Dynamic In-Game Advertising

How important is it that ads are dynamic and capable of changing?

Ludvig Hansson

Abstract

As the media habits of both men and women have changed new ways of delivering advertising have become available, and among these new methods is in-game advertising, and from in-game advertising a new form of game advertising grew: dynamic in-game advertising. Dynamic in-game advertising is simply in-game advertising that is capable of changing the content it displays. The purpose of this survey study was to determine how important it is that in-game ads can change, and to this end a survey using 5-point Likert scales anchored at “1=strongly disagree” and “5=strongly agree” was constructed and distributed through Facebook and the message board and aggregator site Reddit. 209 responses were gathered. The results showed that gamers, while having a negative attitude towards in-game advertising and showing no preference for dynamic ads over static ads, they do tolerate dynamic in-game advertising to at least the extent as they tolerate static in-game advertising. The conclusion drawn is that dynamic in-game advertising can be very important for publishers since it allows for more efficient and targeted ads which can lead to added revenue without any significant risk of negative attitudes and backlash.

Keywords: in-game advertising, dynamic in-game advertising, marketing, consumer attitude

Introduction and Background

The fact that advertising is pervasive to nearly all media is impossible to deny, and video games are certainly no exception to this fact (Nelson, Keum & Yaros, 2004). But as is the case with all other forms of media in which advertisements are found there are different form of ads and of course also different ways of presenting ads in video games. As a form of entertainment video gaming has grown explosively, especially in the last decade (Poels, Janssen & Herrewijn, 2013) and so have the costs of producing video games (Raatikainen, 2012), seeing as the games of today are a far cry from their humble beginnings in early arcades and early home systems such as the Atari 2600 or the Nintendo Entertainment System. There is of course a reason for the prevalence of advertisement in games, that being that media habits are changing, with many young men reporting that they spend more time playing video games than they do watching television (Nelson et al, 2004), and more recently women, even those aged 18 and older are now one of the fastest growing demographics within the video game industry, combined with the increased costs of production (Raatikainen, 2012). The ways ads are presented can differ from game to game: some games contain product placements which is one of the oldest methods of advertising used in games,
going as far back as the original Nintendo Entertainment System in games such as Domino’s Pizza’s “Yo! Noid” (Nelson et al, 2004) which featured the Pizza chain’s then Claymation mascot, and with the advent of in-browser gaming even banner and video ads have found their way into gaming (Dardis et al, 2016).

Due to the changing of media habits of both men and women it is clear that video games have potential as a marketing channel, and research has demonstrated that in-game advertising can be effective (Herrewijn & Poels, 2014; Huang & Kang, 2012) and that certain types of in-game can be more effective than others, such as ads with low ad/game relevance having greater effect on ad recognition, whereas high ad/game relevance yields more positive attitudes towards the ad placement. The term in-game advertising, or IGA generally refers to any marketing activity within video games, including advergames, games that exist entirely as ads (Wise, Bolls, Venkataraman & Meyer, 2013), and ads embedded into the games themselves such as the aforementioned product placements. Generally, the term IGA refers to advertisements that are imbedded into a game’s world such as on virtual billboards in games (Poels et al, 2013) or direct inclusions of branded products in games, such as actual cars in racing games or real clothing brands in games that feature character customization. These imbedded advertisements can be either so called static in-game advertising (SIGA) or dynamic in-game advertising (DIGA) (Raatikainen, 2012). As its name implies, dynamic in-game advertising is a form of in-game advertising that is changeable, and using DIGA a game publisher can create a virtual advertising space within the game world which can be sold to advertisers. This allows advertisers to purchase ad space within games with an online component just as they would on a website such as Facebook or Youtube, and this provides another stream of revenue which, given the great costs of game production may be necessary (Raatikainen, 2012).

Problem

While previous research has suggested that in-game advertising can prove effective (Herrewijn & Poels, 2014; Huang & Kang, 2012), the amount of research on the importance and effectiveness of dynamic in-game advertising content is limited. It is quite apparent that being able to change ads to be suitable for specific games and audiences is beneficial, and indeed that from the perspective of game publishers it is beneficial to be able to maintain a virtual advertising space which allows for additional sources of revenue, which, given the still rising costs of game development may be of significance. However, if DIGA is to be of any use for both game publishers, developers and advertisers then some idea of how players perceive this form of in-game advertising is needed to determine the importance of dynamic advertising, and if it is a more favourable alternative to SIGA, that is, static in-game advertising.

Research Question

Thus, the question posed by this paper is “How important is it that ad-content in games is dynamic and capable of changing”. Importance, in this case refers to its overall significance as a marketing method which includes effectiveness and the attitude of players toward the ad placement as well as its effect on the attitude of players toward the game as a whole.

