The Effect of Product Placement in Computer Games on Brand Attitude and Recall

Deepa Sharma, Richard Mizerski, Alvin Lee, The University of Western Australia

Abstract

Media fragmentation and proliferation, in concert with declining television advertising efficacy, has engendered interest in developing more effective ways to reach consumers – particularly current non-users of a brand. This study explores the effect of active product placement in computer games on both brand attitude ($A_{\text{brand}}$) and recall. Findings suggest that exposure to a particular brand in a computer game can increase $A_{\text{brand}}$ among consumers whose pre-existing attitude toward the brand is fairly low. We conclude that product placement within computer games is an effective means of fostering high spontaneous brand recall and influencing consumers less positively pre-disposed towards a brand (analogous to non-users). The findings have promising managerial implications for firms looking to grow their customer base through acquisition and conversion.

Keywords: product placement, computer/video games, product recall

Introduction

American software sales in the computer and video game category reached $7.4$ billion in 2006, an increase of 6% (Entertainment Software Association, ESA, 2007a). In Australia alone, the predicted value of in-game advertisements has been placed at $SU1.25$ billion (Manktelow, 2005; Schneider and Cornwell, 2005). Product placement has evolved from the use of products as props supplied freely by organizations to a multi-billion dollar industry driven by commercial companies seeking new avenues to promote their brands (Delorme and Reid, 1999; Nelson et al. 2004; Shea, 2004). Coca-Cola recently announced intentions to move advertising resources away from television advertising towards video games and DVDs (Grover et al., 2004). Marketers have the opportunity to create accurate simulations of their products in highly realistic game scenarios, such as the driving simulator Gran Turismo 4 (Polyphony Digital, 2005) that can be equated with a real world ‘test-drive’. Automotive marketers have shown enthusiasm for allowing members of the community to interact with their products in the medium of computer games (Hill, 2005a). The game Porsche Challenge (Sony Computer Entertainment, 1997) coincided with the commercial release of the Porsche Boxster, providing gamers with the opportunity to drive digital representations of the car.

Computer games are emerging as a new medium for advertising, yet there is relatively little empirical independent research examining the outcomes of marketing communications using this medium. A study of the effects of product placement in games on brand recall, found that 95% of participants spontaneously recalled the brand of car they drove during the game (Nelson, 2002), although recall declined to 0% after a five-month post-play period. Participant recall of the brands featured in the game was approximately 25-30% immediately after game play, yet recall declined by more than half when participants were re-tested five months post-play (10-15% recall) – suggesting brand placement recall may not be long-term.
Research on consumer attitudes to in-game product placement indicates participants were generally positive about the practice and did not perceive that any disruption in the experience of the game used in the study (Nelson, 2002). Some participants reported product placements enhance the realism of the game, suggesting the medium may add value to the gaming experience. Research examining consumer attitudes to product placement in other media support the contention that consumers are more positively disposed towards brand placements relative to more traditional forms of advertising (Nebenzahl and Secunda, 1993). Nebenzahl and Secunda (1993) found that product placement was rated favorably by 70% of moviegoers, significantly higher than ratings for pre-movie advertisements. A gap in the current literature is the issue of whether brand placements in computer/video games can shift pre-existing consumer attitudes towards a specific brand. Research findings suggest a strong association between consumer attitude towards a brand ($A_{\text{brand}}$) and purchase intentions (Anand and Sternthal, 1990; LeClerc and Little, 1997; Spears and Singh, 2004).

