More interactivity with IT support in advisory service encounters?

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Abstract

Advisory service encounters change their character from information provision to joined problem solving, thus increasingly relying on the interactive exchange between the advisor and the advisee. Simultaneously, modern collaborative IT finds its way into service encounters as a method to engineer, enrich, and standardize them. An IT system equipped with interactive features may enhance the encounter's interactivity, but it may also limit it by capturing participants' attention. This study explores the influence of IT on the interactivity in advisory service encounters. It arrives at the conclusion that an extensive *tuning in* precedes a phase of enhanced interactivity in IT-supported advisory service encounters.

1 Introduction

Service encounters are important type of collaboration; they include patient-doctor or student-teacher consultations, as well as other form of collaborations where an expert, i.e., advisor, provides advice on a particular matter and appropriate course of action to a layperson, i.e., advisee. In the era of instant information access, the role of advisory services has improved: whereas standard cases can be solved by the concerned persons based on the publicly available information, providing appropriate solutions in more complex and wicked situations requires expert knowledge and skills offered in form of advisory services. Consequently, the framing of advisory service encounters has changed from information provision by an expert to joined problem solving (Schwabe et al., 2016). As a consequence of this re-framing novel support tools and novel quality measures are necessary to enhance and assess advisory encounters.

In particular, as suggested by the name, *joined* problem solving requires both parties – the advisor and the advisee – to *join* the common effort of understanding the situation under consideration and elaborating a solution. In the face-to-face service encounters, joining in means, primarily, engaging in the communication, understood as conveying of the intended meaning and information. Only if both partners establish a two-directional communication,

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they can proceed with solving the problem – the concept of *interactivity* captures the level to which a two-way communication is present in an encounter (Torres, 1995; Rada, 1995).

The evolution of service encounters towards joined problem solving as well as the digitization of services result in introduction of modern and dedicated collaborative IT systems to enhance and enrich the collaboration. On the one hand, IT equipped with interactive features and being an interactive medium can be expected to improve the interactivity of the whole encounter. On the other hand, IT may capture so many collaborative resources (time, attention, etc.) from the human participants, that the two-way exchange between them will stagnate, thus reducing the encounter's interactivity. To our best knowledge, an exploration of the role IT plays for the interactivity of modern problem-solving-oriented service encounters is missing. IT more and more finds its way into real service encounters in form of tablet-based mobile apps or other systems, e.g., at financial institutions, doctor's offices, and insurance companies. Consequently, we argue for the necessity of exploring the following research question:

RQ: *Does IT support enhance or lessen the interactivity of service encounters?*

The answer to this question shall provide effective guidance on the design of modern IT for advisory services thus helping designers and practitioners in the field. We define *IT support* not only as a technological phenomenon but as technology along with the practices it enables and affords. Consequently, linking IT with the concepts and practices related to joined problem solving, service encounter, and interactivity provides a new lens applicable in similar collaborative scenarios. We apply, present, and argue for a particular operationalization of interactivity which can be propagated in other research. We set our scope to financial service encounters, e.g., encounters that clients attend if they want to make a significant investment. This type of encounters shares a lot with other advisory services such as patient-doctor or supervisor-student encounters: First, in investment advisory service, there is much at stake including people's wealth. Second, mutual trust plays an important role in establishing a long-lasting relationship between the advisee and the advisor. Third, the interpersonal (high-touch) character of the session is shown to be more important for the advisor and the advisee (Mogicato et al., 2009; Schwabe and Nussbaumer, 2009) than the technical and pragmatic issues (low-tech).

2 Related Work

2.1 Challenges and Opportunities of IT in service encounters

Reframing advisory encounters from information provision into joined problem solving bears consequences for the design of simple brochures as well as IT systems. In fact, modern IT is predestined for supporting collaborative service encounters framed as joined problem solving. Traditionally, service encounters were built around the notion of the advisor, an expert who brings all the knowledge and advises an advisee, (i.e. a layperson, a client), what they should do (buy, book, sign) in the given situation. While the problem-solving-based definition keeps the role of the advisor and the advisee, each of them is seen as expert in their own domain: the advisee is the expert in the problem domain – he knows the situation and its limitation best; the advisor is the expert in the solution domain – he knows the range of available solutions and their flexibility. Their encounter deals as space for joined problem solving – each of them brings in their information and they work together towards an optimal solution.

