

Mobile Game Advertising Recall in Pre- and Post-Game Experience

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The mobile channel is a prominent way to reach an ever-increasing number of customers, and games designed for mobile devices are the most prominent form of mobile entertainment. This research examines players' attitudes, advertising recall and service quality in a pre- and post-game advertising context by extending and modifying Tsang, Ho, and Liang (2004) research framework to a new mobile service context. A real-life test followed by focus group discussions are used to evaluate players' attitudes, explicit memory and experiences while they use the mobile game service. Additionally, six managers of mobile marketing companies were interviewed to increase managerial relevance. The results revealed that the attitudes toward pre- and post-game advertising are not only dependent upon message content and user demographics, as in text message advertising, but also the quality of the game service itself. An explicit memory test indicated that players can recall advertisement but struggle to memorize specific brands advertised. The research concludes by indicating future research avenues.

Key words: Mobile game advertising, pre- and post-game advertisements, advertising recall, service quality, explicit memory

JEL classification: M00, M31, M37, M39, L86, L82.

1. Introduction

Research on mobile marketing is still at the nascent stage and scattered across different academic disciplines (Shankar and Balasubramanian, 2009; Shankar et al., 2010; Varnali, and Toker, 2010). Mobile advertising, a part of mobile marketing, has been studied from several different perspectives including giving permission (Barwise and Strong, 2002) and building relationships (Leppäniemi and Karjaluo, 2005) and acceptance of SMS (Tsang, Ho, and Liang, 2004) but mobile game advertising has received little attention (Salo and Karjaluo, 2007; Ben and Porter, 2010; Komulainen et al., 2013) even though mobile games are becoming more and more popular. Spending on mobile advertising is expected to total more than 20 billion in 2015 in the U.S. alone while average time spent on mobile media is 2h 51 minutes per day (eMarketer, 2014a/b) and 39.8 % of the market plays mobile games (eMarketer, 2013). Parallel to this trend the mobile game revenues in 2013 reached close to \$1.8 billion (eMarketer, 2013).

It is particularly rare to find advertising research focusing on mobile games which are studied from the point of view of consumers (or players) and managers. As for research questions this research seeks specifically to find out answers to question: how consumer advertising recall plays out in mobile game context? Thus, consumer attitudes, advertising recall pre- and post-game and mobile game service quality are the central focus of this research.

This research investigates with a qualitative approach mobile game players' attitudes and experiences toward pre- and post-game advertising and advertising recall in a real-life experiment situation. As a result, this study shows that pre- and post-game advertising are not only dependent upon message content and user demographics, as in text message advertising, but also the quality of the game service itself. More importantly, an explicit memory test indicated that players can recall advertisement but struggle to memorize the brands advertised.

First, the study presents a literature review of mobile games, attitude, advertising recall and consumer experience. The study goes on to present research framework, and then methodological approach. The third section reveals the results of an empirical study questioning players' attitudes, advertising recall and service quality. Finally, the results and managerial implications as well as potential avenues for future research are illuminated.

2. Literature review

2.1 Consumer attitudes, advertising recall and service quality

Fishbein (1967) defined an attitude as a *learned predisposition of human beings*. Attitude is also a person's enduring evaluations of what is favorable or unfavorable, emotional feelings and action tendencies toward some object or idea. The relationships between attitude, intention and behavior have been confirmed (Tsang et al., 2004). Thus, consumers' attitudes seem to have an effect on their purchase behavior (Drossos et al., 2007). Buying intentions are less favorable when a consumer has a negative attitude toward mobile advertising in general (Drossos et al., 2007; Nelson, Keum and Yaros, 2004). This means that if marketers want to use the mobile channel in an efficient way, they need to understand how consumers perceive and evaluate advertising in mobile media and devices (Haghirian et al., 2005; Xu et al., 2008). Consumers generally have negative attitudes toward mobile advertising, unless they have specifically consented to it (Tsang et al., 2004). By relying on the permission of the target audience, permission-based advertising focuses on reducing the irritation (Barwise and Strong, 2002; Tsang et al., 2004).

Based on the previous literature on attitudes toward advertising and different consumer behavior models and conceptualizations, Tsang et al. (2004) constructed a framework to illustrate the factors affecting consumer attitudes toward short message service (SMS) based advertisements and the relationships among attitudes, intention to view mobile ads and users' actual behavior (Figure 1). In Tsang et al. (2004) message content is insightfully presented which is pertinent in any advertising and the model is widely applied (López-Nicolás et al., 2008; Xu et al., 2009; Bellman et al., 2011) and it is used here as nomological core to further build on.

