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Personalized Marketing Messages in an Online Banking Context: Does Anybody Notice?

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PERSONALIZED MARKETING MESSAGES IN AN ONLINE BANKING CONTEXT: DOES ANYBODY NOTICE?

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In the 21st century the amount of research in personalization has grown exponentially. Much of this increased interest is linked with the Internet and other information technologies that enable efficient servicing of customers even on one-to-one basis. This paper reports on a research project, the first part of which studied via focus groups the perceptions of a Nordic bank's customers towards various personalized marketing messages in their online bank. We employed the Elaboration Likelihood Model (ELM) of persuasion as a theoretical framework. In the second part, a 9-week field experiment at an online bank was conducted. In this experiment, customers were shown personalized banner advertisements when they logged in to their online bank service. Three different types of financial products were promoted to three groups of customers. We compared the effectiveness of the personalized banners vs. default banners via click-stream analyses. Moreover, these online promotions were compared with traditional direct-mail promotions. Our results are encouraging. The lifts of personalized banners compared to a default banner varied between 12 and 120. The pull-percentages, which measure the actual sales, were also higher than in the direct-mail promotions in two of the experiment's three product cases.

Keywords: Personalization, Online bank, Online marketing, Online advertising, Click-stream data.

1 INTRODUCTION

Personalization is touted as one solution for information overload and the commoditization of offerings as customers will receive only those promotions, services and products that are of interest to them. Several studies emphasize personalization as the main tool of attracting customer attention and convincing them to purchase (Ansari and Mela, 2003; Goldsmith, 1999; Kalyanam and Mcintyre, 2002; Wind and Rangaswamy 2001). Large-scale personalization has been made possible only through advances in information technology, even though personalization as a phenomenon is nothing new. The context of this study is online personalization, and particularly, how personalization of marketing messages could be implemented in online banking.

Nordic banks have been successful in moving their customers online. In Finland, 79% of the population uses the Internet, and online banking is the third most popular activity of the Internet users (84 % of them uses this application) after sending or receiving e-mails (90%), and searching for information about goods and services (86 %) (Statistics Finland, 2007). However, so far, the online banking applications have emphasized the goal-directed needs (Hoffman and Novak, 1996; Moe 2003) of customers by providing tools for payment of bills, following investment developments and conducting selected deals online. Next, banks aim at catching the customers' attention when they enter the online bank in a goal-directed mindset. The context presents a unique platform for personalized communication since it removes many costs normally associated with messages in other websites: the connection is secure, there is no need for information disclosure since the bank is already in the possession of the financial and other information of their customers, and there is no competition for the attention of the customers by other marketers. Attempts have been made to mould this environment into a sales channel in addition to the well functioning information and transaction channel. However, the lack of human contact in an online banking context might lead to decreased loyalty among the customers (see e.g. O'Loughlin and Szmigin, 2006). One way of preventing this could be to provide personalized online services to the customers by inferring from their previous behaviour and expected needs the communication, product and service offerings that the customers would appreciate and experience as relevant and up-to-date.

In this paper, we use field experiments to study whether personalized marketing messages directed to the right group of online customers would result in increases in sales. The paper is structured as follows. Prior research on personalization and banking is reviewed in Section 2. In addition, we present the typical information processing stages and the Elaboration Likelihood Model (ELM) of persuasion that are used in our study. The methodology of our study is described in Section 3, and the field experiments are described in Section 4 of this paper. We analyze the effectiveness of personalized marketing messages with the help of click-stream data, and compare the results with default banners and with the more traditional way of approaching customers, i.e. direct-mail marketing. Discussion and conclusions end the paper in Section 5.