Whereas the traditional definition was built around the concept of a recommendation – an opinion that the expert is producing upon the request from the advisee, the novel definition relies on the concept of a problem and a solution. The problem means the difference between the current state and the desired state, and the solution describes the way between those two states. In joined problem solving the current and desired states need to be agreed upon to enable for a proper search of the solution (Schwabe et al., 2016). In the traditional service encounter IT was built to support the advisor at providing most appropriate recommendation. They were designed to be viewed only by the advisor and reduced the amount of time spend on calculations or bookings; the advisor could turn the screen towards the advisee if they wanted to share it with the advisee (Arvola, 2004). Nowadays, IT focuses on supporting collaboration, i.e., joined problem solving. The solutions break with this tradition and introduce effective help relying on such predicates as: (1) shared screen, (2) joined information spaces, (3) flexible and light-weight, non-rigid processes, (4) transfer of skills and understanding based on experience rather than information (Schwabe et al., 2016; Heinrich et al., 2014; Dolata et al., 2016).

IT developed along those lines was shown to improve knowledge transfer, transparency, empowerment of the advisors and advisees, as well as their motivation to tackle the addressed issues (Nussbaumer et al., 2012a; Heinrich et al., 2014; Dolata et al., 2016; Schwabe et al., 2016). IT has also potential for better documentation of the process as well as its outcomes, for better visualizations, and for streamlining and standardizing the experience across encounters. Nevertheless, studies repeatedly report on the problems regarding the quality of communication and related fears of the involved persons (Schwabe and Nussbaumer, 2009; Kilic et al., 2016). Depending on its features and how it is used, IT may destroy or enrich entrance sequences in advisory encounters (Pearce et al., 2008). This reflects the basic dilemma of *collaboration engineering*, which relies on IT-based interventions to establish re-applicable collaboration patterns (Briggs et al., 2013): IT has many advantages in terms of process and product support, and can enforce specific quality criteria and practices, but bears great challenges if it comes to the quality of communication between people. Understanding the role of IT for the communication quality in collaborative situation is necessary and will remain an ever-open topic. With this study, we want to add a piece of knowledge that may help closing this gap.

2.2 Interactivity

In any *joined problem-solving* encounter, interactivity is a core prerequisite for a successful collaboration. While *interaction* designates the action in which two or more objects have effect on each other, *interactivity* describes the quality and intensity of this action (McMillan, 2005). Interactivity has been a widely discussed topic and plays a central role in such areas as communication science, computer science, marketing and advertising just to mention a few (Johnson et al., 2006). There exist countless definitions of interactivity and all add a new perspective to this complex phenomenon (McMillan, 2005): (1) Some researchers focus on interactive features of media (Markus, 1987) or even single interfaces (Albert et al., 2004) and use interactivity as classification criterion for artifacts. (2) Others define interactivity as experiential measure, i.e., they define the interactivity of an experience through the self-reports of participants or users (Burgoon et al., 1999). (3) Finally, there exist a range of definitions that derive interactivity from more or less observable qualities of the actual interaction. In this category fall definitions using (3a) the *message-based view*, in which the interdependence between consecutive messages is considered as relevant (Rafaeli and Ariel, 2007), and (3b) the *dialogue-based view* that emphasize the conversational nature of interactions (McMillan, 2000; Johnson et al., 2006). According to the latter view, an interactive encounter (3b-I) exhibits reduced time lags between the exchanges of the participants or objects (Bretz, 1983) and (3b-II) makes the role of sender and recipient of a message easily interchangeable (Rice, 1984). In other words, both participants of the exchange often take floor without additional lags.

This study follows the dialogue-based view on interactivity and uses a particular definition proposed by Johnson et al. (2006) for several reasons: (1) we observe real, face-to-face communication framed as dialogue, (2) this view and the according definition attract more and more attention in the recent years, especially in the area service science, to approach the topic of novel service encounters, (3) the definition was designed to bridge the gap between technology- and human-oriented concepts of interactivity. Johnson et al. see the general interactivity as derivative from the non-mediated (behavioral) interaction and mediated (technology-based) interaction, which both result in an experience of interactivity. Johnson et al. account for *reciprocity*, *responsiveness* (being a specific form of reciprocity), *nonverbal behavior*, and *speed of response* as dimensions that define interactivity in all interactions.

