figure 1. The interactive shared workspace consists of four main areas: 1) the shared problem definition space (searching via geography and product categories), 2) the shared visualization of the solution space (both textual in a list of matching results and tagged on the world map), 3) the co-browsing information bar that shows the session state (no session, in session, synchronized, unsynchronized) and provides a button to leave the session, and 4) the awareness area that was initially implemented using an uploaded image and the typed-in name.

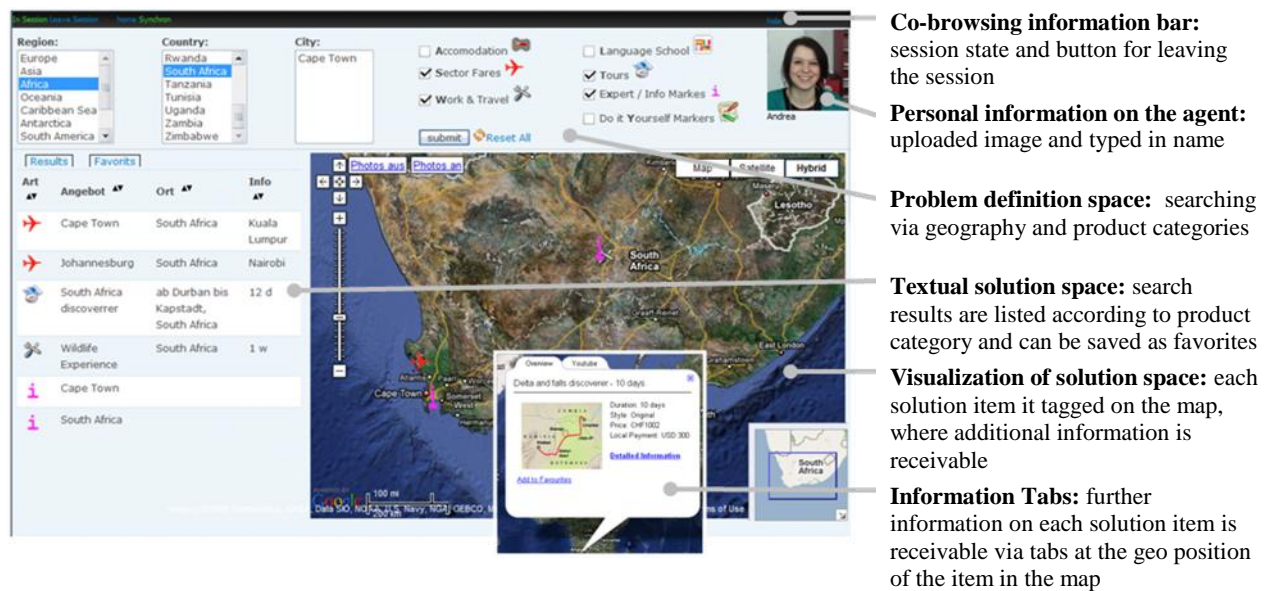


Figure 1. The Interface of the TeleSmarttravel prototype.

The co-browsing functionality for the web-based application is implemented lightweight for sharing the whole view, co-navigating the map (synchronized zooming, moving and clicking on the map), and saving favorites to the favorite list. Coordination of the co-browsing follows the full-duplex mode that allows both parties to use the mouse at any time.

According to the already described traditional tele-sales scenario, a typical use flow begins with the travel agent leading the calling customer to the URL of the TeleSmarttravel prototype. There the customer applies for an advisory session. Using the Cobrowser Dashboard, as depicted in Figure 2, the agent is able to accept the customer for a shared session.

Cobrowser Dashboard

This dashboard shows you the cobrowsing activity. The first table shows the people that have requested a live support session but that are not in a session yet. The second table shows the session that are currently active.

Support request queue

Name	in queue for	Comment	Options	Session ID
Jens Mander	15 sec	Ich brauche eine Abenteuerreise.	JE	0

Current sessions

Sess ID	Session Starter	Num of Users	Timestamp	Options
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Your new session:

Click the button. Random letters will appear in this field, which is going to be your session ID.