Literature Review

How effective is in-game advertising?

In-game advertising can indeed be an effective marketing technique, partly due to the potential of games as a marketing channel and traditional advertising such as banner ads can
be effective when used in games (Yeu, Yoon, Taylor & Lee, 2013). Previous research has established that in-game advertising integrated in a game’s virtual environment can be effective (Ghirvu, 2012; Herrewijn & Poels, 2014; Huang & Kang, 2012; Yoo & Eastin, 2016). Advertising effectiveness is defined as whether and to what extent advertisements or advertising campaigns reach their marketing goals and the effectiveness with which they reach and influence their target audience in the desired way (Chandler & Munday, 2016). There are several factors that are considered to be indicators of advertising effectiveness, such as intent of purchase (MacKenzie & Lutz, 1989; Lee & Hong, 2016). With IGA in mind there are several factors influencing its effectiveness, such as ad/game relevance (Huang & Kang, 2012) and the position of the placement within the game (Herrewijn & Poels, 2014) and ad type (Huang & Kang, 2012) to name a few. Huang & Kang (2012) found that animated in-game ads, for instance on billboards within the game’s world, generate higher levels of ad recognition when compared to static, still image ads, and the same study also found that in-game ads with low ad/game relevance generated higher levels of ad recognition, while high ad/game relevance generated greater positive effects on players’ attitude toward the ad placement. Relating to the congruence between ad and game, the general context of a game, e.g. emotional or not emotional, can affect ad and brand recall (Yoo & Eastin, 2016). However, some research has also demonstrated that high game/ad relevance can in fact have a greater positive effect on recognition when compared low levels of game/ad relevance (Granquist, Strömberg, & Søilen Solberg, 2015).

**The attitude of gamers toward in-game advertising**

Attitude can be defined as a learned disposition towards an object or situation which provides individuals with a tendency to respond either favourably or unfavourably to the object or situation (Gross, 2010). The term attitude refers to a general and enduring feeling that is either positive or negative and which consists of an integration of beliefs and values. Within this integration, beliefs represent an individual’s knowledge of the world around them, although this knowledge may be inaccurate; and an individual’s values refers to their sense of what is good, desirable, worthwhile and vice versa (Gross, 2010). The attitude of players toward ad placements in games differ greatly from person to person, some considering that non-intrusive ads such as virtual billboards featuring actual brands are perfectly acceptable as they do not interfere with the gameplay experience at all (Nelson et al, 2004), while some are entirely opposed to advertising in games that they have already paid full price for (Nelson et al, 2004). Ad attitude can be affected by various aspects of the placements, such as ad/game relevance. The congruence between game and ad can positively influence player attitude toward the placement, higher relevance between the advertised brand and the game it is placed in can have a positive effect on players’ attitudes toward the placement, which in turn makes them more receptive to the advertisement and less likely to ignore it or find it annoying or intrusiv.

**A model of dynamic in-game advertising**

In his paper on DIGA in 3D games Raatikainen (2012) presents a model for optimal dynamic in-game marketing consisting of two primary elements, *gameplay experience* and *information processing*. Gameplay experience is further subdivided into the criteria of *Flow* and *Sense of Presence*, with *Flow* consisting of social interaction, interaction with the virtual environment and with any dynamic in-game advertising content and the audio-visual quality of the game’s virtual environment and dynamic in-game advertising content; and *Sense of Presence* also consisting of social interaction and interaction with the virtual environment and with any dynamic in-game advertising content and realism of the game environment and the dynamic in-game advertising content. *Information Processing* refers to the dynamic advertising
content itself and consists of subtlety, repetition and type of product advertised. These criteria are summarized into what Raatikainen (2012) considers to be indicative of optimal dynamic in-game advertising, which should be:

- Subtle
- Repeated
- Interactive
- Realistic
- Low-involvement product

Raatikainen (2012) posits that in order to determine what is optimal for dynamic in-game advertising the question that should be asked is: What properties of dynamic in-game advertising content are most obstructive to the 3D game’s gameplay experience. He goes on to argue that repetition is the property of dynamic in-game advertising content that players are most likely to find obstructive, and that repetition of the same product or brand in the dynamic advertising content is likely to lead to decreased perceptions of realism, and the extent of repetition that players find obstructive varies from player to player.