2 PRIOR RESEARCH

Personalization is an interesting and puzzling concept, and various definitions of it are presented each emphasizing a particular lens to personalization (Sunikka and Bragge, 2008). The theme attracts interest in several disciplines - especially marketing, computer science and information systems (IS) scholars examine personalization - but their approaches and methods of inquiry differ from each other. Most of the research on personalization takes a technological view on the phenomenon (e.g. Cao and Yunfeng, 2007: Zhang and Jiao, 2007). Another common theme is the interplay between personalization and privacy (e.g. Awad and Krishnan, 2006; Chellappa and Sin, 2005). Personalization as a process and the organizational changes necessary have received scant attention with a notable exception of e.g. Adomavicius and Tuzhilin (2005). In addition, the effectiveness and efficiency of

personalization in consumer decision making context are in need of further research (e.g. Ho, 2006; Tam and Ho, 2005; Tam and Ho, 2006).

The amount of research on personalization has multiplied in the 21st century. A simple search of articles containing the term personalization (or personalisation) in the ISI Web of Science database shows almost a 4-fold increase between periods 1997-2001 (189 articles) and 2002-2006 (716 articles). The IS research on personalization is said to fall into three categories: i) applications of personalization technologies, ii) philosophical issues such as privacy regulations and ethics related to data collection and processing, and iii) technologies for mining user transaction data and deriving rules to generate personalized content (Ho, 2006). However, according to Tam and Ho (2006) the work by IS researchers in the area is scant, and there is little theoretical work in the literature that considers the relationships between personalized content and the cognitive, behavioural, and decision measures of users. Our study addresses this gap.

One of the most comprehensive conceptualizations of personalization is introduced by IS researchers Fan and Poole (2006), and it builds on the earlier works of Instone (2000) and McCarthy (2001). According to Fan and Poole's (2006) framework (see Table 1), personalization can be conducted either by the *system* (implicit), or by the *user* (explicit). The object of personalization can be the content, user interface, functionality or channel. Furthermore, the framework makes a distinction whether personalization is directed to individuals (individuated) or to groups of individuals (categorized), which is important as personalization targeted to an individual requires much more computing power. Sunikka and Bragge (2008) suggested two clarifying terms, namely *one-to-one personalization* for individuated and implicit content personalization, and *mass personalization* for categorized and implicit content personalization. These terms are used also in this paper.

Who does it?	To whom?	What?			
		Content	*User interface*	*Functionality*	*Channel / Info Access*
Implicit (system)	Individuated				
	Categorized				
Explicit (user)	Individuated				
	Categorized				

Table 1 Implementation possibilities in personalization, based on Fan and Poole (2006, 187 – 188).

Banks and especially their relationship with customers has been a keen subject of research (e.g. Ball, Coelho and Manchá, 2004; Ellis-Chadwick, McHardy and Wiesehofer, 2002). Joseph et al. (2005) conclude that nowadays banking is perceived more as an impersonal service, and the speedy and efficient service replaces what is lost in face-to-face service. Personalization in banking context is mainly examined from the viewpoint of personal interaction with the customer service representative (e.g. Huang and Lin, 2005; Ball, Coelho and Vilares, 2006), but it has also been speculated to bring differentiation advantage online (Boyes and Stone, 2003). If customers feel that online banking is impersonal and there are no differences in the e-services offered by different financial institutions, one way of differentiating the service is to personalize the content to the customers. An example of content is embedded marketing messages, which is the focus of our current research.

There exist two complementary paradigms that examine the effectiveness of online advertising (Hollis, 2005). The "brand building" paradigm concentrates on measuring brand recall and the attitude towards the brand or an advertisement. The "direct response" paradigm treats online advertising like direct marketing, and click-through rate is seen as a proper measure of effectiveness (Chandon, Chtourou and Fortin, 2003; Hollis, 2005). The click-through rate captures the proportion of banner clicks to total number of clicks (Chandon et al., 2003). Other commonly used measures include the hit rate, response time to banner ads, the pattern of online purchasing, and the time spent at a website (Chatterjee, Hoffman and Novak, 2003). In our study, we mainly adhere to the measures of the direct

response paradigm, although we acknowledge the complementary view presented by Hollis (2005) and the additional brand building effects that are not as directly observable. Dreze and Hussherr (2003), among others, state that the overall click-through rates have declined steadily (from 7% in 1996 to 0.7% in 2002) as consumers become more used to the Internet and learn to avoid banners. Despite of this, web banners are still extensively used, also for their brand building effects.