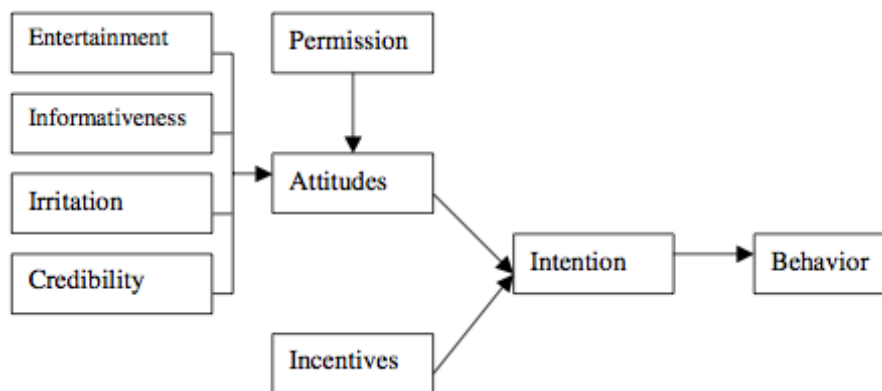


Figure 1. Consumer attitudes toward SMS-based advertisements

Source: Tsang et al, 2004

Tsang et al. (2004) illustrate how message content (entertainment, informativeness, irritation and credibility) and permission together affect consumers' attitudes (Figure 1). If mobile advertisements include some incentives like discounts, they together with positive attitudes, affect consumer intentions to receive mobile advertising. Intention then has an effect on actual advertisement perceiving behavior (Tsang et al., 2004). The current study is qualitative in nature and attempts to extend and apply Tsang et al. (2004) model to a new context of mobile games.

To continue from Tsan et al. (2004) there are different factors that influence an advertisement's credibility. Apart from the message content, factors like image of the company, brand and advertising medium can also affect credibility (Haghirian et al., 2005; Lafferty, Goldsmith, and Newell, 2002). McKenzie and Lutz (1989) define advertising credibility as the consumers' perception of the truthfulness and believability of advertising in general.

Advertising recall and effectiveness are well documented in different literatures (Vakratsas and Ambler, 1999). Just to illustrate, there is a comprehensive body of research available on the effectiveness (i.e. how well desired influence is gained) of product placement in movies and TV-series (Nebenzahl and Secunda, 1993; Russell, 2002; Cowley and Barron, 2008). All of these studies use explicit memory tests to measure how consumers recall the advertising messages they have been exposed in previous tests or during their life. Explicit memory occurs when people intentionally and consciously try to recollect a

specific past event (Schacter, 1987; Yang et al., 2006). These studies have been criticized because they have extensively used explicit memory tests to measure advertising recall and recognition (Law and Braun, 2000).

Some studies have concluded that the traditional explicit memory measure should be supplemented with measures of implicit memory - especially an in interactive game context where players are actively participating in the game (Yang et al., 2006). However, in a mobile context games are usually rather simple and include relatively little interactive elements (if compared to e.g. massively multiplayer online role-playing games MMORPG and other online community centered games). Normally, experience refers to experiences of use of the advertised product. Here the product advertised or used is the mobile service system that provides mobile game experience. According to Vakratsas and Ambler (1999) experience (together with attitude and recall) is one of the mediating factors that can change responses to advertising. Thus, it can be considered a filter of the initial advertising input and it is even suggested that usage experience has a greater impact on attitude formation than advertising (Vakratsas and Ambler, 1999).

To further explicate, hierarchal advertising models like Attention, Interest, Desire, Action (AIDA) have dominated advertising literature for many decades. However, some researcher's see that these "hierarchy-of-effects" models cannot be precisely supported empirically (Lavidge and Steiner, 1961) and that they exclude experience effects (Vakratsas and Ambler, 1999). Instead, advertising effectiveness should be evaluated in a three-dimensional space of affect, cognition and experience (Vakratsas and Ambler, 1999). Affect (A) is the "feeling" dimension and includes attitudes. Cognition (C) is the "thinking" dimension including recall. Finally, the experience (E) dimension highlights the importance of consumers' experiences on advertising effectiveness (Vakratsas and Ambler, 1999). This research was designed to take into account players' attitudes, explicit advertising recall and players' experiences (ACE) when evaluating the impacts ad-funded mobile gaming where advertisements are shown before and after the game play.

Service quality is approached from many research angels one focusing on traditional service e.g. the quality of a bank branch service (Grönroos, 1984) while another research viewpoint is on online service quality of a bank services or multi-banking (Kang et al., 2011; Shih et al., 2010; Tan et al., 2010).