Reciprocity is widely acknowledged in the interactivity literature and is put on a par with “dialogue”, “participate”, “iterative”, “two-way communication”, “actions and reactions”, and “talking back” (cf. Johnson et al., 2006, for further references). In a reciprocal exchange, participants engage in a more balanced communication where they alternately play the role of sender and receiver, as opposite to a monologue with a single dominating part. If messages in an exchange build content wise upon each other, we talk about responsiveness. *Speed of response* refers to the extent to which messages in an exchange occur in real time or with delay. A minimum delay contributes to the continuity of the exchange, but delayed responses, signalized by breaks and pauses, hinder communication flows, lead to information losses, and reduce the overall interactivity of the exchange (Johnson et al., 2006). Also the definitions mentioned earlier (3b-I and II) stress the role of reciprocity and speed of response, as central and most settled ones within the dialogue-based conceptualization of interactivity.

Importantly, establishing a smooth verbal communication, including easy role-switching in a balanced and breakdown-free manner, i.e., with high reciprocity and speed of response, requires a preparatory phase. This early phase has been described as *tuning-in relationship*. It originates from music and denotes the process at the beginning of an improvisation: the participants involve in a process of synchronizing their inner time with the group – they *tune in* (Schütz, 1951). In doing so, they establish a single rhythmic structure. The analogy is adapted by Gregory and Hoyt (1982) to describe the mutual adjustment of communication partners.

3 Methodology

Figure 1: Design of the prototype Touch Table *deployed on a 30-inch horizontal touch display.*

In order to answer the research question, we conduct secondary data analysis (Dolata et al., 2015) of 18 videos of realistic advisory session from two identically designed within-subject experiments with a major Swiss bank (cf., Nussbaumer et al., 2012b). The experimental advisory sessions were conducted with a group of real retail-sector financial advisors and test advisees who were acquired through convenience sampling by postings on a university job marketplace. The test advisees were paid approx. 50 EUR (instructions of the local psychology department) for their participation of overall three hours including running through IT and non-IT conditions. Before the tests, the advisees received a 15-minute introduction, a hypothetical financial profile, and a scenario to follow. They should receive an advice on investing a given amount of money (up to 250’000 EUR), while considering a financial need (e.g., buying a car). The advisors were trained to use the introduced tool a few days in advance and additionally at the day of the experiment. The considered videos come from three different treatments (6 videos from each): (A) *No IT* – service conducted without no IT but with pen and paper, as usually in this bank, (B) *Tablet* – service conducted with use of a prototype deployed on a 10-inch tablet computer, (C) *Touch Table* – service conducted with use of a prototype deployed on a multi-touch tabletop device with a 30-inch flat display.

The systems used in this research were developed in a user-centered design science research project with the goal of improving transparency in financial advisory encounters. The *Tablet* and the *Touch Table* systems were designed according to state-of-the-art design principles and proven to possess as high usability as the pen-and-paper setting (Nussbaumer et al., 2012b). In particular, the prototypes implement the following features: shared information screen, “at one sight”-overview, flexible handling

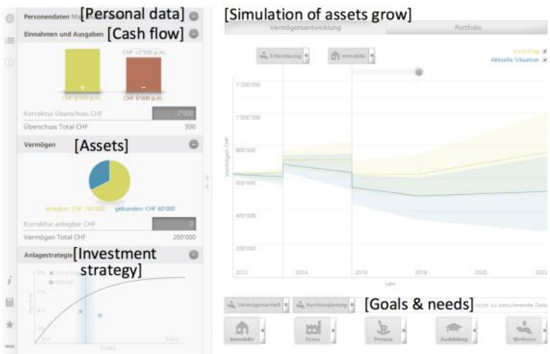

Figure 2: Design of the prototype Tablet *on a 10-inch display.*

without explicated process steps, and personalization of information and visualizations (Nussbaumer et al., 2012b; Figures 1 and 2). This study uses the systems as vehicles to observe influence of a dedicated IT on the interactivity.

To counterbalance the order effects, we randomly assigned the advisees to start with either an IT-supported or conventional condition. Each session took approximately 30 minutes. The video footage was coded with ELAN (Brugman and Russel, 2004). Two assistants coded the following layers: verbal activity of advisor and advisee, usage of tools, and further notes. High inter-rater agreement and reliability on a sample of eight five-minute segments assure the data quality (agreement: Cronbach's α=0.866; reliability: ICC=0.765; cf. Gwet (2012)).

