

## Association for Information Systems AIS Electronic Library (AISeL)

AMCIS 2008 Proceedings

Americas Conference on Information Systems  
(AMCIS)

2008

# B2C Advice on Complex Service Products via Video Calls: Explanations from Social Presence and Adaptive Structuration Theory

Mirjam Schmidt

*University of Maastricht*, [m.schmidt@mw.unimaas.nl](mailto:m.schmidt@mw.unimaas.nl)

Rita M. Walczuch

*University of Maastricht*, [r.walczuch@aim.unimaas.nl](mailto:r.walczuch@aim.unimaas.nl)

Ko de Ruyter

*University of Maastricht*, [k.deruyter@mw.unimaas.nl](mailto:k.deruyter@mw.unimaas.nl)

Follow this and additional works at: <http://aisel.aisnet.org/amcis2008>

### Recommended Citation

Schmidt, Mirjam; Walczuch, Rita M.; and Ruyter, Ko de, "B2C Advice on Complex Service Products via Video Calls: Explanations from Social Presence and Adaptive Structuration Theory" (2008). *AMCIS 2008 Proceedings*. 25.  
<http://aisel.aisnet.org/amcis2008/25>

This material is brought to you by the Americas Conference on Information Systems (AMCIS) at AIS Electronic Library (AISeL). It has been accepted for inclusion in AMCIS 2008 Proceedings by an authorized administrator of AIS Electronic Library (AISeL). For more information, please contact [elibrary@aisnet.org](mailto:elibrary@aisnet.org).

# **B2C Advice on Complex Service Products via Video Calls: Explanations from Social Presence and Adaptive Structuration Theory**

**Mirjam Schmidt**  
Maastricht University  
m.schmidt@mw.unimaas.nl

**Rita M. Walczuch**  
Maastricht University  
r.walczuch@aim.unimaas.nl

**Ko de Ruyter**  
Maastricht University  
k.deruyter@mw.unimaas.nl

## **ABSTRACT**

At the beginning of the 21<sup>st</sup> century, most service companies maintain relationships with their customers without any face to face communication. Companies are increasingly looking for solutions to raise personal contact with their customers while keeping a high efficiency level. Social Presence means that people can feel like being together even when their conversation is technology-mediated. We build upon Adaptive Structuration Theory to explain under which conditions the highest levels of Social Presence can be achieved.

Surveys and (field) experiments are combined (1) to develop a powerful measurement instrument for Social Presence, (2) to research in which situations technology-mediated communication is perceived to be the most “personal” and (3) whether Social Presence can account for higher levels of relationship building.

## **Keywords**

Video Call, Social Presence, Adaptive Structuration Theory, Communication Style,

## **INTRODUCTION**

In the past, many face-to-face interactions between customers and service companies have been replaced by online interactions. Faster internet connections allow to increase media richness of these interactions by using video calls. According to Social Presence Theory, media richness should increase the feeling of Social Presence (also described as “being together”). But is providing richer communication channels the only thing companies can do to increase this Social Presence?

And does the creation of Social Presence pay off for companies?

This research project addresses the following addresses the following problem statement:

*How can video calls be designed to optimize intentions to trust and continue the relationship in a service environment?*

The following research questions will be posted:

- 1) How can Adaptive Structuration Theory inform Social Presence Theory?
- 2) What effects has Social Presence on Trusting Intentions and Relationship Building?