It is clear that game experience is an issue that most likely will influence mobile game advertising attitudes and recall besides service quality. Thus it is not enough to research message content but the whole game service quality needs to be studied in order to understand players' attitudes. Therefore, in this research, experience refers to the usage experience of the mobile game service. Ease of use is an important component of service quality (Ha, Yoon, and Choi, 2007) and it is qualitatively also considered in this research.

2.2 Mobile games as a research context

Mobile games can be seen as a part of mobile entertainment together with mobile videos, apps and wallpapers (Salo and Karjaluoto, 2007; Shih, 2011). While some mobile games, such as Tetris, are designed purely for entertainment purposes, mobile advertising games are usually created for advertising (Salo, 2010). Mobile games also come in many forms including browser, downloadable, embedded and memory card based games and there is no commonly accepted classification of the mobile games available (Rajala et al., 2007). Games that are played with hand held devices like mobile phones, tablets and consoles (PS Vita), digital music players and personal digital assistants (PDAs) can be called mobile games. There have been several attempts to categorize mobile games (Salo and Karjaluoto, 2007; Salo, 2010). Rajala et al. (2007) used a categorization that split games into standalone, server-based or streamed games. This research focuses on the games based on Java technology as those were developed by the real-life test partner MAS company.

In mobile games, two unique characteristics are combined creating a totally new medium for advertising. First, the mobile channel itself is a distinctive personal medium (Salo and Tähtinen, 2005). Concepts such as flexibility, ubiquity, localization, personalization and mobility are often linked to the value proposition of the mobile channel (Shankar and Balasubramanian, 2009). Second, games are also a unique medium for advertising in terms of the highly interactive experience they offer (Glass, 2007). This means that players are actively playing - immersed, rather than passively watching TV and skipping channels for example. Players' involvement in games has an impact on the amount of their attention that is occupied, that is, their attentional resources. As a result, getting brands noticed may be more difficult in the

game context (Lee and Faber, 2007). Mobile games combine both the mobile channel and games into a single medium.

Even though games in general are an interactive medium and demand players' attentional resources, there might be differences between mobile and other games. Winkler and Buckner (2006) noticed that players are left with more free attentional capacity when they play simple games. A player who is not so involved in dealing with the game concept can subconsciously focus better on the advertising messages within the game. This research focuses on mobile gaming where advertisements are shown before and after the game play session similar to advertising on TV. According to Yang et al. (2006) this can be conceptualized as a part of in-game advertising.

3. Conceptual framework

Tsang et al. (2004) framework provides a nomological core for the study and it has been extended to include the elements of service quality and individual attributes influencing to mobile in-game advertising. Research framework is illustrated in Figure 2 and it is used to guide the empirical research.