In general, the objectives of online advertising are to 1) get the consumer to click on the ad, and 2) to keep the consumer at the website as long as possible and increase the amount of time spent (stickiness) (Chandon et al., 2003). But what happens in the consumer's mind? Typical information processing models consist of *attention*, *elaboration* and *behavior* stages, although every message detected will not go through all the stages (Tam and Ho, 2005). The socio-psychological Elaboration Likelihood Model (ELM) of persuasion (Petty, Cacioppo and Schumann, 1983; Petty and Cacioppo, 1986) examines how persuasive messages influence attitudinal changes. The model is used in many areas of research, e.g. in public health communications (e.g. Rucker and Petty, 2006), technology adoption (e.g. Bhattacherjee and Sanford, 2006) and personalization (e.g. Tam and Ho, 2005). ELM explains why some aspects of persuasive messages influence attitude change, and consequently behavior, in various ways.

ELM postulates that the *information processing route*, either *central* or *peripheral*, influences the attitude change. The route taken depends on the motivation and ability of the message recipient to elaborate on the messages. When the motivation and ability exist (i.e. the elaboration likelihood is high), the message recipient is assumed to use the central route characterized by considerable cognitive elaboration. The recipient focuses in depth on the central features of the messages, and evaluates message arguments and implications carefully. With low elaboration likelihood the peripheral route is taken, and the recipient examines the message quickly or focuses on simple cues, and applies simple decision making rules or heuristics. For example, a rule "Personalized recommendations are tailored for me and therefore can be trusted" might be invoked in e-commerce sites by mere saluting the message recipient by his or her first name (Tam and Ho, 2005). However, if the content (advertised product or service) of the message matches the preferences of a consumer, the user is more likely to process the message to a larger extent (Tam and Ho, 2005). The central processing with a heightened level of elaboration is supposed to have a more profound impact on the attitude than peripheral processing, and thus, to influence positively on a firm's promotional activities. The way we applied the ELM in our study is described under the methodology section.

3 METHODOLOGY

The data in this study were gathered in two stages. First, we conducted qualitative focus group interviews and based on their results, we planned the field experiments that were carried out in a bank's website. The purpose of the group interviews was to gain insight into how customers react to and value personalized marketing messages in their online bank. Four focus groups were conducted in September 2006 via computers in a face-to-face setting (see e.g. Kontio, Bragge and Lehtola, 2007 for the technique). A pilot group and three customer groups (with 11-14 participants) of a Nordic retail bank were interviewed. Each focus group session lasted for 2.5 hours and was administered by three facilitators, following the same predefined agenda. The focus groups started with general questions about privacy and personalization, and continued with several cases and questions related to personalized marketing messages in an online banking context. These case messages were personalized from two angles: i) they were targeted to the correct group of customers (preference-matching), and ii) there was personal, i.e. self-referent information (account information, information on credit card usage etc.) in the messages. The messages were presented to the respondents in glossy colour print copies, representing several complete screenshots of the authentic online bank web pages. The respondents were told that the messages are situated in the part of the website that requires user authentication. In addition, we asked the respondents to imagine that the use context and self-referent information in the messages are their own.

The message variable that was assumed to be processed centrally was the personalized and relevant (preference-matching) content, i.e. the product or service offered. The self-referent information in the message, the location of the message on the website, the pictures used in the messages and the tone of "voice" used were regarded as peripheral variables. Overall, the attitudes toward the self-referent information in promotional messages were rather negative. As the ads that we tested were deliberately planned to use self-referent information fairly aggressively in order to determine the boundaries of what is accepted by the customers, the customers' desire to be left alone (one aspect of privacy) was mentioned often in the focus groups. Some customers felt, however, that the ads were refreshing and got their attention. Pictures in the marketing messages were immediately attached with advertising flair, and the location of the banner determined whether the banner was even noticed by the customers. Despite many negative comments, almost all participants stated that they would prefer targeted ads to general ones, but the self-referent information must not occupy too prominent status in the messages, but rather to be in the background. As the emphasis of this paper is on the subsequent field experiments, we refer to Sunikka, Lähteenmäki and Bragge (2007) and Bragge, Lähteenmäki and Sunikka (2007) for further details.

