

Chapter 7

A Usability Comparison of SMS and IVR as Digital Banking Channels

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ABSTRACT

In this paper, the authors compare the usability of SMS mobile banking and automated IVR telephone banking. Participants (N = 116) used SMS banking and IVR banking to find their account balance in a repeated-measures experiment. IVR banking scored higher for usability metrics: effectiveness, attitude, and quality. There was no clear difference in rank order of preference between the two channels. Participants gave positive comments regarding speed and efficiency with SMS banking, but had serious doubts over the security of the SMS channel, impacting consumer trust in SMS banking. The authors argue that usability problems and security concerns are a major factor in the low adoption of SMS mobile banking. Older users were less positive in general to SMS banking compared with the more established IVR banking. Older users had lower first time completion rates for SMS banking and gave IVR banking higher attitude and quality scores.

1. INTRODUCTION

Internationally, banks are investing considerable sums of money into mobile phone banking (mBanking) services (Lee & Chung, 2009; Laukkanen, 2007; Luarn & Lin, 2005), but the uptake by customers has been disappointingly low (Laukkanen, 2007; Pousttchi & Schurig,

2004; Suoranta & Mattila, 2004). Many of the advantages of Internet banking are shared by mBanking, e.g., convenience and time saving. The most optimistic supporters of mBanking claim it is cheaper, safer and more convenient compared with Internet banking (Lee & Chung, 2009; Luarn & Lin, 2005). The appeal of mBanking lies in the fact that the customer can access their account on

DOI: 10.4018/978-1-4666-1954-8.ch007

the move, regardless of time or place. A major factor in the success of Internet banking is its ease of use (Hudson, 2002; Karagaluoto, 2002). In contrast, a major factor in the low adoption of mBanking applications relates to the usability problems inherent with these smaller devices.

This paper is concerned with one application of mBanking: Short Message Service (SMS) banking. It compares the usability of SMS banking to the more established Interactive Voice Response (IVR) automated banking. The paper describes the results of an empirical investigation into the integration of an SMS banking channel into a bank's multichannel environment¹. The paper compares the usability of an SMS banking channel with an IVR banking channel for balance requests. The aim of the experiment was to inform the practical application of SMS banking in order to maximise customer acceptance and adoption, and to contribute to better understanding of the reasons for the low adoption of SMS banking. The usability methodology was based on previous work in SMS banking (Peevers & McInnes, 2009; Peevers et al., 2008).

1.1. Background

SMS, or text messaging, as it is more commonly known, is still a tremendous growth area in mobile communications. It is estimated (Martin, 2010) that worldwide some 4.1trillion text messages were sent in 2008: the Mobile Data Association (MDA) reports that in 2008 a total of 78.9 billion text messages were sent in the UK alone (MDA, 2009), 216million per day, and this was an increase of 22 billion on the annual total in 2007. Research has found that text messaging is most commonly used as an effective one-to-one method of communication between friends (Sillence & Baber, 2004), but businesses have also realised that there is huge potential in SMS for carrying out business activities, and for individual communication with customers. The market research group Radicati estimated that in 2004, 55% of

text messaging was for business use, with much further growth to come (Faulkner & Culwin, 2005). SMS banking services have already been successfully implemented by banks in Asia, the Middle East and South Africa, with both *Push* (automatic) and *Pull* (customer initiated) services offered to customers (Rumpa, 2005). At the time of writing the services offered by banks in the UK are limited to *Push* only, such as the bank sending the customer a weekly account balance, and basic *Pull* services such as ordering a new cheque book. The popularity of SMS banking in markets such as India (Ahmed, 2004; BBC News, 2005a) is due in part to the low cost of mobile handsets compared to desktop computers.

The popularity of SMS messaging has led to a body of usability research on text entry methods (Curran et al., 2006; Friedman et al., 2001; James & Reischel, 2001), and on mobile phone ergonomics (Balakrish et al., 2005; Soriano et al., 2005) and there has been general research on mobile phone user interfaces (Lee et al., 2006). The small keypads used on mobile phones have been found to pose usability problems (Kurniawan, Nugroho, & Mahmud, 2006; Soriano et al., 2005). Thumb size has been shown to cause usability problems with texting (Balakrishnan & Yeow, 2008). It has been found that older users have usability problems with texting on mobile phones (Kurniawan, 2008; Peevers et al., 2008), and there has been research into producing mobile phones aimed at the older generation (BBC News, 2005b). One study (Ornellan & Stephanie, 2006) showed that when keys are placed too close together they cause problems for older users. Older users have also been found to be passive users of mobile phones, and can find the process of text messaging intimidating (Kurniawan, 2008).

1.2. Low Adoption of Mobile Banking

The advantages of mBanking are convenience, access to banking no matter the time or place and efficiency (Laukkanen, 2007; Jarvenpaa et al.,

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