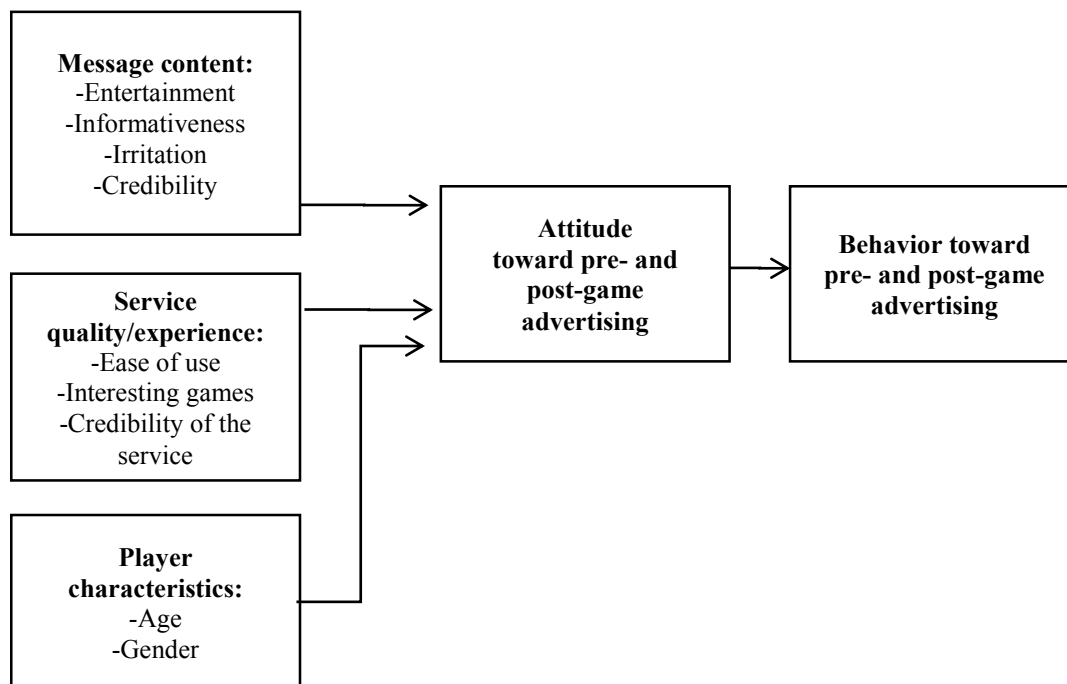


Figure 2. Attitude towards pre- and post-game advertising in a mobile device

Message content elements (entertainment, informativeness, irritation and credibility) can either have a positive or negative effect on attitudes depending on how well the advertisement is planned (Haghirian et al., 2005; Tsang et al., 2004). When mobile advertising is based on receivers' permission, it has a positive effect on attitudes (Barwise and Strong, 2002; Tsang et al., 2004). Experiences are formed during the use of the game service. Thus, game service quality is assessed from the perspective of ease of use as suggested by Ha et al. (2007). Consumer demographics and attributes are included in the framework even though some research suggested that they do not play such a dominant role (Haghirian et al., 2005).

Frequency of exposure (repetition of the advertising message) reduces the value of advertising, creating negative attitudes (Haghirian et al. 2005). On the other hand, it is well documented that a consumer's ability to recall information increases with message repetition (Anand and Sternthal 1990; Batra and Ray, 1986; Cacioppo and Petty, 1979; Calder and Sternthal, 1980). Frequency of exposure enhances recall, which in turn increases advertising effectiveness, but only to a certain degree, because of the diminishing returns of advertising (Vakratsas and Ambler, 1999).

When attitudes are positive consumers' intention to receive advertising becomes greater and vice versa (Tsang et al. 2004). If advertisements include incentives, they can have a positive effect on intentions (Tsang et al. 2004). Finally, our research framework suggests that positive attitudes and intentions, teamed with sufficient recall should create an effective advertisement which affects consumer behavior.

4. Methodology

This research is organized around three central data collection instruments. First, a real-life test (a field experiment) with consumers is conducted. After that, a focus group discussion is organized. Third, in-depth interviews with mobile game advertising companies are conducted to shed further light on the managerial relevance of the research.

The real-life test takes place in a real end-user environment and is used to understand and explain the nature of a player's reactions to pre- and post-game advertising in a mobile device. The approach of this research is qualitatively driven and can be called real-life test research where some of the best principles of qualitative research are combined (see e.g. Carnagey et al., 2007). The study adopts a mixed qualitative approach to improve our understanding of the emerging phenomenon (Jansen et al., 2000).

Additional data was collected by using four focus groups consisting of four to eight people who were recruited to participate in the real-life tests and following focus group discussions. Players were recruited by sending invitation letters outlining the real-life nature of the test to the e-mailing system administrators of schools in Northern Finland. From the volunteers, those players whose mobile phones supported Java were selected for the research stage. In all, 24 users, six female and 18 male, aged between 13 and 26 were selected. The intensity of game playing varied – with some hard-core players who play several times a week and casual players who play only once a month or less often. The required game service and games for the real-life test were provided by Finnish company, MAS, who provides free games to customers by adding advertising to the gaming experience. Similar business model was also adopted by U.S. based company Greystripe. In addition, six top level managers from six European mobile game and mobile game advertising companies were interviewed and the relevance of the results of the real-life tests were discussed and ideas were further developed.

The real-life test was conducted in four parts: 1) participants playing the service provider's ad-funded mobile games from 15 to 25 minutes in a natural environment, 2) a moderator observing players and taking notes, 3) moderated and videotaped group discussions lasting from 60 minutes to 90 minutes and 4) finally tests for explicit advertisement recall. Figure 3 gives an overall impression of the mobile games studied.



Figure 3. Mobile games played in the real-life test

The test and the discussions that followed were conducted in Finnish. All excerpts from the transcribed texts have been translated to English and then back-translated to Finnish by researchers and two colleagues to improve the validity of the study.

The data from group discussions, observations and memory tests was then analyzed directly from videotapes and notes. Analyzing the group discussion data directly from videotapes is especially beneficial, because then the data is considered as a whole rather than as a set of discrete responses allowing the analyst to re-experience the group, body language and tone of the discussion (Catterall and Maclaran, 1997). This further helps the analyst to find the real value of the group data by analyzing the interaction between participants. As opposed to individual interviews, group discussions go through different stages including for example, *forming*, *storming*, *norming* and *performing* (Tuckman, 1965). This also makes it crucial to work with complete data and use different methods of analysis than required with individual interviews, which normally rely heavily on breaking the transcripts down into text segments and allocating them themes and headings (Catterall and Maclaran, 1997). Interviews with managers were also transcribed and thematically analyzed (Miles and Huberman, 1984).