Based on the focus group insights gained, the field experiments were designed to be conducted on the bank's website in November 2006 – January 2007. This constitutes the second data gathering stage of our research. Three different field experiment groups were created from the bank's customers. Each group was shown a different personalized message in the form of a banner advertisement as they logged in to the online bank. The first group consisted of 281 customers who lacked the electronic bank account statement service, and they were shown a message: "*Problems with archiving? Switch your bank account statement to the net!*". The second group was formed of 300 customers who had only standard loans, and they received a message: "*It is worthwhile to concentrate – even consumption loans*." The third group included 293 customers who had a bank card that was about to be withdrawn from the market, and their message read: "*Your X-card is about to expire. You can switch easily to Y-card on the net*". Each customer could belong to only one group. Direct online purchase of the promoted product (or service) was possible in the first group. The other two cases required personal visit at the branch office at a later stage, although the application process could be initiated online.

All our experiments belong to the implicit and content personalization zones of Table 1. The participants to the net bank statement group were subjects to *mass personalization* as the messages were directed to a group of users. Since loans and bank cards can be granted only to customers that fulfil certain criteria, the customers in these two groups were selected one-by-one. Hence, the *one-to-one personalization* is the type of personalization in the two other experiments.

Click-stream data was used in the second data gathering stage. The term click-stream denotes the electronic records of Internet usage recorded by company web servers, and it indicates the path a visitor takes through one or more pages or websites (Bucklin et al. 2002). In the online bank context, the pages can be categorized in three main levels: *administrative pages* (registration and basic transaction pages), *product related pages* (home page, category pages for different products, different product pages, brand pages, search result pages) and *informational pages* that contain information about the company. The collected data set contains e.g. the timestamp (when the hit was made), page-id (what page was clicked) and the session-id (used to separate different sessions). The data measured the observable behaviour at a group level in order not to infringe on confidentiality aspects of the data.

4 FIELD EXPERIMENTS

The data used in this study spans nine weeks from November 22, 2006 to January 22, 2007. In this time, 8988 sessions were made by 714 different visitors. Thus, 81.7% of the customers from the experimental groups visited the website at least once during the time-period. This constituted over 124000 lines of page-view data (hits). Table 2 depicts the basic data of the experiment. The average age of the visitors was 40 years, (43 in the bank's whole customer population). Females formed 40.5%

of the visitors, whereas their proportion of the whole population is 48.6 %. We examined the measures of session durations (in pages or in seconds), and they did not differ between the genders.

	Net bank statement	Loans	X-card	Whole experiment	Whole population
Customers selected to groups	281	300	293	874	
Visit-% (number of visitors from groups)	61.2% (172)	94.7% (284)	88.1% (258)	87.1% (714)	
Average age of visitors	46	39	43	42	43
Gender of visitors: females	53.4%	37.3 %	55.6 %	40.5%	48.6%
Total hits	14 584	65 245	44 641	124 470	
Total sessions	1 100	5 040	2 848	8988	
Avg. sessions (in pages)	13.3	12.9	15.7	13.8	
Avg. sessions (in seconds)	370 sec	265 sec	363 sec	309 sec	
Avg. nr. of sessions / unique visitor	6.4	17.7	11.0	12.6	

Table 2 Data summary of the basic data in the experiments

The group that consisted of customers who lacked complementary loans was the most active group when measured with percentage of visits, total hits, total sessions and number of sessions per unique visitor. Since nearly 95% of the loans group visited the online bank during the experimental period, the higher numbers of hits and sessions are understandable. The X-card group opened, on average, the most pages per session, and the duration of their average sessions in seconds was also higher than in the loans group, being almost as high as in the group that had no net bank statement.

