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27th Bled eConference

eEcosystems

June 1 - 5, 2014; Bled, Slovenia

Design Requirements for Collaboration Processes to Increase Customer Trust in Mobile Banking Platforms

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Abstract

Banks expect the mobile channel to become more important for collaborating with customers. However, a lack of trust continues to prevent a faster dissemination of such mobile banking services, especially for the private banking customer segment. Hence, this paper discusses various determinants of trust and follows a theory-driven approach rooted in the collaboration engineering methodology. Grounded in the calculativebased, relational-based and institution-based views of trust, we derive the following design requirements for collaboration processes on mobile banking platforms: security, privacy, transparency, familiarity, social presence and normality. By validating these requirements with expert interviews, we contribute to existing theory by adding transparency as a design requirement for a collaboration process that fosters trust. Moreover, contrary to existing theory, we did not confirm familiarity as a requirement in this study.

Keywords: Mobile Banking, Collaboration, Trust, Collaboration Engineering

1 Introduction

Recently, one can observe more customers interacting with banks on mobile platforms such as mobile banking apps or mobile websites instead of visiting a physical branch. For example, JPMorgan Chase & Co reported a 30% increase in new mobile customers in 2013, and Wells Fargo & Co published similar numbers (Ryan, 2013). Moreover, banks expect the mobile channel to become even more important and to account for 40% of client interactions by 2015 (PwC, 2013). Despite this trend, mobile banking services are perceived as less trustworthy than online banking or ATMs (Camhi, 2013). A study reveals that the private banking segment is accordingly concerned with perceptions of mobile banking and new IT tools (Finews, 2013). Many banks, thus, currently focus on increasing trust in digital channels in order to deal with rising security concerns, particularly for the private banking segment (PwC, 2013). Within this study, we choose a theory-driven approach based on collaboration engineering methodology to

derive requirements for designing collaboration processes between a relationship manager (RM) and a customer on mobile banking platforms. The objective of this collaboration process is to foster trust from private banking customers with respect to this digital interaction. Thus, we pose the following research question:

What are the design requirements for collaboration processes that increase trust between a relationship manager (RM) and a customer on mobile banking platforms?

First, we consider the related work with regard to trust and the determinants of trusting relationships. Second, we discuss the collaboration engineering method, a theory-driven approach to identifying the design requirements that facilitate high-value and recurring collaborative interactions. Third, the validation of design requirements with expert interviews is proposed. Following the validation, we present and discuss the results, as well as the implications for practitioners and scholars.

2 Related work

2.1 Definition of trust

Customer collaboration with an organization, especially through digital channels, entails a considerable risk. Researchers argue that a trustor and trustee who communicate through such digital channels must rely on fewer social cues, resulting in an increased perceived risk, compared to traditional face-to-face interactions (Cascio, 2000; Jarvenpaa et al., 1998; Zack, 1993). This also applies to private banking customers interacting with a relationship manager (RM) on mobile platforms, e.g. mobile apps or mobile websites. According to the literature, such an interdependent and risky environment requires trust in order to facilitate sustainable relationships (Coleman, 1994; Kanawattanachai & Yoo, 2002; Lewis & Weigert, 1985; Rousseau et al., 1998), effective collaboration as well as information exchange (Gambetta, 1988; Larzelere & Huston, 1980). Accordingly, Rousseau et al. (1998) define trust as follows: "Trust is a psychological state comprising the intention to accept vulnerability based upon positive expectations of the intentions or behavior of another."

2.2 Determinants of trust

Scholars have widely discussed trust and trust-building processes, and recently in the context of digital platforms such as e-commerce (Hoffman et al., 1999). While some authors see trust as a static construct, such as the initial state of trust (Meyerson et al., 1996), others regard trust as dynamic and being developed over time (McKnight et al., 2002; Rousseau et al., 1998). Private banking customers engaging with an RM on mobile platforms generally have an established relationship with their bank. Thus, banks should strive to reassure and confirm these positive associations based on existing relationships. However, the literature on trust in the context of online banking or mobile banking is rather limited, with only few exceptions (Kim et al., 2009; Yousafzai et al., 2003). Moreover, the specific context of building trust through a collaboration process between an RM and a private banking customer on mobile platforms has not been addressed by the research community. Hence, we consider the work of authors who examine various views of trust-building on digital platforms such as e-commerce and apply this knowledge base to our specific context. These views include (1) cognition-based, (2) personality-based, (3) calculative-based, (4) relational-based and (5) institutionbased trust.