5. Empirical study: players' attitudes, advertising recall and service quality

The research framework is used to match, evaluate and analyze a player's responses, and the message content consists of four parts that together affect consumer attitudes and finally influence of advertising. These four parts, entertainment, informativeness, irritation and credibility, were used to guide group discussions in order to investigate players' attitudes towards the ad-funded mobile gaming. Next, each of the four parts of the message content will be examined separately. Following that, the other parts of the research framework will be subjected to closer examination.

5.1 Message content - Entertainment

Players did not consider the advertisements they saw entertaining and most of the players did not pay any special attention to them. As John states:

"I didn't investigate them that closely, I just kept pressing next all the time".

Alice had similar opinion as she states:

"I didn't really even notice what they were advertising. I just wanted to get rid of them as quickly as possible".

Peter highlights the novelty value of advertising by following statement:

"At least I have developed some kind of filter, so that there needs to be some kind of catch for me to even bother to look at it"

In general, the themes of the advertisements were not particularly interesting, and younger male audiences especially would have appreciated topics like ice hockey or any kind of sports activity. Further, males over 20 year indicated that advertisements were poorly targeted which lessened their entertainment value. Females would have liked to have seen other topics such as fashion.

5.2. Message content - Informativeness

It was interesting to notice that the advertisements did not provide any new or relevant information to the players. Poor targeting emerged as one of the reasons for that. Those players who had previously received some form of mobile advertising said that advertisements that included discounts or special offers were positively received. Examples they mentioned were operator specific discounts and a local nightclub's special events. These are popular among younger people in EU. Targeting by time and location can also increase an advertisement's informativeness. One of the players reported that mobile advertising by a local department-store, he had received at Christmas time had affected his purchase behavior.

5.3 Message content - Irritation

Generally advertisements were not considered irritating. As one of the respondents illustrates this point by stating:

"They didn't jump on my face there" (Mary).

The option to skip over advertisements was seen as a good thing. One of the players was unable to skip over the ads and the timing of the automatic slideshow (showing ads) was too long in his opinion. The best thing about the pre- and post-game advertising format was that advertisements did not interrupt the game. As Peter describes in his comments:

"Then I might be angry to some extent, if they jumped on the screen during the game".

Some of the players were familiar with the type of advertising employing a text bar visible at the top or bottom of the screen during the game. The pre- and post-game ad type was considered better, because of its option to skip over the adverts at the beginning after which the game can be played without interruption.

5.4 Message content – Credibility

It was interesting that nobody clicked any of the advertisements and not all even noticed that it was possible to open the advertisements. Automatic add slideshows could have been clicked and the customer would be referred to a specified landing page. As the advertisements were not entertaining or interesting players skipped over them and thus it was difficult for players to evaluate the credibility of any single advertisement. Instead, the credibility of the whole ad-funded mobile game service was placed in doubt as players received several error and warning messages during the playing sessions. Still, all of the players

thought the service provider's website was professional. However, one statement can be used to evaluate the credibility. Besides the language, the overall layout of the webpage affects credibility. Peter put it in this way:

"All of the game sites are almost similar. If you go somewhere else, it looks the same"

5.5 Service quality and permission based advertising

Notably, none of the players thought that pre- and post-game advertisements were irritating, and players said that ads were a fair trade off for free games even though their permission for advertising was not specifically requested. As suggested by previous studies consumers generally have negative attitudes toward mobile advertising unless they have specifically consented to it (Tsang et al., 2004). In this context, advertising was seen in a positive way as enabler of the service.

An experience element was used to measure service quality in two phases, namely evaluation of ease of use and evaluation of players' playing experiences. First, players were observed during the real-life test situations when they used the game service. Second, players were asked to describe the usability of the service in group-discussion sessions. The data from the observations and discussions was contradictory. Almost all of the players said the use and introduction of the service was easy and handy: First Peter and then John illustrates:

"Was easy, wasn't hard" "Well, at least quite easy to use".

Sharon and Mary continues:

"Or not necessarily at the first time, but after you have done it few times it succeeds then" "Didn't cause bigger problems"

Nevertheless, during the observations of real-life experiment and following discussion some problems arose. Not all knew how to open web pages with mobile phones. There were also problems with the installation and downloads. Before the game download began many players got warning messages about an untrusted service provider. Furthermore, the installation folder was in different places in different phone models and not all players could find where the game was installed without help. In one instance, the downloaded game did not work at all. Also mobile phone and carrier related data and internet setting challenges occurred in some of the mobile phones. It is noted that each individual had their own mobile phone with them during the real-life test.