4.1 Measures of the personalized banner experiments

According to typical information processing models, consumers go through *attention*, *elaboration* and *choice* phases when exposed to persuasive messages (see e.g. Tam and Ho, 2005). With only click-stream data we have only partial knowledge regarding *attention*, since we do not know how many customers noticed the messages, but decided not to click the banner, or how many just did not see the banner. However, we use the click-through rate of a personalized banner as an indicative measure of *attention*. Moreover, we measured the number of unique sessions that accessed the personalized banner. For the *elaboration* measures, we calculated the overall stickiness (durations of sessions both in pages and in seconds) and page stickiness (the average time spent per page) and compared these figures between the sessions that accessed the personalized banner and those that did not. We also compared the results between the three experimental groups.

The *choice* in this experiment is whether the customer decided to purchase or apply for the promoted product (we use the term product according to the banking terminology, although the offerings are mainly services). We measured choice with the number of the products purchased by the time that the experiment was over (i.e. January 22, 2007), and related this figure also to the total amount of customers in the respective group (pull-% of the group). Regarding the net statement case, it was possible to order the product directly form the website. In the other two groups, the customer had to apply for the product, and physically visit the branch office in order to sign and receive the product.

Finally, we measured the *effectiveness of the personalized messages*. We first measured the proportion of default banner hits (banner of equal size in the same location on the website to a median user) to total hits and compared it to the proportion of personalized banner hits to total hits in order to receive the *lift* of the personalized message. In addition, we compared the *pull-percentages* of the field experiments with comparable personalized direct-mail promotions that had been launched in temporal proximity of the field experiments. Finally, we compared the effect of the personalized banners in the temporal order of the login sessions, that is, the click-stream figures regarding *repeated banner-ad exposure*, which in general is found to be decreasing (see e.g. Chatterjee et al., 2003; Dahlen, 2001).

4.2 Results of the personalized banner experiments

We categorized pages to basic usage (basic transactions) and other pages. The amount of the basic usage pages varied from 81.1% to 84.4% (see Table 3 for the summary of all results reported here), and these were filtered out of the analyses. Among the other than basic-usage pages the proportion of *banner generated pages* varied between 0.74% and 4.13% of the total hits, being the greatest in the net bank statement group. This group had also the highest percentage of *sessions that contained banner-generated pages* (the range was from 0.67 % to 8.36 % of the total hits).

The click-through rates were 0.8% (net bank statement), 0.13% (loans) and 0.2% (X-card) (see Table 3). The click-throughs of unique sessions amounted to 92, 12 and 19. Next, we compared the sessions that accessed the banner-generated product pages to those that did *not* access the banner-generated pages in the experimental groups. The differences between the average durations of sessions measured in pages (and in seconds) were 9.4 (364 s) for the net bank statement, 23.3 (632 s) for the loans, and 2.6 (126 s) for the X-card. That is, in every group the average consumer accessing banners perused more pages and spent more time during the sessions. Regarding the average page stickiness measures (length of a session in seconds divided by its length in pages), the results between those sessions that accessed the banner and those that did not access the banner differed considerably. The differences were 8.5 (net bank statement), 3.2 (loans) and 6.8 seconds (X-card), see Table 3 for more details. The equalities of the variances in all these comparisons were also statistically tested (H_0: the variances are equal), and Table 3 reports the F-test results. The tests show that in every group, one of the three studied differences is statistically significant, indicating a change in the navigational behaviour of the customers, who accessed a personalized banner compared to those who did not access banners.

Returning to the differences in the duration averages, we notice that the highest page stickiness was found in the net bank statement group. The reason for heightened elaboration might be the possibility to order the service online without consulting the service representative. However, the high stickiness might also be due to imperfect instructions. The products in the other two groups (loans and X-card) required offline visit before they be taken into use. Those customers who opened the loans banner accessed the highest number of pages and their sessions lasted the longest; thus there was a high need for information on the details of the loan offering. The lowest number of pages and the shortest duration were found in the X-card group. The instructions and procedure might have been clear, the customers were already well acquainted with the product, or they might have felt that they can ask the possibly remaining questions from the customer representative in a face-to-face meeting when retrieving the new card.