**Method**

**Survey design**

The primary data used in this study was gathered using online questionnaires distributed through the social network and aggregator site Reddit. Items were constructed based on reviewed literature and were presented as 5-point Likert scales anchored at 1=strongly disagree and 5=strongly agree. The first item, disregarding demographical questions, “Have you ever purchased a product after seeing it in a game you were playing or watching?” was intended to gauge the effectiveness of in-game advertising in general based previous research which established that its ability to lead to intention of purchase is an indicator of an ad’s effectiveness (MacKenzie & Lutz, 1989; Lee & Hong, 2016). Due to the nature of the item it was not presented as a likert scale, instead a simple multiple choice question was used. The response alternative “thought about it but never did” was included since intent of purchase does not necessarily lead to an actual purchase. The second item, “In-game advertising in full-price games is unacceptable” along with the third item, “In-game advertising breaks my immersion” were both intended to measure players’ acceptance of in-game advertising in general, both being based on Nelson et al (2004), who in their article claimed that many are opposed to in-game advertising in games they have already paid for and that many view games as an escape from reality, a diversion, and as such anything that lessens or breaks immersion is seen as a negative. Items four and five, “In-game ads that can change are less distracting than static ads” and “In-game ads that can change to suit my preferences are preferable over static in-game ads” respectively both attempt to measure if there is any preference for dynamic in-game advertising over static in-game advertising among players. Items six and seven, “I am comfortable with publishers and advertisers collecting personal data for the purpose of in-game advertising” and “Dynamic in-game advertising feels like an invasion of privacy” both attempt to measure how players feel about dynamic in-game advertising. Item eight, “Dynamic in-game advertising should be subtle and blended into the game's aesthetic”, and item nine, “Dynamic in-game advertising that shows the same content too often is distracting/annoying”, were both based on Raatikainen’s (2012) model of optimal dynamic in-game advertising and were intended to measure how well this specific part of the model lines up with the attitudes of players’ toward dynamic in-game advertising. The parts of the model measured were both part of his construct of optimal dynamic in-game advertising and were chosen based on their ease of identification by all players and the ease
with which they could be expressed as items. Further testing of Raatikainen’s model was not included since it was decided that these items would be sufficient for the objective of this study, which was to determine the importance of dynamic in-game advertising as a marketing method, not to evaluate existing research on the subject.

**Sampling**

This survey made use of a volunteer sample, relying on the aggregator site Reddit as well as the social media platform Facebook to distribute the questionnaires. Both were chosen due to convenience and ease of sharing content and reaching a large population. The target population was anyone who either frequently plays or watches others play videogames. Reddit was chosen due to the existence therein of communities dedicated to the spread of surveys both casual and academic, and due to the high portion of gamers in its user base. The sampling method used was a non-probability convenience sample, chosen for its inexpensiveness and time effectiveness.

**Results**

The survey was withdrawn after 209 responses had been collected, having reached its quota of a minimum of 200 responses. A majority of respondents found the survey through Reddit rather than Facebook.

Since previous research had established that both men and women play video games, gender was recorded in order to establish whether or not the attitude toward and the acceptance of dynamic in-game advertising and in-game advertising differed between men and women. The results did not indicate any difference between the genders, but it should be noted that there were significantly fewer female respondents than male. It is possible that a difference would be more apparent with a more even distribution of genders. The data from the other items is summarised below in the form of modal values, and in one case modal phrase, of the remaining items along with the standard deviation and means of all items to indicate their spread. Some items which are of the highest relevance to the research topic will be further illustrated in graphs in order to better demonstrate the distribution of opinions regarding the items’ statements.

<table>
<thead>
<tr>
<th>Item</th>
<th>Mode</th>
<th>Mean</th>
<th>Stdev</th>
</tr>
</thead>
</table>

![Figure 1: Gender distribution of respondents](image)
Have you ever purchased a product after seeing it in a game you were playing or watching?  

<table>
<thead>
<tr>
<th>Response</th>
<th>&quot;No, never&quot;</th>
<th>n/a</th>
<th>n/a</th>
</tr>
</thead>
<tbody>
<tr>
<td>In-game advertising in full-price games is unacceptable</td>
<td>5</td>
<td>4</td>
<td>0.936</td>
</tr>
<tr>
<td>In-game advertising breaks my immersion</td>
<td>5</td>
<td>4</td>
<td>1.146</td>
</tr>
<tr>
<td>In-game ads that can change are less distracting than static ads</td>
<td>3</td>
<td>3</td>
<td>1.21</td>
</tr>
<tr>
<td>In-game ads that can change to suit my preferences are preferable over static in-game ads</td>
<td>1</td>
<td>3</td>
<td>1.274</td>
</tr>
<tr>
<td>I am comfortable with publishers and advertisers collecting personal data for the purpose of in-game advertising</td>
<td>1</td>
<td>2</td>
<td>0.92</td>
</tr>
<tr>
<td>Dynamic in-game advertising feels like an invasion of privacy</td>
<td>5</td>
<td>2</td>
<td>1.035</td>
</tr>
<tr>
<td>Dynamic in-game advertising should be subtle and blended into the game's aesthetic</td>
<td>5</td>
<td>4</td>
<td>0.821</td>
</tr>
<tr>
<td>Dynamic in-game advertising that shows the same content too often is distracting/annoying</td>
<td>5</td>
<td>5</td>
<td>0.695</td>
</tr>
</tbody>
</table>