Starting with (1) *cognition-based trust,* this view studies the state of initial trust based on impressions prior to an established relationships (Crisp & Jarvenpaa, 2013; Jarvenpaa et al., 1998; McKnight, Cummings, & Chervany, 1998; Meyerson et al., 1996). As we do not focus on banking customers who have no previous relationships with their banks, this cognition-based view of trust is not relevant in this paper.

Furthermore, (2) *personality-based trust* refers to the trusting beliefs of a person (McKnight et al., 1998). Research has shown that this disposition to trust is based on beliefs that other people are trustworthy, reliable and well-meaning (Wrightsman, 1991). Within this paper, we focus on established relationships rather than on initial trust (McKnight et al., 1998; Meyerson et al., 1996). Thus, we consider the view of personality-based trust as irrelevant to this study.

However, we include the construct of (3) *calculative-based trust*. Parties within a relationship weigh the benefits of the relationship against the costs of opportunistic behavior (Coleman, 1994; Williamson, 1993). A conviction that the benefits of engaging in opportunistic actions exceed the costs builds trust among the parties. Hence, it is in the best interest of the trustor and trustee to maintain and foster such a trusting relationship (Gefen et al., 2003). In this study, if the customer realizes that it is in the best interest of the RM and the bank to give good advice, customer trust will be increased.

Relational-based trust (4) refers to an existing relationship. Previous risk-taking actions and the successful fulfilment of positive expectations foster trust among the parties (McAllister, 1995; Rousseau et al., 1998). Contrary to calculative-based trust, this view is characterized by a sense of shared identity. While relationships that depend only on calculative-based trust are more fragile and more exposed to violations, relational-based trust relationships are more resilient (Rousseau et al., 1998). Given that we focus on established relationships between banks and customers, we include this view of trust.

Finally, (5) *institution-based trust* also entails determinants. This view elaborates the causes with regard to the overall system that encompasses the trustor and the trustee. Characteristics of such a system are structural assurance and situational normality (McKnight et al., 1998). We consider these characteristics relevant in fostering the trust-building process within this paper.

3 Method

Collaboration processes between customers and financial advisors on mobile banking platforms are high-value interactions and recur constantly. The facilitation, design and deployment of such collaborative interactions is the aim of a collaboration engineering approach (de Vreede, Briggs, & Massey, 2009). We apply the methodology of collaboration engineering in order to facilitate high value and recurring collaboration processes (Kolfschoten & de Vreede, 2007). The collaboration engineering approach consists of five phases. In this paper, we begin with the initial step to specifying the design requirements or goals for such collaboration processes on mobile banking platforms between an RM and a private banking customer. We commence with an iteration round validating our findings with expert interviews.

In order to identify the design requirements, the collaboration engineering approach suggests referring to the existing literature and established theory (Briggs, 2006). We focus on theories from the e-commerce literature that explain the determinants of trust and use them in the context of building trust through a collaboration process on mobile banking platforms between an RM and a private banking customer. Moreover, we introduce the construct of transparency to serve as a design requirement for the collaboration

process. The next section sheds some light on the theoretical model and the derived requirements.

4 Theoretical model and design requirements

The three views of trust (1) calculative-based, (2) relational-based and (3) institutionbased guide us in developing a theoretical model and in deriving the design requirements. Following Rousseau et al. (1998), who state that the trust-building process depends on the specific context, we specify each view in relation to collaboration processes on mobile banking platforms.

