

The Analysis of Brand Effect Appearing on 3D Computer Game

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Abstract

For analyzing consumers' brand attitudes, this research makes 3D sports game including world-wide brands. This study, which is interdisciplinary in nature, can be found in the fact that it is pioneering work which applies marketing concepts to the computer game. In marketing fields, brand exposure is widely accepted for activating the game industry as a beneficiary model. Therefore, this research is a kind of pilot study for adopting brands to game contents. In analyzing the respondents' brand attitudes toward game, four research questions are formulated based on the research design. The results showed the respondents answered positively to brand awareness and purchase while responding negatively to brand preference and repurchase. Especially in regards to brand awareness, 3D sports game can be a very effective marketing communication method for brand-new products because more than 43% of respondents support it. In summary, this research suggests effective ways of interaction with gamers by analyzing viewers' brand attitudes toward 3D games. The research results can be utilized in organizing brand exposure to all types of multimedia contents.

Keywords: Brand attitudes, 3D game, interdisciplinary study

1. Introduction

Research on brand exposure in games has steadily increased. Since interest has increased in the ways to effectively insert sponsor's brand names into game contents, the game industry has encouraged active research for brand exposure as a new beneficiary model. Therefore, brand exposure has been used as a means of advertising in marketing and it has been introduced into game contents.

Virtual reality and the real world are getting blurred. In other words, 3D virtual reality games are mimicking what happens in the real world. As concern grows over video games, brand exposure is becoming more important as a form of overcoming financial restrictions of the game industry.

Brand exposure has contributed to movies and TV programs as a tool for marketing communication. Recently, it can be found more and more frequently in games as well. In the past, brand exposure was rarely exposed in the background of games, however, in recent years active senses of brand exposure is evolving at a rapid pace, not only for additional entertainment, but also as a beneficiary model.

The analysis of brand exposure in games is an interdisciplinary study in nature. This research can be found in the fact that it is pioneering work which applies marketing concepts to the computer game.

In marketing fields, brand exposure is widely accepted for overcoming the weaknesses of conventional commercials which tend to be low attention-gathering. In other words, advertising clients have used brand exposure to promote their brand at a relatively low cost when they insert their products, brands and logos inside the program. Especially, the game industry is recognizing the effectiveness of brand exposure as a tool of promotion because brand exposure has a relatively price competitiveness compared to other commercials.

Therefore, the purpose of this study is to find out how brand exposure works in 3D sports game. For illuminating the effectiveness of brand exposure, game consumers' attitudes on brands are analyzed. As the brands in games are becoming popular in the game industry, a study of this type might shed light on further effects of brand exposure as well as on the development of game contents. To summarize, this research is a kind of pilot study for adopting marketing concepts to the game contents.

2. Theoretical Discussions

Brand exposure is one of the promotion methods for increasing consumers' brand awareness and preference. In detail, brand exposure can be defined as a tool of marketing communication which exposes relevant brands or products information in a way to harmonize with the game contents for building up consumers' brand image. In recent years, brand exposure is becoming an integral part of marketing communication. And this trend is transferring naturally to the game industry [1].

And also, brand exposure is the process that integrates an advertiser's brand into selected media, most often television and films. Brand integration is a special type of brand exposure in which the advertiser's brand is central to the plot line. Brand exposure can be audio, visual or print based [2].

Generally, there are three major types of brand exposure: paid, in which the brand exposure is arranged and there is financial compensation: barter, which is also arranged, but the brand serves as compensation: and gratis, in which the placement simply happens, often to strengthen a character profile, or add richness to the plot, audio or printed text [3].

A review of the main areas of research undertaken to date reveals that some studies have focused on particular aspects of brand exposure such as types of brand [4], the effects of exposure type and time on brand recognition [5], the effect of branded props on consumer behavior [6], the semantics employed by viewers [7], and others have examined brand exposure in terms of its ethical acceptability [8].

In relation to brand exposure in games, there has been little research thus far. Brand exposure in games began to appear as an acclaimed marketing tool intended for strengthening brand recognition as brand and product names were harmonically inserted in conventional TV media and movies. Especially, the growth of movie-related market and network or cable TV makes the potential of exposure through brand names very high. Brands exposed in movies has been acknowledged as being highly influential in drawing attention because most of the film viewers have deep interest in brands on the screen [9].