Table 1: Summary of responses

Going through the modal values of each item in order, with a five representing “strongly agree” and one representing “strongly disagree”, on the first item disregarding demographics: “Have you ever purchased a product after seeing it in a game you were playing or watching?”, the modal phrase was “no never”. Out of 209 respondents 118 had never purchased a product after seeing it advertised in a game, while 48 respondents had purchased a product after seeing it in a game they were either playing or watching someone else play. 30 respondents replied that they did not know or could not remember whether or not they had purchased anything after seeing it advertised in a game. The mode of the second item, “In-game advertising in full-price games is unacceptable”, was 5 and its mean 4. This score shows that a majority of respondents are opposed to in-game advertisements in games which they have paid full-price for, indicating that games may be more accepting of in-game advertising in free or very cheap games. The third item, “In-game advertising breaks my immersion”, also had a mode of 5 and mean of 4. Many of the respondents feel that in-game advertising lessens or even breaks their immersion in the game, immersion being the extent to which a player is drawn in into the game and its world, similarly to how one can be immersed in a book or film. Item four, “In-game ads that can change are less distracting than static ads” had a mode of 3 and mean of 3, indicating that many respondents were indifferent to the level of perceived distraction of dynamic in-game advertising in comparison with static in-game advertising. This item also had a standard deviation of 1.21, meaning that scores were spread fairly evenly around its mean. The graph below of the spread of this item confirms this.
The graph above also shows that almost as many respondents strongly disagreed with the statement that “In-game ads that change are less distracting than static ads”, and that overall players were either indifferent to dynamic in-game advertising or felt that dynamic in-game ads are no less distracting than static in-game advertising. Out of the 209 respondents, only 9 completely agreed with the presented statement. The next item, “In-game ads that can change to suit my preferences are preferable over static in-game ads” was intended to measure whether or not dynamic in-game advertising is preferred over static in-game advertising. The modal value of this item was 1, its mean 3 and its standard deviation 1.274. This indicates that much like in the previous item the responses are spread out around the mean rather than clustered around it. The graph below illustrates this.

Much like the graph of item 4, this graph confirms a fairly even spread of responses, but much like with item 4, respondents are either indifferent or feel that dynamic in-game advertising is not preferable over static in-game advertising. There is only a small difference in the amount of respondents who were indifferent and those who disagreed strongly, yet
only a significant minority strongly agreed with the statement. Item six, “I am comfortable with publishers and advertisers collecting personal data for the purpose of in-game advertising” had a mode of 1 and a mean of 2 and a standard deviation of 0.92, indicating a more concentrated spread than in items four and five. Out of the 209 respondents 98, or 46.8% strongly disagreed with the statement. A majority of respondents do not feel comfortable with dynamic advertising that makes use of personal data to determine what ads to display. Item seven, “I am comfortable with publishers and advertisers collecting personal data for the purpose of in-game advertising” had a mode of 5, a mean of 4 and a standard deviation of 1.035 which indicates a moderate spread of values around the mean. Out of the 209 respondents 98, or 46.8% strongly disagreed with the statement. A majority of respondents do not feel comfortable with dynamic advertising that makes use of personal data to determine what ads to display. Item eight, “Dynamic in-game advertising should be subtle and blended into the game’s aesthetic” had a mode as well as a mean of 5 and a standard deviation of 0.821. The responses to this item can be seen in the graph below.

![Graph](image)

**Figure 4: Spread of responses to item 8**

The responses lean heavily toward the end of agreement on the likert scale, meaning that most respondents feel that dynamic in-game advertising content should be subtle and well fitted to a game’s aesthetic. In fact, 90.9% of all respondents answered with either a 4 or 5 on the likert scale and approximately 70% gave the statement a 5 on the scale. There is a definite feeling among the respondents that dynamic in-game advertising should be subtle and not detract from the gameplay experience more than is absolutely necessary. Similarly, the final item, “Dynamic in-game advertising that shows the same content too often is distracting/annoying” also had a mode of 5 and a mean of 5, but unlike item eight item nine has a smaller standard deviation, indicating a somewhat closer clustering of values around its mean. The distribution of responses to item nine can be seen in the graph below.
Figure 5: Spread of responses to item 9

The spread of responses to item nine is similar to that of item eight, with the exception that the responses to item nine are even more top heavy, that is to say, leaning very heavily toward the “strongly agree” end of the Likert scale. 76.5% of respondents strongly agreed with the statement that too frequent repetition of dynamic in-game advertising is either distracting, annoying or both. The final two items both seem to be quite polarising, as there are only a handful of respondents who responded that they disagreed strongly with the statement, and none at all reported any slight disagreement.