**The Weak Theory of Advertising and Product Placement**

The ‘weak theory of advertising’ argues that the primary role of television advertising (TVA) is brand reinforcement by reminding existing customers to buy the brand (Barnard and Ehrenberg, 1997; Jones, 1996). Ehrenberg (1974) argued that consumers pay attention to advertising of brands for which they have a pre-existing favourable attitude. Repetitive advertising could be construed as a defensive strategy useful in reinforcing brand loyalty (see Ewing and Jones, 2000). Rice and Bennett (1998) found users of ‘Brand A’ had higher awareness and more positive attitudes towards advertisements for brand A than non-users of the brand. Consumers loyal to Brand B were least likely to respond positively towards advertisements for Brand A. The exception was consumers who liked Brand A but who had not yet progressed to becoming brand users. These findings reinforce the so-called ‘weak theory of advertising’ in that users are far more likely to respond favorably to advertisements for a particular brand than non-users. 1992 Nobel laureate in economics, Gary Becker, reached the same conclusion, namely that consumers watch advertisements about automobiles (for example) even after they have just purchased an automobile, in order to re-enjoy the experience of their own purchase (Becker and Murphy 1993). ‘Weak theory’ holds that advertising is typically not powerful enough to convert non-users or affiliates toward having favorable brand attitude ($A_{\text{brand}}$) and purchase intentions. Yet it remains to be seen whether this same principle holds true for video and computer games. The aim of the current study is therefore to examine whether product placements in computer games have a ‘weak’ or ‘strong’ effect on $A_{\text{brand}}$ and brand recall. In line with the ‘weak theory of advertising’ it is hypothesized that participants who are positively pre-disposed towards the brand will become more favorably disposed following exposure to the in-game product placement ($H_{1a}$). Additionally, it was hypothesized that participants who are less positively disposed to the brand will not display a change in their brand attitude following exposure to the product placement ($H_{1b}$). Based on the ‘weak theory of advertising’ it is further expected that participants with positive attitudes towards a particular brand would be more likely to recall this brand than those who are less predisposed towards the same brand Therefore, it was hypothesized that participants randomly assigned to the experimental (Holden) group who have a pre-existing high attitude towards this brand will exhibit higher levels of recall than participants with a low pre-existing attitude towards Holden ($H_{2}$).
Method

A pre-post test experimental design was used to examine spontaneous and prompted recall as well as Abrand levels of 104 Australian university students exposed to either a Holden Monaro or an Audi A4 car embedded in a popular computer game, Gran Turismo 4 (Polyphony Digital, 2005).

Study Measures

The Spears and Singh (2004) product attitude scale comprises 5 items scored on 6-point Likert scales. Spontaneous recall was a single item: “What products or brands do you remember seeing in the game?” Participants were asked to list all car brands they could remember seeing while playing the game. Prompted recall was measured as: “What brands do you remember seeing in the game? Please tick only the boxes that correspond to brands you clearly remember seeing”. This question was followed by a list of the 21 different brands that appeared in the game as products on virtual billboards or cars. Sociodemographic information (age, gender, household income, occupation) was also collected.

Procedure

Recruitment was undertaken using flyers distributed around a University campus and in exchange for their participation participants received a cinema voucher. Participation was voluntary and participants were informed that they could cease participation at any point. Each participant participated on an individual basis. After random allocation, participants completed a pre-game questionnaire that included a measure of Holden attitudes developed from Spears and Singh’s (2004) product attitude scale. Foils pertaining to three other car brands, Mitsubishi, Toyota, and Ford, were also included mask the purpose of the experiment.

Following random assignment to either the experimental condition (Holden Monaro) or control condition (Audi A4), participants received basic instructions about using a Playstation 2 controller and maneuvering their game car. Participants in the Holden test condition were requested to select the ‘Holden Monaro’ car option and the control condition participants (Control_Audi) were asked to select the ‘Audi A4’ option. All participants were asked to select the color of their game car from a palette of six colors and then complete 6 circuits of the game raceway. All participants completed three laps of the ‘Super Speedway’ followed by three laps on the ‘Clubman Route Stage 5’ track, followed by the post-game questionnaire.

Participants randomly allocated to the Holden experimental group were further sub-classified using a median split of pre-game attitudes towards Holden. Participants with scores ranging from 5 through 17 were deemed to be less positively predisposed to the Holden brand and were assigned to the low attitude sub-group. Conversely, participants scoring in the range of 18 through 30 were classified as being more positively predisposed to Holden and were assigned to the high attitude sub-group (HoldenHigh). A total of 5 outliers were removed from the dataset leaving a reduced total dataset of 99 cases. Eighteen participants were classified into the HoldenLow sub-group, 43 into the HoldenHigh sub-group, and 38 participants were randomly assigned to the control condition Control_Audi. Consenting participants completed a pre-game questionnaire designed to assess their attitude toward specific car brands and were classified as either low (HoldenLow) or high (HoldenHigh) pre-test attitudes towards Holden cars.
Results

One-way analysis of variance (ANOVA) analyses were used to test for differences across the three participant groups, Holden\textsubscript{Low}, Holden\textsubscript{High}, Control\textsubscript{Audi}. Participant groups were similar with respect to age and income classification. Chi-square analysis, used to explore gender representation across the three participant groups, indicated that females were over represented in the Holden\textsubscript{Low} participant group.