The pull-percentages of the personalized groups was measured after the experiment was over, and they included the number of customers who had applied or signed the contracts of the respective products. The pull-% was the highest in the X-card group (19 %), then in net bank statement group (12 %) and the lowest in the loans group (6 %). Interestingly, the final purchases are higher than the click-throughs (measured as unique sessions) in both the loans group (18 purchases vs. 12 unique click-though sessions) and in the X-card group (50 vs. 19). This indicates that seeing the messages might act as a reminder and a trigger for action even though the banner is not clicked on (comparable to a brand building effect).

The effectiveness of personalized banner messages was next compared to the effectiveness of a default banner (banner that was situated at the same place on the website and is of equal size). The results show that the lift of a personalized banner compared to the default banner is about 120 in the net bank statement group, 12 for the loans group and 57 for the x-card group. This figure has to be reflected on the current context of banner exposure, which is in general very low (even below 0.1 %), and therefore this lift-measure may look too "optimistic". However, it is still an indication how personalized banners are received by the customers.

When we compared the pull-%'s of the personalized messages to the pull-%'s of comparable direct-mail marketing promotions (that have general pull-% of 9.5 - 10.0 % for the net bank statement, 5%

for consumption loans and about 35% for the X-card), we noticed that the personalized banner messages seemed to be more efficient in product categories like the net bank statement and loans. However, the costs of conducting the promotions should also be incorporated in the analyses when making the comparisons. Due to the exploratory nature of this study, the costs are not included here, and thus the results are only preliminary.

	Net bank statement	**Loans**	**X-card**
Basic pages, usage-%	81.9%	83.1%	84.4%
Banner-generated pages (proportion from other than basic pages)	**4.13%**	0.74%	1.13%
Banner-generated sessions (sessions containing banner-usage)	**8.36%**	0.24%	0.67%
Attention measures			
Click-through rate (personalized banner hits / total hits)	**0.8 %**	0.13 %	0.2 %
Click-through amount (nr. of unique sessions that hit the banner)	**92**	12	19
Elaboration measures			
Avg. duration of sessions (in pages) that accessed banner	21.9	**45.2**	18.3
Avg. duration of sessions (in pages) that did not access banner	12.5	12.9	**15.7**
Difference of stickiness regarding session duration in pages	9.4	**32.3**	2.6
Equality of variance test of the durations (in pages) H_0: The variances are equal	p=0.3999 F=1.13	p=0.3944 F=1.58	p=0.1205 F=1.85
Avg. duration of sessions (in seconds) that accessed banner	704	**895**	489
Avg. duration of sessions (in seconds) that did not access banner	340	263	**363**
Difference of stickiness regarding session duration in seconds	364	**632**	126
Equality of variance test of the durations (in seconds) H_0: The variances are equal	p<0.001* F=2.44	p=0.7461 F=1.08	p=0.4721 F=1.34
Avg. duration of visit in seconds / page (that accessed banner)	**34.0**	20.5	27.5
Avg. duration of visit in seconds / page (that did not access banner)	**25.5**	17.3	20.9
Difference in page stickiness	**8.5**	3.2	6.8
Equality of variance test of the durations (in seconds / page) H_0: The variances are equal	p=0.6252 F=1.06	p=0.0284* F=3.32	p=0.0052* F=2.19
Choice measures			
Purchases by participants (in number of products)	33	18	**50**
Pull-% of the personalized group (nr. of products / whole sample)	12 %	6 %	**19 %**
Effectiveness of personalization measures			
Lift compared to default (non-personalized) banner	**120**	12	57
Direct-mail marketing pull-% of comparable campaigns	9.5 – 10 %	4.5 – 5 %	35 %