The (1) calculative-based view of trust is dependent on the customer perception that the bank does not gain from pursuing short-lived and individual goals such as increasing its own profits to the detriments of clients. Rather, the economic opportunities of engaging in a relationship with the bank outweigh the potential risks. Nussbaumer et al. (2012) as well as Schwabe et al. (2008) evaluated the effect of transparency in advisory services for financial institutions and travel agencies. They conclude that transparent information exchange and decision-making processes increase the perceived customer trust by reducing information asymmetries between the customer and the organization (Schmidt-Rauch, Schaer, & Schwabe, 2010). Accordingly to their argumentation, increased transparency should reduce the risk of the bank not acting in the best interest of the customer. Thus, in the light of calculative-based trust, we introduce transparency as a design requirement for the collaboration process. With regard to minimizing the risks, we also value security as an important design requirement. This is even more important when it comes to exchanging personal financial information through digital channels (Featherman & Pavlou, 2003). In order for a customer to trust such a web platform and to feel comfortable exchanging sensitive financial information, a secure environment is of the highest priority. The customer should positively assess the company's ability to securely execute his requests (Zhou, Dai, & Zhang, 2007). Hence, for a start, a traditional secure login is required. Biometric features, such as fingerprints or iris scanning, may further increase customer perceptions of security and thus lead to an increase in trust (Mukherjee & Nath, 2003). Besides minimizing security risks, the customer is also concerned with privacy issues. Revealing personal financial information makes the customer vulnerable in various respects (Wang, Lee, & Wang, 1998). Thus, collaboration processes that involve the customer exchanging personal information should reduce the perceived risk that privacy is jeopardized.

When it comes to (2) *relational-based trust*, we focus on established relationships between an RM and a private banking customer. One element that fosters trust in established relationships is perceived familiarity. Gefen et al. (2003, p. 63) define the concept as follows: "Familiarity is the experience of the what, who, how and when of what is happening." Furthermore, familiarity is defined as a consistent customer experience with previous organizational touch-points (Gefen et al., 2003). This accumulation of previous experiences with that particular organization is said to foster customer trust (Gefen, 2000). With regard to the design requirements for collaboration processes, we argue that the customer experience through all different channels, e.g. online banking, mobile banking as well as the bricks-and-mortar banking, should allow for a consistent customer experience. The literature states that trust spreads across various communication channels, e.g. from online to mobile or vice versa (Kang et al., 2011; Lin et al., 2011). With respect to relational-based trust, we also consider social presence as fostering the trust-building process. Social presence means that the customer is not only able to interact with the organization or a relationship manager personally, but is able to exchange information and opinions among his or her peers (Gefen & Straub, 2004). In the context of a banking platform, we derive the following requirements: the customer should be able to interact with the RM through rich media. Furthermore, we also find that a customer can build financial communities within his family and friends and share documents and personal information. The validation of expert interviews should confirm that such measures support the perceived social presence and therefore, foster trust in collaboration processes.

Determi	nants	u et al., 2007).biometrics logins might further increase the custom- er's perception of security.	
•	The ability of a website to securely execute	٠	Security, Privacy: Use secure login procedure,
trus	customer requests (Zhou et al., 2007).		biometrics logins might further increase the custom-
sed.	Transparent information exchange and deci-		er's perception of security.
(1) Calculative-based trust	sion-making process (Nussbaumer et al.,	•	Transparency: Transparent information exchange.
lativ	2012)		
alcul			
I) C			
(]			
•	Familiarity of the customer when, how, who	•	Familiarity: Consistent customer experience across
	and what is happening (Gefen et al., 2003).		different channels.
ust.			
ed tr			
(2) Relational-based trust	Possibility to personally or socially engage	•	Social Presence: Instant messaging, live-chat or
onal	with the organizations or to exchange infor-	•	other ways to interact with a financial advisor, cus-
latic	mation among peers (Gefen & Straub, 2004).		tomer representative through rich media.
() Re	mation among peers (Geren & Straub, 2004).	•	Social Presence: Possibility for customers to build
(2		•	•
			financial circles among family members and friends,
	C 1		to share and exchange information.
•	Similar customer experience to other plat-	•	Normality: Accessing information should be con-
tru	forms (Gefen et al., 2003).		sistent with social media and mobile platforms the
ased	Customer is not required to learn new ways of		customer already knows. The same applies to com-
n-b:	interacting with the platform.		munication features such as chat and messaging.
(3) Institution-based trust			
insti			
(3) I			

 Table 1: Design Requirements for Building Customer Trust

The view of (3) *institution-based trust* considers aspects of the environment and system that should facilitate the trust-building process (McKnight et al., 1998). Related to the institution-based view of trust, one of the aspects discussed in the literature is perceived normality. Gefen et al. (2003) refer to normality as the consistency with previous expe-

riences on websites in general, meaning that the communication possibilities, such as chat features and messaging clients are structured and designed in the same way as other services. Thus, it is important for the collaboration patterns and interactions with the bank to remind the customer of other familiar platforms, e.g. social media websites and messaging services on mobile devices. This will reduce the necessary customer effort and time to learn new ways of accessing information or collaborating with organizations and thus increases the trustworthiness of the platform (Li, Rong, & Thatcher, 2009). Table 1 provides an overview of the derived requirements of our theoretical model. In

the next section, we will describe the validation of the proposed model and the derived design requirements.