Considering the amount of problems faced, it was surprising that players felt the service was easy to use. There might be several reasons for this. It could be that players were reluctant to disclose problems because they thought to do so would reflect poorly on their technological skills, or perhaps they were just being polite. Many of the players were using this kind of service for the first time, so they could not compare it to anything. If previous experience had been available results could have been different.

The games themselves provoked different emotions for females and males. Females could not relate the exact properties that would have made the games better. They valued simple games where difficulty increases with levels. Younger males were unanimous in thinking that 3D-games are better and 3D-graphics make games clearer. Many of the females stated that 2D games are clearer with mobile phones. Males desire new and interesting ideas in the games and get bored with simple games easier than females, especially when the quality of graphics was low.

Males also showed a natural interest in multiplayer games. Females were not interested in multiplayer games as they have other things to do with their friends. Females play alone when they are bored and there is nothing else to do. All players thought the games they played were average and they did not expect much from them. As Mary's statement illustrates:

"I don't know, there can't be a very good game on a mobile, can there?"

John continues:

"There can't be any superb game on a mobile"

5.6 Recall

An explicit memory test was used to measure players' advertising recall. Players were not told to pay any attention to the advertisements. They were told that the purpose of the research is to gather their opinions on an ad-funded mobile game service.

After the group discussion players were given a blank sheet of paper to write down all of the

advertisements they could remember after playing the games. There were several reasons to use explicit instead of implicit memory tests. First, as required by the real-life test research, the service provider's live service was used to provide the advertisements. This meant that the moderator could not know which advertisements each player saw – only the names of the advertisers who had an agreement with the service provider were known beforehand. Second, the implicit memory tests using word-fragment completion tasks have their own disadvantages relating to the letters revealed. There is no agreed method to determine which letters to reveal, so revealing different letters might give different results.

The first issue to be highlighted is that all of the players remembered that in the service, there were some advertisements within the mobile games they played. What is even more significant is that several players could also remember some of the advertised product or service. A few of the players could remember some of the advertisements, but none could report the exact details of the offer advertised. Table 1 summarizes each player's answers to the explicit memory test.

Advertisements players remembered		Ads present in service
Male	Female	
<ul style="list-style-type: none"> • Poker game (3 times) • Elisa, win now • Mobile chatroom, win now, Elisa • Game advertisements • Elisa, Pacman • Win now two times, Pac Man • Some poker game • O2 (twice) • I can't remember any exactly but in one advertisement there was a big O • Chatroom • O2/H2O or something • Some music thing • O2 SMS or maybe Q2 SMS • Some female singer, maybe Rihanna 	<ul style="list-style-type: none"> • I can't remember any (twice) • Some perfume, others I don't know • Perfume advertisement (twice) • Perfume advertisement, some manga character 	<ul style="list-style-type: none"> O2 Ladbrokes Jamba FlirtyMob Harajuku Joop NME 123play.com's own advertisements

Table 1. Advertisements and companies advertising with the service

Table 1 depicts the companies and brands that were advertised in the service on the right and compares males and females on the recall. Table 1 reveals that three male players remembered an advertisement by Finnish telecommunications operator, Elisa. However, Elisa had no advertising agreement with the service provider and there were none of Elisa's advertisements in the service. The telecommunications operator O2, whose advertisement was included in the game, uses a similar color scheme to Elisa, so it is possible that some of the players mixed the two brands. O2 was the only company players could name from the advertisements. Other than that, they only remembered advertised products or services like a perfume and a game. It seems that familiar brands are more easily remembered. Overall attitudes toward advertising were quite neutral in all groups. As Peter states:

"But advertising in general, it doesn't annoy me. It's just a necessary evil which helps to bring us more shitty programs on television".

It can be postulated that attitudes are not only determined by the message content but also the service quality affects players' attitudes.

6. Findings

The purpose of this study was to examine how consumer's attitudes, advertising recall and service quality can be conceptualized and empirically studied in a pre- and post-game advertising context. Players'

attitudes, advertising recall and service quality have been used to evaluate advertising influence as suggested by Vakratsas and Ambler (1999). Following Tsang et al. (2004) the research framework was constructed where entertainment, informativeness, irritation and credibility define the message content. Table 2 summarizes findings on the message content.

Message content	Findings
Entertainment	Ads were not entertaining
Informativeness	No relevant information, better targeting would have increased informativeness
Irritation	Adverts did not interrupt the game
Credibility	Credibility of the whole service was at low levels

Table 2. Players' attitudes toward message content

Players did not think the advertisements they saw were entertaining nor did they receive any new or relevant information. They did admit that entertainment and informativeness would have been important elements for a good advertisement. Entertainment can be increased with better targeting and by using topics that are of interest for the target group. In addition, the format of an advertisement can increase entertainment, and young males thought video would outperform pictures. Informativeness is increased through better targeting by group, time and location.