Table 3 Data summary of the banner effectiveness data in the experiments

Finally, we compared the effect of the banners in a temporal order of sessions, that is, how many customers clicked the banner on their 1st, 2nd, 3rd etc. login session. We found that the banner effect trend is decreasing with repeat exposures in the net bank statement group (Figure 2) and increasing with repeat exposures in the loans group (Figure 3) and in the X-card group (Figure 4). In the figure legends, the "banner generated pages" refer to the personalized banner, whereas the "overall banner generated pages" depicts an average line had the sessions that accessed the banner been equally distributed in time. As Figure 1 shows, the personalized banner has the biggest effect on the 1st and 7th order of sessions, and the trend is decreasing. In Figure 2, the banner has two peaks during the order of sessions 2 and 7. Figure 3 presents multiple peaks during order of sessions 3, 6, 7 and 9, and the effect of the personalized banner seems to increase the most with repeat exposure. The peaks might be due to some visitors not having noticed the banner the first time they logged in, or because they needed to evaluate the product more carefully over several visits. In some cases the customers may have seen the banner in their first visit(s), but they had to reserve in their goal-directed mind a later session with more available time for elaborating on the message content. However, due to small number of sessions that accessed banners in Figures 2 and 3, the behaviour of even one visitor can impact these trends

strongly, and care should be taken in their interpretation. The figures serve more as illustrations how this phenomenon may be studied with larger samples. We will discuss the findings of the experiments in the next section of the paper.

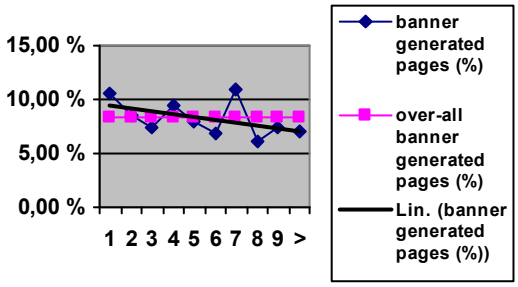

Figure 1 Banner effect with repeat exposure (net bank statement group)

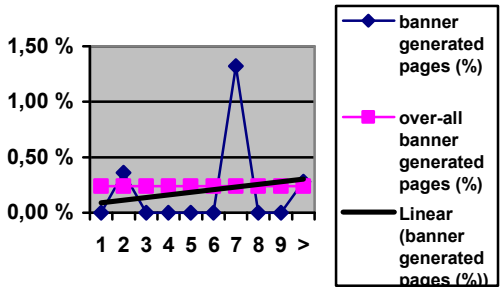

Figure 2 Banner effect with repeat exposure (loans group)

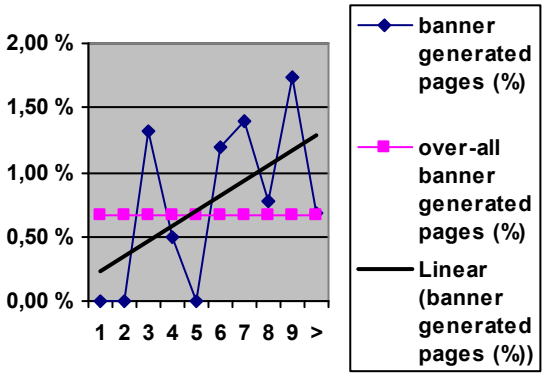

Figure 3 Banner effect with repeat exposure (X-card group)

5 DISCUSSION AND CONCLUSIONS

This paper has explored the effectiveness of personalized marketing messages in a Nordic online bank. Three types of financial products were promoted to three different customer groups, forming a sample of almost 900 customers. The complexity of the promoted products varied from a "risk-free" net bank statement, which could be purchased directly online, to more complex products of loans and credit cards, the purchasing of which could be initiated via the web and finalized offline. This partial execution of the process via the web was not expected to be regarded as a disadvantage by the online customers, as consultation with sales personnel is one strategy customers use to simplify complex decision-making environments (Waite and Harrison, 2002). Customers also tend to seek information from interactive and personal sources when the products are perceived more risky (Mitra, Reiss and Capella, 1999). The Internet can provide unique interactivity in online marketing processes and increase the customers' feeling of two-way interaction via personalized marketing messages. This might persuade them to initiate the purchase of risky or complex financial products, but they might still be happy to be able to finalize the deal in a face-to-face contact.