Figure 2. The Cobrowser Dashboard of the TeleSmarttravel prototype.

The customer receives a brief explanation of synchronization aspects, and then the agent asks questions about the customer's vacation needs and preferences and enters them as a combined search query consisting of location and product category into the problem definition space. The resulting list of matching offers is also visualized on the geographical map (Google Maps) by positioning a marker at the corresponding geographical location. When selecting a list element or a marker, a tab window with some outlining information appears at the corresponding marker position. Starting from the tab, both customer and agent can display more detailed information about offers, inspect community information, watch a video (YouTube) or add interesting offers or information to the favorites. Stored favorite links function as a history that customer and agent can re-visit during a tele-conversation session, and travel agents may use it as a digital dossier, supporting future conversations.

The system architecture is based on a mashup architecture that allows the integration of different third-party applications (e.g., Google Maps) and data sources (travel agency database, online portals and travel communities). The TeleSmarttravel system extends the existing SmartTravel prototype supporting face-to-face advisory services. It aims on achieving the general design goals through implementing the general design requirements for tele-advisory services. Adapting a suitable development and research approach then enables a structured evaluation along the general goals.

Evaluation

The results of the evaluation are structured using the four general design goals of trust, information quality, joint problem-solving, and user satisfaction. Comparative data was tested with a two-sided t-test for independent samples with differing variances. Interpretations are accompanied by information gathered during in-situ observation of the trials and the short retrospective interviews.

Overall Impression

Each customer participant declared a clear preference for the TeleSmarttravel advisory, looking back on the two sessions they had experienced. Regarding their future attitude, customers would decide on a remote travel advisory via telephone supported by the collaborative browsable TeleSmarttravel prototype in a direct comparison to the remote advisory that is only based on telephone communication, as shown in Figure 4.

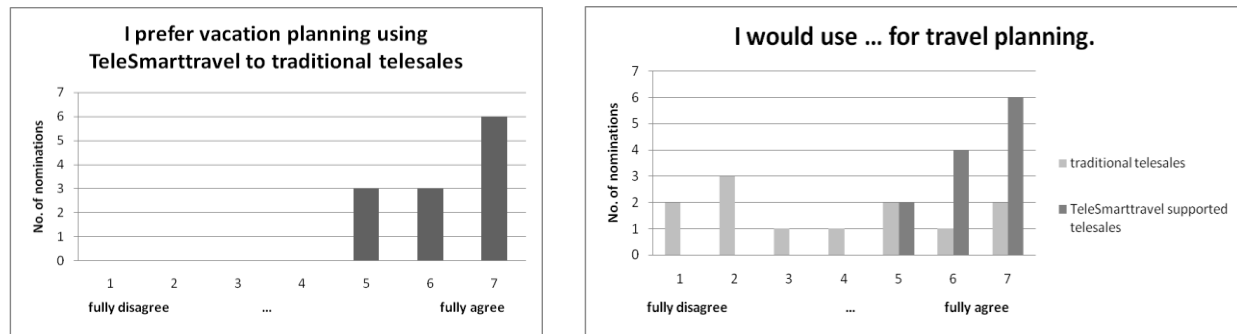


Figure 4. Preference and intention to use: a) Customer preference for TeleSmarttravel supported advisory, b) Customers intention to use traditional telesales vs. TeleSmarttravel supported advisory

Co-browsing itself for synchronized shared viewing and manipulating the system was rated to be greatly helpful (6.42 on avg.) and useful (6.08) for telesales.

Evaluation according to design goals

(1) Increase the trust between customer and agent

Both the traditional telesales situation and the TeleSmarttravel supported setting reflect a high customer rating of perceived benevolence ($B_{avg} = 6.33$ vs. 6.58), honesty ($H_{avg} = 6.58$ vs. 6.67), competence ($C_{avg} = 6.25$ vs. 6.33) and trustworthiness ($T_{avg} = 6.33$ vs. 6.58). Differences are not statistically significant and deliver no further insights. We can assume that customers do not perceive any problems in trustworthiness regarding the agent and the advisory process for the following reason: all participants knew that they were in an artificial situation where they did not have to anticipate any monetary loss. However, we have a few indications that our design ideas were successful.