5 Validation

Expert interviews are among the most relevant research methods for gathering rich qualitative data (Myers & Newman, 2007). By conducting expert interviews, we evaluate the usefulness (Sonnenberg & vom Brocke, 2012) of the proposed artifact. The interviews were pre-tested and adjusted continuously. We chose a semi-structured approach with a predefined script that ensured all relevant questions were covered. This approach also allowed for open discussions during the interviews. The interviews started with open-ended questions (how could we increase customer trust in collaboration processes on mobile banking platforms?). We continued by introducing each design requirement that we had derived from theory and asked the experts for their opinions (how do you think the design requirement "normality" can build trust in a collaboration process between a RM on a mobile banking platform?). We interviewed 5 experts from banks as well as from consulting firms. The interviewees have extensive industry experience and are knowledgeable about the perceptions of RM and customers. Therefore, we consider the 5 experts to qualify for evaluating the proposed design requirements in this study. Table 2 reveals the position of the interviewees. The interviews lasted for about 40 to 55 minutes and each was transcribed according to common research standards. The results were entered into a database¹. We coded the transcripts based on the design requirements that we had derived in a theory-driven approach.

Interviewee	Position
INT01	Responsible for projects and infrastructure at a Swiss private bank
INT02	Senior consultant at a technology company with a focus on the financial service industry
INT03	Banker at an international private bank
INT04	Community manager for investment advisors at a Swiss bank
INT05	Investment advisors at a Swiss bank

Table 2: Interviewees and Positions

6 Results and discussion

We now present and discuss each of the derived design requirements for building trust through collaboration processes on mobile banking platforms. Table 3 summarizes the results from the expert interviews.

¹ We used ATLAS.ti Software to store and code our transcripts.

The first design requirement, (1) security and privacy, was acknowledged and confirmed by all the experts (5 of 5). The security standards of such a platform should meet the expectations that the customer experiences from a typical online banking or mobile banking login. Moreover, the experts mentioned customer concern with regard to privacy, particularly in the light of the current NSA discussion (INT01):

"Does the customer really trust the bank that the security and privacy standards are sufficient? The customer needs to know that communication with the relationship manager cannot be intercepted by third parties."

Another expert confirms this statement and emphasizes that discretion is vital for customer trust, especially through digital channels such as videoconferencing (INT03):

"The client appreciates the discretion in a face to face call because they know who is around. In a videoconferencing call they do not know who is behind or next to you or listening to the conversation, the environment in which you make this call."

Among the second design requirement (2) of transparency, there was consensus (5 of 5) that this a vital prerequisite for building customer trust. One way to achieve this is to provide the customer with the same information and tools as the relationship manager. This should signal to the client that the bank has nothing to hide and that the investment advice is unbiased (INT04):

"I propose that the bank should provide the customer with the same tools as the relationship manager. The customer needs to know that the bank has no interest in biased financial advice that maximizes its own revenues."

Moreover, the customer always needs to be aware of what data is transmitted on the mobile banking platform and of what he agrees to (INT01):

Design Requirement	Representative Quotation	Count ²
(1) Security, Privacy	"Does the customer really trust the bank that the security and privacy stand- ards are sufficient?" INT01	5
(2) Transparency	"I propose that the bank should provide the customer with the same tools as the relationship manager. The customer needs to know that the bank has no interest in biased financial advice that maximizes its own revenues." INT04	5
(3) Familiarity	"As a bank you have a lot of channels and you need to make sure that the customer experience is somewhat similar across these channels." INT02	1
(4) Social Presence	"Personal financial advice is not bound to the medium. For example, a richer medium does not necessarily result in a more personal interaction. The specific content makes the interaction between a relationship manager and the custom-	4

"You probably would also not trust an app that uses your location data without asking you for permission."

Table 3: Validation of the Design Requirements

(5) Normality

er personal." INT04

"We have looked at extraordinary financial portals in order to get some ideas

on how to design a mobile banking platform for our customers." INT05

4

² The count refers to the number of interviewees (out of 5) that mention the requirement as relevant for designing collaboration processes on mobile banking platforms.