There is a fair amount of research that has studied the effectiveness of online banner marketing and also with personalized content. However, most of the studies deal with e-commerce (retailing) sites or with situations where the customers are first persuaded to enter the seller's site for online purchasing

from a third party site. Our case website is very special: the visitors are already customers of the company, and most of them have a regular need to revisit the site in order to conduct financial transactions or to check the balance of accounts. Furthermore, there is no competition for attention from other parties. Thus, our study contributes to the existing online personalization literature by presenting a case context that has not, as far as we know, been studied before.

Our results showed that the click-through rates for the personalized banners are higher than for the default banner in all three field experiment groups. The lift was the highest in the net bank statement group (120 vs. 12 or 57 in the other groups). This might have been due to the fact that the net bank statement is a relatively simple offering that as a digital service also matches the online bank's distribution channel the best. Regarding the effectiveness of the personalized banners, we found the pull-percentages to be better than direct mail marketing promotions in two of the three cases studied (not in the X-card group, which achieved better pull-% with direct mail marketing). However, these results are to be regarded preliminary, as we did not include all the costs involved in the comparisons.

We also measured the durations of sessions in the online bank both in pages and in seconds. The sessions that included banner-generated pages were either somewhat or significantly longer than those sessions that did not include banner-generated pages, thus implying better stickiness and clear changes in the navigational patterns. However, one could also speculate that longer durations are not always a good thing, since they might indicate e.g. unclear instructions. Especially in a goal-directed mood and with "avoidance" products like financial services typically are (McKechnie et al, 2006), customers might just prefer to get their activities conducted and not to spend too much extra time requiring cognitive efforts on the site. This and other cognitive phenomena are interesting topics for future research. For example the need for cognition (NFC) personality trait (see Tam and Ho, 2005) seems to be a factor that might explain differences between online customer behaviour. According to Tam and Ho (2005), prior research has found that compared to low-NFC people, high-NFC individuals search for more information when making decisions, engage in more effortful processing of persuasive messages, and devote more topic-relevant thought to persuasive communications, among others. Thus, it is not enough to manipulate merely the ELM variables of the messages and assume that the behaviour of the customers is homogenous, but the individual characteristics of the customers should also be studied in more detail.

One limitation of our study is that we did not employ a complementary questionnaire, due to the exploratory nature of this study. A questionnaire would have provided some answers to our presumptions and better metrics e.g. for the attention variable of the information processing stages. In laboratory experiments, eye-tracking devices could also be used to measure attention (see e.g. Drèze and Hussherr, 2003). However, although we employed mainly direct response measures, our measures on choice (actual behaviour) imply that the marketing messages worked also through memory (with repeated exposure), and not only when clicking through the banner. This was manifested in the field experiment by the larger numbers of final purchases of the promoted products when compared to the sessions that had accessed the respective banners in the loans and X-card cases requiring offline visit.

Another caveat in our experiment is that the Christmas and vacation time might have inflated the results both via the needs of the customers (e.g. credit card and loan applications near Christmas) and via more free-time to study the bank's messages. However, the timing of the experiments was planned on purpose. Just as with traditional promotions, the marketers have started to design also their online campaigns through temporal targeting according to time of year, or even by the day of week or time of day (Bruner and Gluck, 2006).

In summary, the field experiment provided many insights both for the bank's future operations and for the researchers regarding personalized online marketing. After this basic analysis of the effectiveness of personalized messages, more details of the rich click-stream data will be disseminated in future studies. For example, combining the click-stream behaviour with demographic profiles could give more insights on the causes that affect the behaviour and influence the navigational patterns. Additionally, clustering analysis would be helpful in understanding and predicting which measures of

navigation are most important in explaining the purposes of navigation, thus reflecting the mind-set of unique sessions (cf. Moe, 2003).

The bank has continued its experiments with personalized messages with positive results. After the pilot stage, it aims at designing and implementing a more systematic way of conducting personalized marketing in the online bank. This will require streamlined processes and increased use of personalization technologies, thus providing fruitful avenues for further research on the topic.

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