In providing both parties with the opportunity to upload an image (mandatory to agent, optional to customer) and type in a name (mandatory to both parties), they communicate as human beings. One customer affirmatively mentioned the image of the agent when first recognizing it, as being a “good idea for getting an idea of the counterpart.” The importance of human touch on e-commerce websites is also stressed by Cyr et al. (2006).

(2) Increase the information quality

As we described in the literature section, information quality is a multi-dimensional construct that addresses e.g., up-to-dateness, coherence, and completeness. For the prototype system, evaluating each of the information quality aspects was not feasible. Completeness and up-to-dateness are two aspects that could not be supported, as the implementation had to rely on an incomplete set of test data – though the provided information was judged to be sufficient for a preliminary test advisory by both agents and management. Therefore, evaluation is limited to the presentation of information and its resulting accessibility.

Customers rated the quality (=helpfulness) of the visual representation as 6.42 on average, which indicates a significant advantage over the traditional tele-advisory. Quotes of customers after they had finished their two test trials support that indication:

“It is cool to use TeleSmarttravel because of the visual appeal. It allows to better bridge interruptions of conversation.”

“It is amusing, and it’s easier to follow because of the geographical overview.”

“Using TeleSmarttravel is better because the visualization is available as additional support. Further, I could bridge waiting time by clicking on the map.”

Customers also rated the clarity of interaction and information arrangement (CI) rather low for the traditional setting and significantly higher for the TeleSmarttravel supported setting ($CI_{avg} = 2.75$ vs. 5.75, $p < 0.05$, $df = 22$, $t = -6.17$).

One episode supports the observation that hidden needs can be better made explicit in this setup: one niche product explicitly called the attention of two customers during their TeleSmarttravel advisories. The agents would not have drawn the customers' attention to these products without the customers' requesting them. Since the solution was visible, they started discussing it. Afterwards both the agents and the customers valued this opportunity provided by the shared visualization. The customers could make a hidden need explicit and they could choose from more interesting offers. For the agents, cross-selling opportunities evolved which were not possible in the traditional tele-advisory situation.

(3) Increase the joint problem-solving capabilities of agent and customer

The increased problem-solving capabilities were evaluated by observation of the user behavior and by an evaluation of the advisory results. Providing the problem and solution space to both the customer and agent enabled an equalized communication and transformation of the sales conversation into a collaborative product design process. Observed customers did not hesitate to point at something interesting, and agents naturally did not react as sales agents but as a partner in designing the product ("oh yes, let's have a look").

The agents especially appreciated the visualization on the map and the occurring information markers since they keenly know the difficulties in explaining destinations without the support of a visual system.

The customers were satisfied with the advisory result (result satisfaction = RS). Tele-advisory using TeleSmarttravel scored one half scale point higher than the traditional tele-advisory ($RS_{avg} = 6.08$ vs. 5.58 not statistically significant). The telesales manager pointed out that using the system enabled agents to better understand the needs of the customer. In her opinion, collaboratively seeking for travel solutions was well-supported by the shared mouse (full-duplex) in conjunction with the usage of the phone. The telesales manager confirmed that a complex advisory now was enabled.

(4) Increase the emotional user satisfaction.

The results of the acceptance questions (Figure 5) indicate a positive attitude towards using the system, both for customers and travel agents. All customers and agents considered the use of the system to be a good idea and they all perceived the system as making travel planning more interesting. In sum, they all liked working with the system and considered travel planning with the system to be fun.