## SOCIAL PRESENCE AND CONVERSATIONAL INVOLVEMENT

More than three decades ago, Short, Williams and Christie (1976) introduced the concept of Social Presence (SP). They defined SP as being the “degree of salience of the other person in the interaction and the consequent salience of the interpersonal relationships [... which... ] is an important key to understanding person-to-person telecommunications” (p.65). Short et al. argued that SP is a one-dimensional concept, even though they name actually two aspects by focusing on the salience of the person and the relationship. Most researchers today seem to agree that Presence consists of several dimensions (e.g. Heeter, 1992, Harms and Biocca, 2004). In most factor analyses, one dimension relates to physical/spatial Presence. However, the vast majority of studies in the field focus on virtual environments, in which verbal communication between humans plays no role. Most measurement inventories also include “Involvement” as one aspect of (Social) Presence (Witmer and Singer, 1998, Lessiter et al., 2001, Schubert et al., 1999). We argue that Involvement is rather a state which forms the condition for Presence to happen: Once a person is really involved into a conversation, he or she might feel the Presence of the other party. Since this relationship is reflected insufficiently in previous research, we propose to separate Conversational Involvement (CI) and SP with the following definitions:

***Social Presence (SP)** is the perception of a human being during a technology-mediated interaction. It consists of two subdimensions one being “physical presence” that deals with the perception of being physically together, and one that consists of the “presence of the reciprocal emotional relationship” formed between the humans communicating in a mediated environment.*

***Conversational involvement (CI)** in technology-mediated communication is a state in which a communication partner focuses his or her interest and attention on the communication.*

### How can Adaptive Structuration Theory (AST) inform Social Presence Theory?

Social Presence theory argues that conversations via richer media lead to more social presence (Short et al., 1976). However, it was proposed that also other factors facilitate whether or not SP is felt. Harms (2004) shows that a previous existing relationship between communication partners has a positive impact on the level of SP felt. Other authors propose also certain user characteristics or the task to contribute to the perceived feeling of Presence (e.g. Lessiter et al., 2001). This proposition is in line with AST which names – next to technology - number of other factors that function as “sources of structure”. These “sources of structure” cause a certain output in a communicative interaction (DeSanctis and Poole, 1994). We propose SP to be one output of such an interaction, and CI to be a process that takes place during the interaction. By identifying CI as an antecedent of SP, firstly, the black box in AST opens up: CI could be the “Social Interaction”, which is the antecedent of the “Output” in AST. Secondly, Social Presence theory is expanded by an explanation of how the feeling of SP occurs.

### What effects has Social Presence on Consumer’s relationship building?

SP on websites has been linked to purchase intentions with trust being a mediator (Gefen and Straub, 2004). However, this study was not applied to a human-to-human interaction, and it was done with a SP Scale that is different from the actual definition of SP. It is expected that SP has a positive impact on purchase intentions, but this relationships needs to be empirically tested.

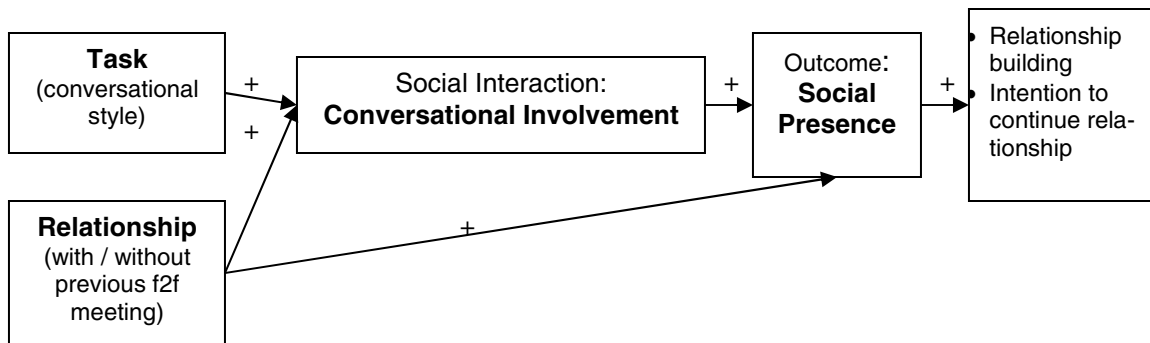
**Task:** Here, the conversational style was chosen to be a form of the task. When advising a customer on a service product, a sales employee can do so by actively consulting the customer and adapting the products to the customer’s needs, or by merely informing the customer on the products and its benefits, independent of whether or nor the products fits to the customer. We assume that these 2 different conversational styles represent two different levels of co-production from the customer: While in the consulting style, the customer is actively invited to provide information to adjust the product to his needs, in the information style the customer is only provided with information. The level of co-production is low in this case. We assume that in the consulting style, the customer is more involved into the conversation than in the information style and formulate the following hypothesis:

*H1: Customers will feel a higher level of Conversational Involvement if they are advised in an consulting style rather than in an information style.*

**Relationship** (Group's internal system): DeSanctis and Poole name the group's internal system to be one source of structure that influences the social interaction. This construct consists of several sub-constructs. While the relationship between the partners is not specifically named, previous research has found that the pure knowledge of the other person has an influence on perceived Social Presence (Harms, 2004). We think that the same holds for conversational involvement: Once people know each other, they are likely to much more focus on the other person that they know, rather than on an unknown person. Therefore we formulate the following hypotheses:

*H2a: Customers will feel a higher level of Conversational Involvement if they have an existing relationship with the advisor before their first technology-mediated conversation.*

*H2b: Customers will feel a higher level of Social Presence if they have an existing relationship with the advisor before their first technology-mediated conversation.*



**Figure 1: Conceptual model based on Adaptive Structuration Theory**

Conversational Involvement is a state in which a person may be while interacting with another human being. We argue that being involved into the conversation forms the condition for Social presence to happen: Only once a person is fully involved into a conversation, he or she will have the feeling that the other person was present with him, and will fully perceive the emotions of the communication partner. This is supported by previous research which identified involvement to be a factor of Social Presence in factor analysis, but failed to identify it as an antecedent (e.g. Witmer and Singer, 1998, Lessiter et al., 2001). We therefore formulate the following hypothesis:

*H3: Customers who are more involved into a conversation will also feel more Social Presence.*

While the original AST stops with the “outcome” of the Social Interaction, researchers and practitioners might wonder why Social Presence is important and what this means for a company if customers feel higher levels of Social presence. We argue that when customers feel the presence of the communication partner, they are more likely to form trusting intentions and are more likely to continue the relationship.

*H4: Customers who feel more Social Presence have higher intentions to continue the relationship and higher trusting*

## RESEARCH METHOD

The research model shall be tested with an experiment. First, development of the survey instrument for SP and CI will be described, and second the set-up of the experiment will be explained.

### Development of the survey instrument

#### *Measure for Social presence and Conversational Involvement*

As described above, social presence seems to exist of two dimensions: physical and presence of a reciprocal emotional relationship. However, most measurement scales focus only on the physical aspect, can only be applied for rich media with visual cues (e.g. “The displayed environment seemed natural” from the ITC-SOPI by Lessiter et al.2001), are very long (e.g. Lessiter et al: 44 items) and do not include appropriate items to be used when evaluating a conversation between humans. To the best of our knowledge, only one scale exists that measures SP on websites in 5 questions (Gefen and Straub, 2004). How-

ever, this instrument seems to fit poorly to most definitions of SP and appears somehow inappropriate to measure SP during a conversation between humans.

Therefore a survey was executed among second year bachelor students with data on 48 statements on SP and CI (35 taken from existing scales) (n=334). Students were asked to refer to their last communication via an instant messaging program. These items, including the 5 items developed by Gefen and Straub (2004) were analyzed in a factor analysis. After analyzing Eigenvalues of each statement, the Screeplot and the factor loadings, several items were deleted, and the best 4 items for CI and for each dimension of SP were maintained. As it can be seen from appendix A, the 12 items load as expected. The items developed by Gefen and Straub form a separate factor, one item loads marginally on the wrong factor.

To confirm the 3 factors, a second data collection was performed among 125 second year bachelor students. The results can be seen in Appendix B; the findings of the first analysis are unconditionally confirmed.