All patterns reported in the subsequent chapter use the notion of a time segment. To observe dominating trends in communication, each advisory session was divided in five equal time segments. All measurements (advisees' and advisors' amount of talk, pauses) are then aggregated for each time segment. We present trend graphs using averaged numbers of all videos. The length of time segments (approx. 6 minutes) is chosen deliberately: it is longer than a statistical cyclic turn but shorter than any predefined stages of the advisory service.

In our results, we report on the data on verbal activity of the advisor and the advisee: (1) First, we consider patterns of silence, defined as moments when no one speaks. In this analysis, we only consider pauses longer than 1300 milliseconds, thus above the standard silence metric proposed in the literature (Jefferson, 1989). We ignore silence moments occurring clearly due to the usage of the tools, as well as occurring during "technical breaks", i.e., we retain only *unfilled pauses*. The higher the amount of unfilled pauses, the lower the *speed of response*, and consequently the lower the interactivity. (2) Second, we make observations on the amount of talk in particular time segments. This enables for identification of particular speakers' dominance in the phases. If one of the speakers clearly dominates the stage and takes much floor in his or her turns, the participation of the other collaboration partner naturally reduces, thus leading to reduced *reciprocity*, and consequently to a lower interactivity of collaboration.

In addition to reporting on the above measures, we calculate their average amplitudes: In particular, for each video we compute the difference between phases with the highest and the lowest values of the variable to obtain the video's specific amplitude. Amplitudes show how volatile the given variable is if observed across the time segments and videos. If taken together with the provided trends in communication, they illustrate whether a participant tends to dominate or be submissive in a particular phase.

4 Results

The results reported below deal with the *amount of talk* of the advisee and the advisor to show effects of IT on *reciprocity* in communication, as well as *unfilled pauses* to illustrate effects on the *speed of response*.

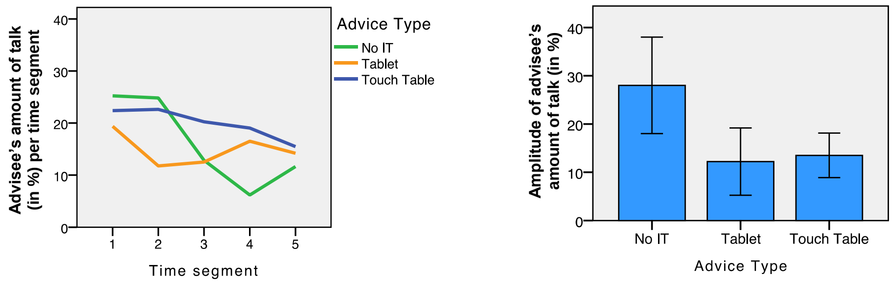

Figure 3: Left: Trends in advisee's amount of talk throughout the session.
Right: Averaged amplitudes of advisee's amount of talk (error bars: 95% CI)

As depicted in Figure 3 (left), advisee's amount of talk in all three conditions is rather low and oscillates on average around 20% of the overall duration of the advice. In the IT conditions, the variances are small, but we observe a considerable drop between second and fourth time segment in the *No IT* condition. This is reflected in amplitudes computations (see Figure 3, right). The *No IT* condition exhibits significantly higher amplitudes than both IT conditions (A vs. B: p=.006, t=4.484, df=5.000; A vs. C: p=.007, t=3.382, df=10.000), while there is no significant difference between the IT conditions.

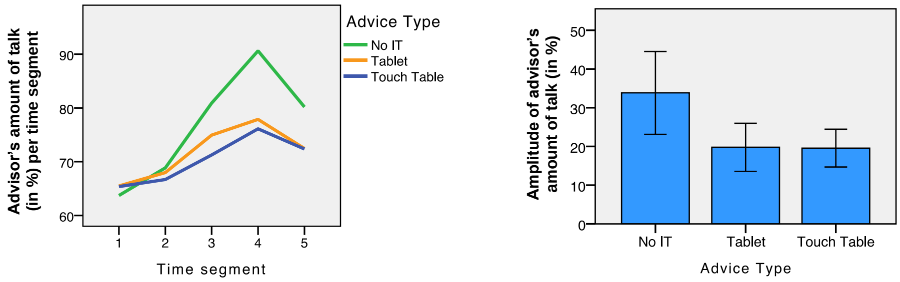

Figure 4: Left: Trends in advisor's amount of talk throughout the session.
Right: Averaged amplitudes of advisor's amount of talk (error bars: 95% CI).