Recently, however, advertising-as-entertainment models are creating partnerships between advertisers and game contents providers. Online media such as sponsored web-sites, promotional contests and brand exposure demonstrate new ways of combining advertising and game contents.

As with the customizing of racing cars and virtual skate boarders, consumers are actively involved in branded images as they are in actual content. Brand exposure research from movie and TV offer some relevant theories and measures about the effectiveness of these techniques in games, but several differences among media contexts must be considered [10].

Advantages of brand exposure on games over films include its capacity to increase involvement due to the reception context (active versus passive), its micro-targeting ability and its longer shelf-life. In addition, the ability for marketers to place highly targeted brands in games easily and efficiently may also increase consumers' involvement. These differences in media and consumer involvement suggest that new research is needed to examine the use of brand props in games [11].

Technologically and aesthetically, games have changed a great deal since Spacewar, the world's first computer game played with a typewriter and punch cards in the early 1960s. In the last four decades games have changed formats (from arcades to television consoles to computers) and technology has advanced game-realism from black and white to color, from 2D to 3D computer graphics, and today moving rapidly into virtual reality environments [12-14].

The effectiveness of brand exposure has been evaluated in accordance with the response of its recall, recognition and attitudes. Considering that brand awareness is a primary goal for advertisers using brand exposure memory-based awareness measures such as recognition or recall are appropriate. However, past research has only examined short-term memory (directly after the media exposure or day-after recall), and therefore not much is known about the longevity of these brand contacts [15].

Nelson [16] analyzed computer gamers' brand attitude. According to the research, game players were readily able to recall about 25 to 30 percent of brands in the short-term and about 10 to 15 percent at a delay. Brands demonstrated recall superiority when they were a major part of game-play or when they were local or new brands, atypical of brands found in games, or relevant to the consumer. When asked about their attitudes toward brand exposure, game players were generally positive indicating that they did not consider the practice to be deceptive and that the brands can also be used to enhance game-realism. Open-ended comments revealed that players' attitudes, however, depended upon the game genre and how and where the brand appeared.

3. Experiments

3.1. Research Procedures

The purpose of this study is to find out how brand exposure works in 3D sports games. And this research is a kind of pilot study for adopting brands in computer games. For analyzing the effectiveness of brand exposure in computer games, this study has developed a 3D ping-pong game. Different brands were positioned on the ping-pong ball and bar to measure the advertising effectiveness.

Irrlicht engine and visual C++ were used for the games production. The game is composed of one offending ping-pong ball and two offending/defending bars. For the purpose of measuring the brand exposure effectiveness, a total of 4 questions were presented to 97 subjects. The subjects are composed of students majoring in multimedia because game familiarity is one of the important variables for the research reliability.

The survey questions were formulated strictly based on the research questions and were presented in PowerPoint format. The students were given enough time span between questions to ensure high reliability and validity of the research. Familiar brands of various products ranges were selected and randomly placed on the ping-pong ball and bars to measure the attention of the subjects.

3.2. Research Questions

For analyzing the respondents' brand attitudes toward game, four research questions are formulated based on the research design. They are as follows.

<RQ 1> Does this 3D computer game help awareness of the specific brand?

<RQ 2> Does this 3D computer game help the subject to have a preference toward the specific brand?

<RQ 3> Does this 3D computer game help to purchase the specific brand?

<RQ 4> Does this 3D computer game help to repurchase the specific brand?

3.3. Experiment Procedures

3.3.1. EXPERIMENT 1

The 3D computer ping-pong game is developed based on the third person view for <Experiment 1>. <Experiment 1> shows Nike bar attacks and defenses from the left to right and Sony bar attacks and defenses from the right to left using a Fila<Figure 1> and an Adidas<Figure 2> ball.

Four regular hexahedrons brands are displayed at the bottom left of the scene in order to focus the attention of gamers. The brands are Samsung, Nike, Adidas and Lotteria. These brands are keep changing randomly for equal measurement conditions.



Figure 1. Experiment 1-1



Figure 2. Experiment 1-2

3.3.2. Experiment 2

<Experiment 2> shows maya camera mode rotating the y axis to make different viewing perspectives that make the game more interesting.