Another expert mentions the potential benefits of digital channels when it comes to giving financial advice. He refers to screen sharing and visualization tools that help the customer to follow the decision-making process (INT03):

"...I think by using the tools available that you actually highlight and simulate the investment product or the advice on the mobile platform that you give. That would be the value added."

With respect to the design requirement (3) of familiarity, we only found limited support from the experts (1 of 5). This requirement was not mentioned by 4 of 5 experts with regard to building trust. However, one person mentioned a different experience across various communication channels (INT02):

"As a bank you have a lot of channels and you need to make sure that the customer experience is somewhat similar across these channels."

However, the experts agreed on the fourth design requirement (4) of social presence (4 of 5). With regard to social presence, the expert moreover agreed that social presence and personal interaction are not dependent on the richness of the communication channel (INT04):

"Personal financial advice is not bound to the medium. For example, a richer medium does not necessarily result in a more personal interaction. The specific content makes the interaction between a relationship manager and the customer personal."

According to the literature, social presence also refers to interacting with peers and with a community. This aspect was not confirmed throughout the interviews. One expert specifically voted against such a community approach (INT01):

"Something that we are not considering is to build a community for our customers. That is not our focus."

The fifth design requirement (5) normality was also confirmed by most of the experts (4 of 5). Interviewees mentioned that other financial portals or social media platforms serve as a proxy for developing the mobile banking platform (INT05).

"We have looked at extraordinary financial portals in order to get some ideas on how to design a mobile banking platform for our customers."

The same view is represented by another expert (INT02):

"When we implement a new feature, we often look at what Apple does or Facebook or other Apps that are highly successful..."

Only one of the experts did confirm the importance of normality as a design requirement for building trust.

7 Conclusions

Following the collaboration engineering methodology, we chose a theory-driven approach to derive design requirements for building customer trust through collaborating with customers on mobile banking platforms. The proposed requirements of security, privacy, transparency, familiarity, social presence and normality have been validated by conducting 5 expert interviews. This evaluation reveals several specific findings and implications for scholars.

First, with the exception of familiarity, all other design requirements were mentioned by the majority of the experts (4 or more), to be relevant for designing collaboration processes between an RM and a private banking customer on mobile banking platforms. The main contribution of the present study is the introduction of transparency, which should be valued as a construct for fostering trust. Moreover, only one of the experts explicitly stated that the cross-channel experience and familiar collaboration processes (familiarity) across different platforms are important. Thus, future research should further evaluate the construct of familiarity and its effect on building customer trust in collaboration processes.

Second, although social presence was among the design requirements that were widely acknowledged by the experts, social presence in terms of customers being able to interact with other customers was not confirmed throughout the interviews. This might be because the private banking customers segment has no interest in collaborating with other peers. One of the experts mentioned that a community might be beneficial for re-tail, but not for private banking customers. Future research should therefore evaluate whether the proposed findings can be generalized to different customer segments.

Not only scholars, but also practitioners can draw some useful conclusions from this study. A lack of customer trust is among the top concerns in offering mobile banking services. The proposed design requirements help banks in deciding on how to build collaboration processes between an RM and a private banking customer on mobile devices. Banks should especially focus on the aspects of privacy and security of such mobile banking platforms. One of the elements that practitioners might still need to discuss and consider is whether to implement biometrics and more advanced authentication processes. This present study did not reveal specifically that such advanced authentication approaches increase trust. Moreover, in the light of social presence, providing personalized content and services might have a greater impact in building customer trust than the richness of the communication channel itself, e.g. videoconferencing. Thus, banks should focus on identifying customer needs individually and adjusting the collaboration processes on mobile banking platforms accordingly.

The validation of the proposed requirements was conducted by 5 expert interviews, although, these interviewees did not include RM or private banking customers. Thus, the findings of this study are limited to this first iteration and need to be further validated, for instance, with case studies or experiments testing a collaboration process in a reallife context with RM and customers. Moreover, we explicitly focused on the private banking customer segment. Hence, the findings might not apply equally to retail and private banking customers and might thus not be transferable.

Despite these limitations, we answered the research question and proposed a theoretical model and design requirements that should foster trust, which in turn promotes collaboration with customers on mobile banking platforms.

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