Both analyses indicate that SP can be discriminated from CI and that 2 dimensions of SP can be theoretically supported and found in practice. This short questionnaire provides researchers with a tool to measure SP and CI by means of a survey with only 12 questions for both constructs.

*Measure for trusting intentions / intention to continue the relationship*  
Trusting Intentions will be taken from McKnight et al. (2002).

### Set-up of the experiment

In an experiment, 120 students shall communicate with a financial advisor about a complex financial product (private retirement provisions). The conversations will last 20 minutes each, and will be executed via a video-communication program (Skype) with a high-end webcam. After the interaction, participants will be asked to fill in a survey. Participants will be randomly assigned to the following conditions:

*Relationship (With / without previous face-to-face meeting):* This state simulates an existing relationship. In the experiment, a part of the participants will be asked to drink a coffee / tea with their advisor (who will be standing near the entrance of the lab), and part will not have this meeting. They will get told that their advisor is still in a conversation with the previous student. Due to the facilities at the university, the participants will actually see the previous group to leave the room and have to enter the room immediately (no communication will be allowed). This will make the statement credible.

*Conversational style (Information task/ consulting task):* This state manipulates the way the product is presented to the participant. In the information task, the advisor mainly informs the participant about a product. In the consulting task, the advisor asks the participant to disclose information on himself, based on which a product will be offered that meets exactly his needs. In the survey a manipulation check will reveal whether the conversational style is actually perceived to be different. A pre-test of the experiment was executed in February. The participants did not perceive the coffee drinking to be part of the experiment, and the results of the manipulation were highly significant. The results of the final experiment will be presented at the AMCIS 2008.

	with f2f meeting	No meeting
Information task	n=30	n=30
Consulting task	n=30	n=30

**Table 1: experimental conditions**

### IMPLICATIONS

If the hypotheses are supported as expected, we can show that other factors than technology have a significant impact on SP as predicted by AST. Companies will be able to influence SP not only by offering richer communication channels, but also by manipulating the conversational style or assign customers to fixed advisors (to enable them to build up a relationship during several service encounters). Researchers will have extended knowledge on antecedents and consequences of SP in human interactions.

**REFERENCES**

1. Coker, D. A. and Burgoon, J. (1987) The Nature of Conversational Involvement and Nonverbal Encoding Patterns, *Human Communication Research*, 13, 4, 463-494.
2. DeSanctis, G. and Poole, M. S. (1994) Capturing the Complexity in Advanced Technology Use: Adaptive Structuration Theory, *Organization Science*, 5, 2, 121-147.
3. Gefen, D. and Straub, D. W. (2004) Consumer trust in B2C e-Commerce and the importance of social presence: experiments in e-Products and e-Services *Omega* 32, 6, 407-424.
4. Harms, C. (2004) The Effects of Media Type and Personal Relationship on Perceptions of Social Presence. East Lansing, Michigan State University, Doctoral Dissertation.
5. Harms, C. and Biocca, F. (2004) Internal Consistency and Reliability of the Networked Minds Social Presence Measure. *PRESENCE 2004: The 7th Annual International Workshop on Presence*, October 13 – 15, Valencia, Spain.
6. Heeter, C. (1992) Being There: The subjective experience of presence." *Presence: Teleoperators & Virtual Environments*, 1, 2, 262-271.
7. Hwang, H. S. and Lombard, M. (2006) Understanding Instant Messaging: Gratifications and Social Presence. *Presence: 2006: The 9th Annual International Workshop on Presence*, October 16-18, Cleveland, Ohio, USA.
8. Lessiter, J., Freeman, J., Keogh, E. et al. (2001) A Cross-Media Presence Questionnaire: The ITC-Sense of Presence Inventory, *Presence: Teleoperators & Virtual Environments*, 10, 3, 282-297.
9. Mühlbach, L., Bocker, M. and Prussog, A. (1995) Telepresence in Videocommunications: A Study on Stereoscopy and Individual Eye Contact, *Human Factors*, 37, 22, 290-305.
10. Schubert, T. W., Friedmann, F. and Regenbrecht, H.T. (1999) De-composing the Sense of Presence: Factor Analysis Insights. *Presence 1999: The 2nd Annual International Workshop on Presence*, April 6-7, Colchester, UK.
11. Short, J., Williams, E. and Christie, B. (1976) *The Social Psychology of Telecommunications*, John Wiley & Sons, London.
12. Witmer, B. G. and Singer, M. J. (1998) Measuring Presence in Virtual Environments: A Presence Questionnaire, *Presence: Teleoperators & Virtual Environments* 7, 3, 225-240.