Complementary trends occur in advisor's amount of talk which oscillates around 70% - 90% (Figure 4). This reflects the strong domination of the advisor in all settings. Interestingly, in each condition, the trend line reaches its high in the second last time segment. In the *No IT* case, this growth is twice as high as in the IT cases as illustrated by the average amplitude (A vs. B: p=.05, t=2.552, df=5; A vs. C: p=.017, t=3.115, df=6.983; cf. Figure 4, right).

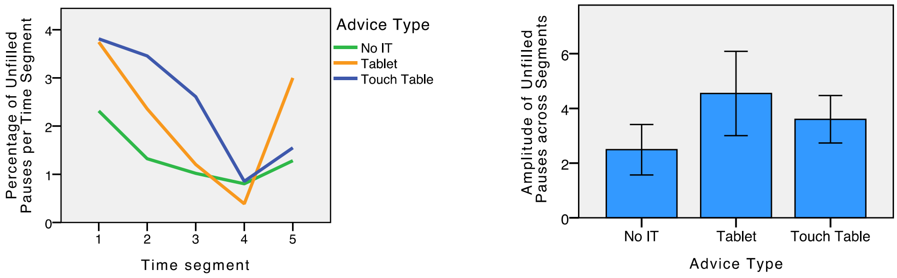

Figure 5: Left: Trends in occurrence of unfilled pauses throughout the advisory session. Right: Averaged amplitudes of amount of unfilled pauses (error bars: 95% CI)

The observations we make on silence (cf. Figure 5) add to the picture. Clearly, in each condition unfilled pauses occur more often in the early phase while getting less towards the end. Particularly, in the fourth time segment all conditions reach the same, very low, level of mutual silencing. Interestingly, at the beginning of the advisor session silence occupies in the IT conditions approx. 4 % of the overall time, whereas in the *No IT* case it reaches 2%. Reported fluctuations reflected by the amplitudes of unfilled pauses across time segments (A vs. B: p=.006, t=-4.516, df=5; A vs. C: p=.047, t=-2.264, df=10; cf. Figure 4, bottom).

5 Discussion and Conclusion

	Early phase	Late phase
Speed of response	IT < No IT	IT ≈ No IT
Reciprocity	IT ≈ No IT	IT > No IT
Interactivity	**IT < No IT**	**IT > No IT**

Table 1: Summary of the results regarding influence of IT on interactivity in advisory encounters

Coming back to the question whether IT enhances or lessens the encounter's *interactivity*, the above results provide a complex but consistent picture: the interactivity in IT-supported encounters suffers from lower *speed of response* in the early phases, but benefits from higher *reciprocity* later on. Table 1 summarizes this insight: (1) Regarding the *speed of response* – operationalized by the distribution of unfilled pauses – the early time segments of IT-supported encounters exhibit substantially less *speed of response* (more unfilled pauses) than the *No IT* case. In the later phase, the *speed of response* is comparable across the conditions. (2) Regarding the *reciprocity* – operationalized by the advisor's and advisee's amount of talk – all conditions exhibit similar patterns in the early phase of the encounter. However, in the later time segments, the advisor's dominance over the advisee grows and is substantially higher in the *No IT* condition than in the other ones. When the advisor takes 90% of the floor and leaves less than 10% to the advisee (i.e., just every tenth word is produced by the advisee) the chance of a reciprocal exchange is low. In the IT conditions this ratio changes for better: the advisee is able to take 20% of the floor (i.e., he can contribute every fifth word). Overall, the above analysis shows that IT impedes the interactivity in the early phases of the encounter, thus making the *joined problem solving* (Schwabe et al., 2016) difficult, but later it improves the interactivity defined as a dialogue-based feature (McMillan, 2005; Bretz, 1983; Rice, 1984).