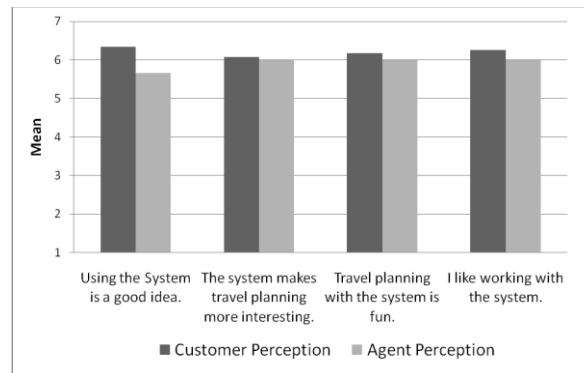


Figure 5. Results of the acceptance questions regarding attitude towards using the system

The results of AttrakDiff2 questionnaire are depicted in Figure 6. The data was tested with a two-sided t-test for samples with differing variances. The results indicate a statistically significant ($p < 0.05$, $df = 20$, $t = -8.83$) higher hedonic stimulation (HQ-S) for the setting using TeleSmarttravel prototype for tele-advisory ($HQ-S_{avg} = 5.38$ vs. 3.08) regarding customers. The difference in pragmatic quality (PQ) is low ($PQ_{avg} = 4.87$ vs. 4.65) and not statistically significant. But retrospectively customers indicated, this difference arises from the perceived main surplus through the visual guidance during a travel tele-advisory session. This reveals a customers' tendency to expect a more traceable advisory with the new system and service provision.

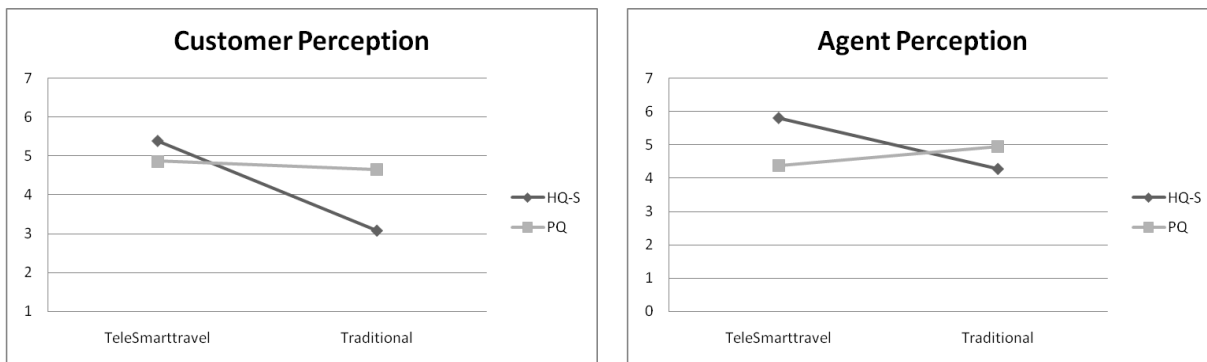


Figure 6. Perception of hedonic quality of stimulation HQ-S and pragmatic quality PQ, a) Customer perception, b) Agent perception

Agents also rate a higher hedonic stimulation (HQ-Savg = 5.81 vs. 4.29) for the advisory setting using TeleSmarttravel. The lower perception of pragmatic quality for the TeleSmarttravel setting by the travel agents (PQavg = 4.95 vs. 4.38) can be explained by the limited set of product data available for the test. Agents called it a “fantastic possibility to actually show” what they were talking about. The agents believe that the possibilities of showing were the most important characteristics of the system. This is supported by the opportunity for customers to use the mouse themselves and therefore leave the decision of watching more or less to the customer in order not to overburden the customer. The telesales manager named the multimedia material, the most attractive part of the system: “Videos and 360°-panorama views are the best kind of showing interesting places in the world!”

Conclusions

The described work started with the definition of general design goals and derived requirements for supporting a collaborative travel advisory from remote. Considering pioneer and state-of-technology systems to support shared sessions via the WWW, an innovative software system (called TeleSmarttravel) was implemented along a user-centered design process that additionally enabled the transfer of design requirements for face-to-face travel advisory support systems to the telesales. Finally, that implementation was evaluated and the results were presented in this article.