**Appendix A – results of the first factor analysis (development of the survey instrument)**

	EP*	CI*	PP*	GS*
I was able to sense the emotions of my communication partner. [A]	.850			
I was able to sense the feelings of my communication partner. [A]	.799			
I could tell how my communication partner felt. [B]	.760			
I was influenced by the mood of my communication partner. [A]	.628			
My communication partner did not receive my full attention. [B]		.843		
I was distracted during the conversation. [C]		.818		
I was focused during the conversation. [C]		.759		
I remained focused on my communication partner throughout our interaction. [B]		.710		
I felt as if my communication partner and I were located in the same room. [D]			.817	
I forgot that my communication partner was not in the same room as I. [A]			.771	
When we ended the conversation, it felt as if my communication partner had left the room. [A]			.745	
When we started the conversation, it felt as if my communication partner had entered the room. [A]			.674	
During the conversation I perceived as sense of human warmth. [E]			.358	
During the conversation I perceived as sense of personalness. [E]				-.775
During the conversation I perceived as sense of sociability. [E]				-.728
During the conversation I perceived as sense of human contact. [E]				-.680
During the conversation I perceived as sense of human sensitivity. [E]				-.503

**Sources of items:** A (own design); B = (Harms and Biocca, 2004); C = (Coker and Burgoon, 1987); D = (Hwang and Lombard, 2006, Mühlbach et al., 1995); E = (Gefen and Straub, 2004)

\*EP = Presence of emotional reciprocal relationship; CI = Conversational Involvement; PP = Physical Presence; GS = items of Gefen and Straub 2004

Factor Analysis (n=334), Extraction Method: Principal Component Analysis, Rotation Method: Oblimin with Kaiser Normalization, Criteria to determine number of factors: Eigenvalue  $\geq 1$ , Sorted by size. Loadings below .350 are not indicated

**Appendix B – results of the second factor analysis (development of the survey instrument)**

	<b>EP*</b>	<b>CI*</b>	<b>PP*</b>
1) I was able to sense the feelings of my communication partner.	.856		
2) I could tell how my communication partner felt.	.834		
3) I was able to sense the emotions of my communication partner.	.760		
4) I was influenced by the mood of my communication partner.	.644		
6) I was distracted during the conversation.		-.860	
7) I was focused during the conversation.		.850	
5) My communication partner did not receive my full attention.		-.849	
8) I remained focused on my communication partner throughout our interaction.		.768	
9) I felt as if my communication partner and I were located in the same room.			.879
10) I forgot that my communication partner was not in the same room as I.			.843
11) When we ended the conversation, it felt as if my communication partner had left the room.			.807
12) When we started the conversation, it felt as if my communication partner had entered the room.			.792

\*EP = Presence of emotional reciprocal relationship; CI = Conversational Involvement; PP = Physical Presence

Factor Analysis (n=125), Extraction Method: Principal Component Analysis, Rotation Method: Oblimin with Kaiser Normalization, Criteria to determine number of factors: Eigenvalue  $\geq 1$ , Sorted by size. Loadings below .350 are not indicated