Discussion

Based on the data gathered there appears to be a general negative attitude toward in-game advertisements among the respondents of the survey, as can be seen in item two and item three. These results are in line with the opinions reflected by Nelson et al (2004). However, item two does not necessarily indicate a negative attitude toward in-game advertising in general since it specifically refers to advertising in full price games but it does still indicate that in-game advertising is more welcome in free or cheap titles. Item three specifies that many respondents feel that in-game advertising of real products and brands lessens or breaks immersion. However, breaking immersion is not necessarily a significant drawback and it does not have much impact on the gameplay experience. Especially since, based on personal experience, there are many other factors that impact immersion to an even greater extent, such as poor writing, low graphical fidelity or poor and troublesome controls or user interface. Therefore, while players may feel that in-game advertising negatively impacts their gameplay experience, in-game advertising should still be considered an important marketing channel.

However, going back to the very first item, this survey seems to indicate that in-game marketing is not entirely effective. 118 out of the 209 respondents claimed to have never purchased a product after seeing it or its brand advertised, whereas only 48 responded that they had done so after seeing a product or brand advertised in a game they were either playing or watching someone else play. The latter is interesting since it implies that in-game advertising can also affect the indirect audience of games, which given the prominence of gameplay commentary on sites like YouTube or the streaming service Twitch. It should also be noted that according to these results in-game advertising is not ineffective either, after all,
approximately 23% of respondents did report that in-game advertising had affected them. It should also be considered that a large majority of responses were gathered from Reddit, and based on personal experience many Reddit users tend to be opposed to advertising in general and especially in and in relation to games. Because of this generalising the findings of this survey could be difficult, since it could be argued that the sample is not very representative of the target population, that being all gamers, be they casual or more invested.

Regarding dynamic in-game advertising content by itself the survey seems to indicate that players do not feel that dynamic in-game advertising is preferable over static in-game advertising, but respondents are fairly evenly split between either feeling that dynamic in-game advertising is not preferable over static in-game advertising and being indifferent, that being a three on the likert scale. Based on item four most players do not seem to perceive dynamic in-game advertising as any less distracting than static in-game advertising, so all in all it seems that in terms of attitude gamers are not necessarily any more or less in favour of in-game advertising when compared to static advertising. Moving directly on to the final two items the views of players seem to line up very well with Raatikainen’s model (2012) of optimal dynamic in-game advertising, in that a significant majority of respondents agreed with his model in that dynamic in-game advertising should be subtle and not repeated to frequently.

**Conclusion**

To answer the research question, based on the data collected, from the perspective of players that in-game advertising is dynamic and capable of changing is not very important, at least in terms of their attitude towards it. They did not perceive dynamic in-game advertising to be any less distracting, nor did they claim to prefer dynamic ad content over static ad content. However, apart from their clearly expressed dislike of in-game advertising in full-priced releases there was no clear dislike of dynamic in-game advertising in general, just no preference of it over static ads. From the point of view of publishers and advertisers therefore it can easily be stated that dynamic in-game advertising can be very important since it allows advertisers to target specific target audiences through in-game advertising without the drawback of more negative feedback and negative attitudes on the side of consumers. The conclusion drawn is that dynamic in-game advertising can be very important if carried out carefully, since then publishers and developers should be able offer more effective in-game advertising without any significant risk of backlash. But both publishers and advertisers should be careful when considering to implement dynamic in-game advertising, especially in full-priced games. Players are not necessarily comfortable with their information being used to help with ad targeting, therefore some transparency on the part of publishers could be advisable, and in line with Raatikainen (2012) publishers and advertisers should take care to make sure that ads are subtle enough to not be distracting while not displaying the same content too often, which could lead to increased distraction and annoyance. Regarding further research, the uneven distribution of gender and age of the sample meant that it was difficult to determine the influence of these factors, therefore further research into the effect of gender and age on attitude toward dynamic in-game advertising could shed further light on whether or these factors play a part. The role of gender would be interesting to investigate since women of nearly all ages are a fast growing segment within the game industry.
References