We postulate that designing for highly interactive collaboration during service encounters should be among the declared goals of this particular sub-discipline, along with the previously approached topics such as: knowledge transfer (Heinrich et al., 2014), transparency (Nussbaumer et al., 2012a), persuasion (Dolata et al., 2016), and empowerment (Giesbrecht et al., 2016). This paper is the first to show how modern and dedicated IT for advisory services can improve the quality of verbal communication between the advisor and the advisee. It confirms the essential role that adaption of communication practices plays for the appropriation of collaborative software in co-located meetings. The lens, we propose in this paper, points to specific problems undetectable with other methods traditionally employed in evaluation of novel designs, such as the technology acceptance model and related measure instruments.

In particular, we point to dimension of *time* in the sense of duration of the advisory service. We argue it shall be included in the discussion on what challenges and opportunities are brought with inclusion of novel IT into service encounters. While in the early collaboration phase, the presence of collaborative IT generates additional challenge for the interpersonal communication, the observation in the later phases show that IT also bears additional potential to improve the interactivity and consequently the collaboration quality.

The *tuning-in relationship* (Gregory and Hoyt, 1982) provides an explanation to the observed patterns. While extending this metaphor, we argue that the IT tool in the encounter is an additional instrument added to the standard situation. In the early phases, the *tuning in* takes more time and is more intensive, thus the *speed of response* drops so visibly. As time goes by and the mutual adjustment progresses, hesitations diminish and a novel configuration and positioning is possible, i.e., novel patterns of communication emerge – ones that offer possibilities for more reciprocity. In other words, instead of two soloists in the ensemble, through introduction of an interactive IT tool, we get a trio. Consequently, the dyadic model of dominance and submission evolves and opens space for new forms of collaboration. This explanation sheds new light on the negative influence of IT on interpersonal communication in advisory settings reported earlier (Pearce et al., 2008; Kilic et al., 2016).

Consequently, we postulate to include *time* dimension into the design and use of collaborative systems, especially for the advisory scenario. Introducing IT for a short time may, in fact, have negative effects on the interpersonal communication that outstrip any positive effect of IT during the whole collaboration. If the implementation of such systems in practice is conducted along the lines of collaboration engineering (Briggs et al., 2013), it is necessary to consider redesign of service encounters to allow for appropriate *tuning in* in the early phases, i.e., specific scripts (ThinkLets) or set of restrictions need to be put in place in order to support effective tuning in – this will allow for the desired *joined problem-solving* effects to occur.

While the current research took the first explorative step towards understanding the role of interactivity in IT-supported service encounters, it suggests further potential in this area. Already the nascent results presented in here suggest the importance of this perspective for further design and research. Designers of dedicated IT for service encounters benefit from better view on the between the *problem-solving* character of such encounters and the character of interpersonal communication. Furthermore, they may consider the concept of *tuning in* helpful for leveraging the early phases of the encounter and streamlining the later ones, so that the participants can focus on problem solving once they are *tuned in*. Researchers in the area of collaborative systems benefit from the new, interactivity-oriented perspective on collaboration including the adaptation and operationalization of the *dialogue-based* view on *interactivity* for observing interpersonal processes in collaboration. Additionally, they may find it attractive to follow up on the research path proposed in here, which leaves the – so far more popular – interactivity concepts focused on technology or self-perception. Consequently, we ask: Can one observe similar interactivity patterns in other scenarios than advisory services? How should we design IT systems to reduce the tuning in to the minimum? How does tuning in in collaborative setting differ from adapting to a new system in an individual usage scenario?

References

Albert, T.C., Goes, P.B., and Gupta, A. (2004): ‘GIST: a model for design and management of content and interactivity of customer-centric web sites’, *MIS Quarterly*, pp. 161–182.

Arvola, M. (2004): *Shades of use: the dynamics of interaction design for sociable use*, Univ, Linköping.

Bretz, R. (1983): *Media for interactive communication*, Sage Publications, Beverly Hills, CA, USA.

Briggs, R.O., Nunamaker, J.F., and Romano, N.J. (2013): ‘A Six-Layer Model of Collaboration’, in *Collaboration Systems: Concept, Value, and Use*, pp. 211–227.

Brugman, H. and Russel, A. (2004): ‘Annotating Multi-media/Multi-modal Resources with ELAN.’, in *Proc. Intl. Conf. Language Resources and Evaluation*.

Burgoon, J.K., Bonito, J.A., Bengtsson, B., Ramjrez, J., Dunbar, N.E., and Miczo, N. (1999): ‘Testing the Interactivity Model’, *Journal of Management Information Systems*, vol. 16, no. 3, pp. 33–56.