The results indicate that advertisements do not interrupt the gaming experience, which is a positive finding for marketers. Mobile games are played in short sessions and it is important that it is easy and quick to launch the game. Advertisements that interrupt the game are irritating and negative feelings are easily transmitted to an advertised product or brand.

Credibility of the message content was not an issue as opposed to the credibility of the whole service, which is perhaps more important in the ad-funded mobile game context. Credibility of the game service can be achieved through a clear website and intelligent service design. Warning and error messages decrease credibility. Language selection can increase credibility and ease of use as people have different preferred languages.

Attitudes are more positive if advertisements offer discounts or other benefits that increase the perceived value of the game service. Also all players wished for better-targeted advertising, suggesting that targeting alone can enhance entertainment and informativeness. Thus, discounts and personalization of service by targeting the ads more can be added as new elements to message content.

Even though Haghirian et al. (2005) found that consumers' attributes do not play a dominant role regarding advertising value, there seemed to be differences based on both age and gender in this research. These differences were mostly related to the kind of games and advertisements players liked. Hence, player demographics play a role in mobile in-game advertising.

Players' attitudes toward advertising are not only determined by the message content. In the mobile in-game advertising context, players' attitudes toward advertising develop as a part of the whole service. The service quality affects what kind of attitudes mobile in-game advertising arouses. Ease of use and good games positively affect service quality (see also Moynihan et al., 2010).

During the participant observation several challenging areas of the service quality occurred which can be summarized into the five following areas. First, users had problems with opening the webpage with a mobile phone. Second, difficulties were faced when downloading and installing games. Third, localization was insufficient as foreign language warning messages caused confusion among some of the players (foreign language - loss of credibility). Fourth, some had difficulties in launching the game (launch, location of installation folder, error in game) highlighting the importance of testing game service with multiple devices. Fifth, problems related to matching / pairing (e.g. mobile phone identified as a computer when using Opera browser, carrier and phone related issues e.g. phone settings).

Results also revealed that permission is not necessarily needed for game advertising as long as it is clearly stated that the service is ad-funded and advertising is not irritating. Results for explicit advertisement recall show that players can recall game advertisements but seldom remember the advertised brands. Players mainly remembered advertised product categories. Free games – free to play - are a sufficient incentive to accept advertising, but marketers could further increase the effectiveness of their campaigns

by including special offers or discounts in their advertisement messages. Figure 4 presents preliminary framework that could be further crystallized and empirically tested in future studies. All the relationships postulated can be stated in hypothesis format and assumes a positive relationship.