Since the clear preference for the TeleSmarttravel-supported remote advisory indicates, considering the four general design requirements leads to suitable advisory support systems. Systems that allow a trusted process of joint problem-solving, integrating high-quality information within a scenario of use that directly also addresses hedonic process needs beyond the instrumental needs will result in a higher perceived user satisfaction. Gaining that satisfaction, consultants can anticipate customer loyalty. Among the general perspective, the main proposal herein is that travel agency call centers should address the value proposition of availing themselves of the weaknesses of the Internet (information is fragmented, information seeking is time-consuming, trustworthiness is hardly verifiable) and using the strengths of the Internet (information variety, up-to-dateness) by integrating the Internet with the human-mediated advisory. That consequently increases the quality of information. Through providing a shared representation with the opportunity to equally interact with the system, the customer becomes an active part in the joint problem-solving process of eliciting her needs and transforming them into concrete product offers. This increases her satisfaction with the social-aware, trustworthy process. Customer-agent relationships, as well as customer retention, become closer. Customers who value the flexibility of a remote advisory and the close contact of personal consultancy are a target group that will perceive a clear value in this scenario of use.

Beyond this scenario, imagine that customers not only can start (as in our evaluation) by calling an agent but also via the Internet platform by clicking just on a button “I need individual advice”, accompanied by the face-to-face scenario, an innovative multi-channel advisory approach is evolving. Thereby, a huge variety of new marketing and customer relationship management opportunities appear that need to be investigated. Connecting the different channels by introducing and maintaining customer travel dossiers may ease the agency-internal knowledge management. Explicit methods for the agents, how to use the system effectively in each scenario, probably would ease the employees’ training and enable a first step to advisory service quality management. Remembering the vicious circle of employees’ de-skilling, our observations as well as the agents’ and manager’s feedback indicate a great chance for learning by providing such a new telesales solution. The process of advisory only differs from the

face-to-face advisory at the very start of a session and then proceeds in a very similar way. One agent who also participated in former tests with face-to-face advisory summarized this fact by these words: “I only have to replace my finger with the mouse.” This strong relation to the opportunities of the face-to-face advisory opens the way to rethink the roles of the agents, e.g., by re-integrate them to the agencies and decentralize the call center.

Regarding our design development and design search process contextualized by user-centered design and scenario-based development, we are convinced that especially when designing systems that mainly support human dialogue as we do with SmartTravel and TeleSmartTravel, this approach delivers valuable, deep knowledge about the context of use with two organizational advantages: user acceptance through early, continuous and suitable (regarding deliverables to feedback on) user involvement, and organizational change initiation through iterative convergence of system design to task demands.

We base our research on support systems for advisory situations on our empirical, explorative work in the field of travel and tourism and the underlying theoretical concepts of trust, the principle-agent conflict, collaboration, and user/advisory experience. Although the generalization of our design to other domains (e.g., financial advisory) remains unclear, we have made a first successful step to a different application type (co-located vs. remote travel advisory) and demonstrated a high congruence between design requirements for supporting a co-located advisory situation and its remote equivalent.

Additionally, the process of developing such system instantiations (user-centered design, see “Development and Research Approach”) complements the research and development with a certain method. Following Hevner et al. (2004), constructs and methods allow the construction of models: our design requirements for travel advisory support systems. The unique criteria stemming from context differences (co-located advisory vs. remote advisory) and their implications (“Analysis of Current Practice and Problems in Travel-Telesales”) extended our design requirements by this specific regard (e.g., need for awareness in remote situations).

Since the cooperating travel agency has committed resources for further investigations, the authors are optimistic to report further insights to the areas of the instrumental design goals but also more generalizable data to the presented telesales scenario. The reported evaluation and data obviously allow only limited generalization due to the small sample of test participants. It is intended to investigate the scenario in a more widespread usage in day-to-day business when a further developed system is implemented to the travel agency telesales.

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