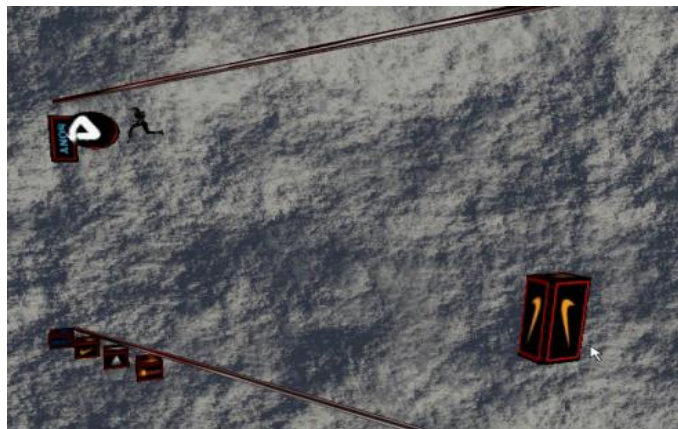


Figure 3. Experiment 2-1

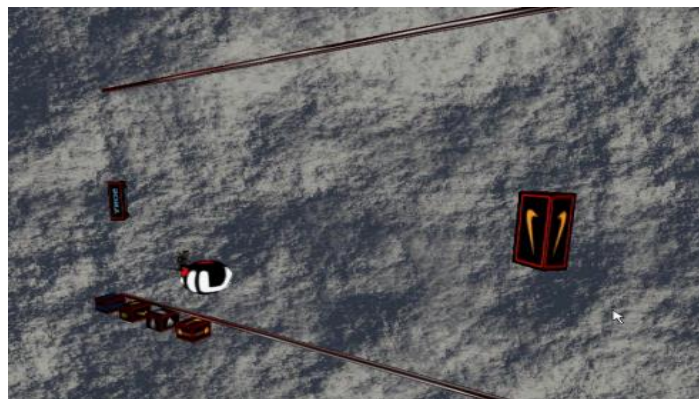


Figure 4. Experiment 2-2

3.3.3. Experiment 3

<Experiment 3> shows maya camera mode rotating of y axis and x axis as a Sony brand team for attacking and defending.

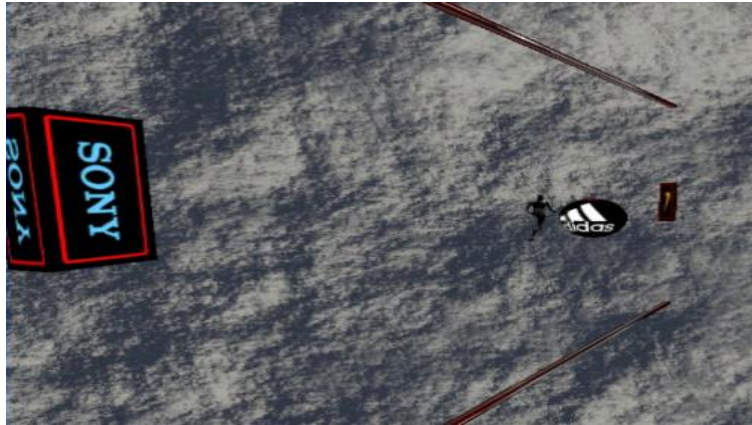


Figure 5. Experiment 3-1

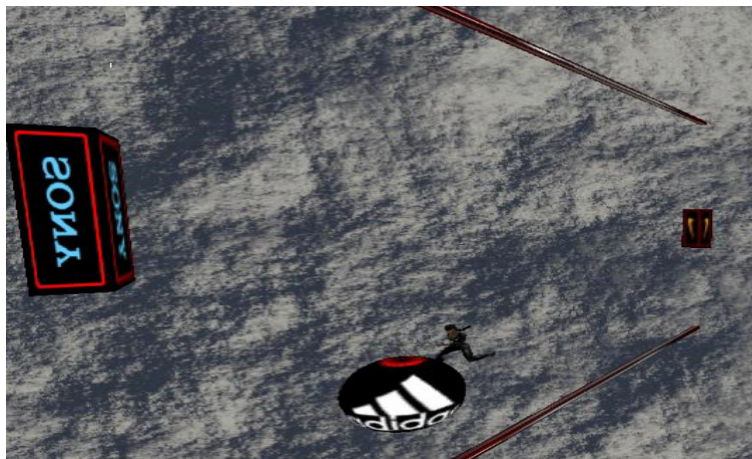


Figure 6. Experiment 3-2

4. Research Results

The results of the questionnaire analysis are as follows. Research results are classified based on the ball and bar.