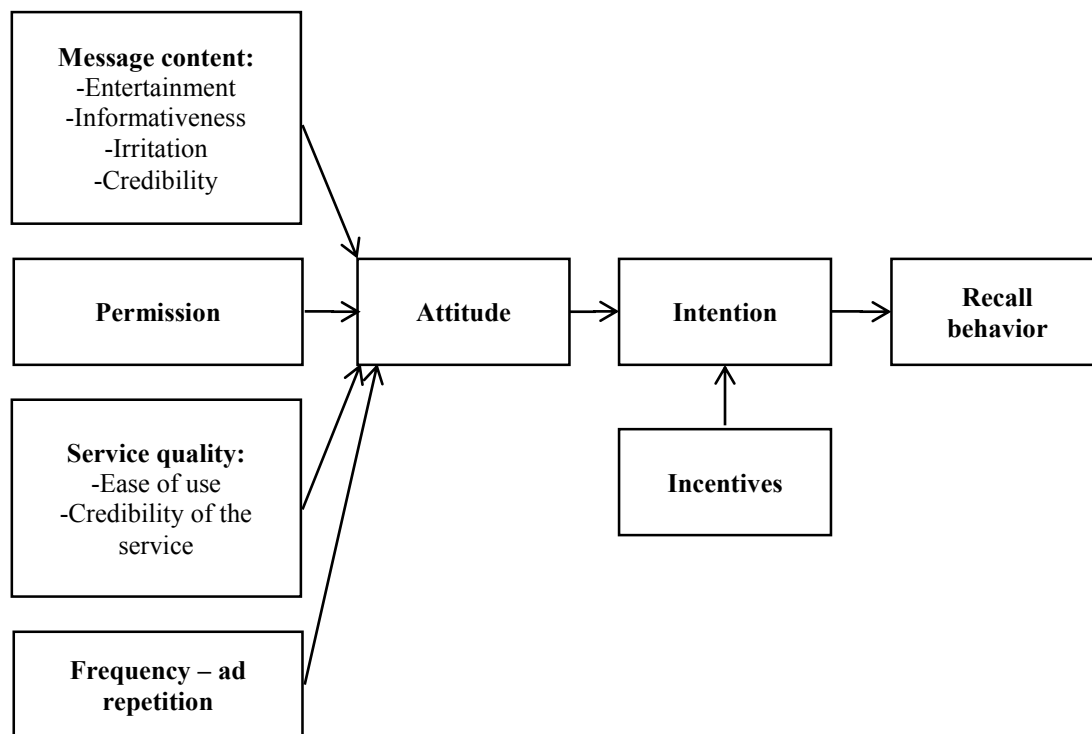


Figure 4. Pre- and post-mobile game advertising recall (extended from Tsang et al., 2004).

7. Conclusion

The purpose of the study was to empirically demonstrate with help of a qualitative approach, using a real-life test, how players' attitudes, advertising recall and service experience are formed when playing mobile games where pre- and post-game advertising is included. Current research developed a theoretical framework to evaluate the way attitudes, recall and service experience interplay in a mobile device context.

Empirical studies in real-life test and focus groups illustrated that attitude toward game advertising is rather positive but can be enhanced with permission management. Results show that for advertising to be effective, receivers' attitudes need to be positive and they should remember advertisements either implicitly or explicitly. Our preliminary model, pending for further testing, hypothesizes how attitudes toward pre- and post-game advertising in a mobile game context are formed.

Advertising recall was at good level, however individual brands were seldom recalled mainly due to the fact that brands were not familiar for the consumers. Developing brand identity is still important topic to differentiate brands from each other. However, advertisers should define their advertising goals explicitly and be very clear on what they want their customers to remember from their advertisements. No one from the real-life test opened any of the advertisements. Therefore, it is very important that the advertisement itself includes all the necessary information.

Consumers did not pay much attention to the advertisements, so they were seldom remembered and our subjects could mainly recall product categories. This does not mean that the advertisements were ineffective. This could simply indicate that implicit memory tests might be a more suitable way to assess the influence of mobile in-game advertising. Critical to the success of implicit memory performance is simply exposure, not its ability to attract or sustain attention (Shapiro and Krishnan, 2001). Thus, pre- and post-game advertising might be most effective when used with low involvement products. For impulse buying and for many low involvement purchases consumers do not try to retrieve ad information and the only manner in which prior advertising exposure can affect choice is through unconscious, implicit means (Shapiro and Krishnan, 2001).

Service quality or experience was seen as rather functional although language and website design

caused some problems. Advertising content plays a key role in recall and attitude formation. As such advertisements were not perceived entertaining not informative. On a more positive note advertisements were not seen irritating and mobile service was perceived in a credible light.

For managers, it is noted that the practical results indicated next are derived from a real-life test and discussions with managers from six companies involved in the mobile game industry. Managers highlight the importance of cooperation between game developers, brand owners and telecommunication portal owners when designing and launching new games or versions of games. As for the game design the players contributed many ideas to develop the games and to enhance the service. Females preferred simple puzzle games, while boys under 18 expected new and innovative ideas combined with 3D graphics. Younger males thought video would have been a better format for an advert than a picture. Females thought a video would be irritating while older males thought that it would not necessarily add any value, but they would probably pay more attention to it. It seems that mixed method or providing options to choose from is a suitable strategy.

Seven future research avenues are proposed next. First, the proposed preliminary framework to study pre- and post-game advertising should be verified quantitatively. Second, what types of games are perceived as creating experience and value? Third, how can advertiser enhance customer recall of mobile game advertising? Fourth, how can we measure the effectiveness of mobile in-game advertising? Studies could be conducted longitudinally and over different industrial sectors. It is very likely that low involvement products and high involvement products have different influences on attitude and recall. Fifth, the implicit advertising recall levels for pre- and post-game advertising could be researched. Comparing the effectiveness of different mobile game advertising formats might also be a future research avenue. Better still, researchers could address the question of whether ad-funded services are profitable in the long run and in what ways greater profits could be realized. Questions of how message content and trust in a mobile game service provider influences purchase behavior could be studied on lines similar to those used by Westerlund et al. (2009). Seventh, similarly, temporality and spatiotemporal relationships could be studied in the mobile game advertising context. The current study was qualitative in nature and the real-life test was conducted in Finland with younger players. Future studies could also include older players and a survey could be conducted to tease out the cultural differences that effect attitude formation and recall of advertising.

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