Dolata, M., Comes, T., Schenk, B., and Schwabe, G. (2016): ‘Persuasive Practices: Learning from Home Security Advisory Services’, in *Proc. Intl. Conf. Persuasive Technology*, pp. 176–188.

Dolata, M., Kilic, M., and Schwabe, G. (2015): ‘Unpacking the Artifact Knowledge: Secondary Data Analysis in Design Science Research’, in *Proc. Intl. Conf. DSR in IS and Technology*, pp. 327–342.

Giesbrecht, T., Schwabe, G., and Schenk, B. (2016): ‘Service encounter thinklets: how to empower service agents to put value co-creation into practice’, *Information Systems Journal*.

Gregory, S.W. and Hoyt, B.R. (1982): ‘Conversation partner mutual adaptation as demonstrated by Fourier series analysis’, *Journal of Psycholinguistic Research*, vol. 11, no. 1, pp. 35–46.

Gwet, K.L. (2012): *Handbook of inter-rater reliability: the definitive guide to measuring the extent of agreement among raters*, Advanced Analytics, LLC, Gaithersburg, MD.

Heinrich, P., Kilic, M., and Schwabe, G. (2014): ‘Microworlds as the locus of consumer education in financial advisory services’, *Proc. Intl. Conf. on Information Systems*.

Jefferson, G. (1989): 'Notes on a possible metric which provides for a "standard maximum" silence of approximately one second in conversation.', in *Conversation: An interdisciplinary perspective*.

Johnson, G.J., Bruner II, G.C., and Kumar, A. (2006): 'Interactivity and its Facets Revisited: Theory and Empirical Test', *Journal of Advertising*, vol. 35, no. 4, pp. 35–52.

Kilic, M., Dolata, M., and Schwabe, G. (2016): 'How IT-Artifacts Disturb Advice Giving – Insights from Analyzing Implicit Communication', in *Proc. Hawaii Intl. Conf. System Sciences*, pp. 878–887.

Markus, M.L. (1987): 'Toward a "Critical Mass" Theory of Interactive Media Universal Access, Interdependence and Diffusion', *Communication Research*, vol. 14, no. 5, pp. 491–511.

McMillan, S. (2005): 'Exploring models of interactivity from multiple research traditions: users, documents and systems', *Handbook of new media*, vol. 2, pp. 205–29.

McMillan, S.J. (2000): 'Interactivity Is in the Eye of the Beholder: Function', in *Proc. Conf. Amer. Academy of Advertising*.

Mogicato, R., Schwabe, G., Nussbaumer, P., Stehli, E., and Eberhard, M. (2009): 'Beratungsqualität in Banken. Was der kunde erwartet. was der Kunde erlebt'

Nussbaumer, P., Matter, I., and Schwabe, G. (2012a): '"Enforced" vs. "Casual" Transparency - Findings from IT-Supported Financial Advisory Encounters', *ACM Transactions on Management Information Systems*, vol. 3, no. 2, pp. 11:1–11:19.

Nussbaumer, P. (2012b): Essays on transparent IT support for asymmetric client-advisor encounters, Dept. of Informatics, University of Zurich.

Pearce, C., Trumble, S., Arnold, M., Dwan, K., and Phillips, C. (2008): 'Computers in the new consultation: within the first minute', *Family Practice*, vol. 25, no. 3, pp. 202–208.

Rada, R. (1995): *Interactive Media*, Springer New York, New York, NY.

Rafaeli, S. and Ariel, Y. (2007): 'Assessing interactivity in computer-mediated', *Oxford Handbook of Internet Psychology*, pp. 71.

Rice, R.E. (1984): 'New media and technology: growth and integration', in R.E. Rice (eds.): *The New media: communication, research, and technology*.

Schütz, A. (1951): 'Making music together: A study in social relationship', *Social Research*, pp. 76–97.

Schwabe, G. and Nussbaumer, P. (2009): 'Why information technology is not being used for financial advisory', *Proc. European Conf. on Information Systems*.

Schwabe, G., Briggs, R.O., and Giesbrecht, T. (2016): 'Advancing Collaboration Engineering: New ThinkLets for Dyadic Problem Solving and an Application for Mobile Advisory Services', in *Hawaii Intl. Conf. System Sciences*, pp. 787–796.

Torres, F.A. (1995): *Towards a universal theory of media interactivity: developing a proper context*.