Table1. Results of Questionnaire Analysis

Research Questions(RQ)	Research Results (% of the brand attitude on the ball/bar)	
1. Does this 3D computer game help awareness of the specific brand?	ball	(1) 5 (2) 21 (3) 31 (4) 34 (5) 9
	bar	(1) 6 (2) 19 (3) 33 (4) 34 (5) 8

2. Does this 3D computer game help the subject to have a preference toward the specific brand?	ball	(1) 9 (2) 32 (3) 53 (4) 4 (5) 2
	bar	(1) 15 (2) 35 (3) 41 (4) 9 (5) 0
3. Does this 3D computer game help to purchase the specific brand?	ball	(1) 5 (2) 29 (3) 26 (4) 34 (5) 6
	bar	(1) 7 (2) 34 (3) 39 (4) 19 (5) 1
4. Does this 3D computer game help to repurchase the specific brand?	ball	(1) 15 (2) 49 (3) 31 (4) 5 (5) 0
	bar	(1) 12 (2) 42 (3) 35 (4) 11 (5) 0

((1)=very negative, (2)=negative, (3)=normal, (4)=positive, (5)=very positive))

4.1. The Research Results of <RQ 1>

The results showed respondents' brand awareness for the ping-pong ball and bar are very similar. 43% of respondents answered that this 3D computer game helped awareness of the specific brand. It means more than 43% of respondents showed positive attitudes for brand exposure on the game while 26% of respondents answered negatively for their brand awareness on the ball.

4.2. The Research Results of <RQ 2>

The results showed respondents' brand preference for the ping-pong ball and bar are also very similar. On the contrary of the results of <RQ1>, <RQ2> showed that the 3D computer game does not influence respondents' brand preference. More than 41% of respondents answered negatively for their brand preference. Only 6% of respondents answered positively for their brand preference on the ball.

4.3. The Research Results of <RQ 3>

The results showed respondents' brand purchase for the ping-pong ball and bar are not very different. However, brands on the ball are found to be more influential than the bar's. In other words, 40% of the ball respondents are positive for purchase while only 20% of respondents are positive for purchase of the bar's. It means moving brand images can be a more effective way for brand purchase.

4.4. The Research Results of <RQ 4>

The results showed respondents' brand repurchase attitude for the ping-pong 3D game has very little effects. Only 5% of respondents answered positively for their brand repurchase while more than 64% of respondents answered negatively. It means the computer game is not influential in regards to the respondents' brand repurchase because it is based on the brand preference.

5. Conclusion

This research analyzed the effectiveness of brand exposure in 3D game. This study is a kind of interdisciplinary study between advertising and games. In other words, it applies brand strategies to game contents. This interdisciplinary approach aims at activating the game industry as a beneficiary model. Therefore, this research is able to contribute to the development of many brand-new computer games.

The research results showed that the possibilities of brand exposure can be a useful beneficiary model in the game industry. Respondents answered positively in brand awareness and purchase. It means brand in games is an effective way for recognizing and stimulating to buy game products.

Especially in brand awareness, 3D games can be a very effective marketing communication method because more than 43% of respondents answered positively. When the brands are focused on the gamer-aged target, the advertising effects can be more activated.

The results also showed that the respondents focused on the brand purchase in accordance with brand awareness, especially on the ball. High rates of brand purchase are based on the same brand awareness. And low rates of brand repurchase come from the same brand preference. The research results prove that there is a significant relationship among the variables.

In brand preference, 3D games have little influence to respondents because the game only shows the brand logos. To increase brand familiarity, brand identity has to transfer to the audience. In other words, brand personality is formulated by brand identity. Therefore, it is very difficult to make a brand image without brand personality. To overcome these difficulties, computer games have to provide brand identity with audiences by way of brand storytelling.

Also, respondents answered negatively in repurchase regardless of brand exposure position. As brands are not the main purpose of the game, it is very difficult to form brand repurchase in the consumers' mind. It can be a limitation of the brand exposure in game contents.

In summary, brand exposure in 3D computer game is a useful advertising method for increasing brand awareness and purchase but it is not helpful for brand preference and repurchase. The research results can be utilized in organizing the brand exposure of all kinds of multimedia contents.

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