Results of independent sample t-tests indicated that the mean pre-test \textit{A} brand scores with respect to Holden, Toyota, Ford, Mitsubishi cars did not vary significantly with participant group. Results of the repeated measures t-tests for each participant group indicate that overall, the mean Holden \textit{A} brand scores of participants in the experimental Holden Monaro group increased after exposure to the simulated computer game. When examined within the sub-classification groups based on pre-existing Holden attitudes, only the mean attitude scores of Holden\textsubscript{Low} participants (n=18) increased significantly after playing the computer game (15.78 to 17.56, \( p = .015 \)). Participants sub-classified as Holden\textsubscript{High} (n=43) showed no significant change between pre- and post-play. Somewhat unexpectedly, the mean Toyota \textit{A} brand scores of the Holden\textsubscript{High} participants declined significantly after playing the game (21.92 to 21.19, \( p = .008 \)). Control group participants randomly assigned an Audi car showed no significant differences in \textit{A} brand for either the Holden or foil brands (Ford, Mitsubishi, Toyota).

Chi-square analyses examined group differences for unprompted and prompted recall of Holden Monaro cars. Participants sub-classified as the Holden\textsubscript{High} group (n=37, 83.7\%) were significantly more likely to display unaided recall of the embedded brand (Holden Monaro) than participants sub-classified as Holden\textsubscript{Low} (n=13, 72.2\%) and participants assigned to Control\textsubscript{Audi} group (n=3, 7.9\%). Both Holden\textsubscript{Low} (n=16, 88.9\%) and Holden\textsubscript{High} (n=41, 95.3\%) group participants were significantly more likely to recall the embedded brand (Holden Monaro) when prompted than control group participants (n=6, 9.5\%).

Discussion

The findings of the current research do not support \( H_1a \) that participants with a pre-existing positive attitude (Holden\textsubscript{High}) towards the embedded product (Holden Monaro) did not show increases in their brand attitudes after exposure to this brand during their computer gameplay. These findings are not consistent with the ‘weak theory of advertising’ and may indicate the theory does not currently transfer to emerging advertising mediums such as product placement in computer games. Since Holden\textsubscript{Low} participants (those who were less positively predisposed to the embedded brand) displayed significant increases in their \textit{A} brand, no support was found for \( H_1b \). The findings suggest active brand placements, where the branded product forms a natural part of the game-play, may provide marketers with a means of converting player attitudes towards the embedded brand product. It remains to be seen whether the current findings will be temporally stable or an artifact of the relative newness of the medium. The ‘weak theory of advertising’ suggests that television advertising provides companies with a means of ‘preaching to the already converted’ and is useful to remind current brand users why they like the brand. But the converse also holds: nonusers of the brand are less likely to be effected by television advertising. A key issue for product placement in computer games is whether the ability to convert consumer attitudes is a transient phenomenon that will dissipate
once the marketplace is saturated with interactive product placements or whether the embedded and seamless nature of the brand placements will protect against media ‘wear out’.

Support was found for H2. Experimental group participants classified with pre-existing high positive attitudes towards the embedded brand product displayed significantly higher levels of both spontaneous and prompted recall than experimental group participants classified with low pre-existing attitudes towards Holden cars (HoldenLow). These findings align with Nelson (2002), Nelson et al. (2004), and Schneider and Cornwell (2005), and indicate that interacting with a product while playing a computer game increases an individual’s ability to recall that item when prompted. The inclusion of the control condition served to test whether merely playing a simulated computer car game could influence Abrand scores. The finding of no significant change to Holden Abrand among participants in the control condition (ControlAudi) suggests that the change in Holden Abrand scores among the HoldenLow and HoldenHigh conditions are the result of the intervention and are not spurious.

The current findings suggest computer games are an excellent medium to develop bifocal strategies for acquiring new, and retaining existing, consumers. Product placement in computer/video games likely to be purchased by the brand’s target demographic would enable brand interaction and experience in a virtual environment. The current study was not without limitations. Sample sizes were modest and accrual was restricted to tertiary level students. Caution is required in extrapolating the findings to larger, more diverse populations. Future research would benefit from including a more diverse sample of participants, particularly those with higher levels of discretionary income, enabling an examination of the power of computer game product placements to influence purchase intention (PI). It is important to note that PI is a distinct construct from Abrand and is thought to be a more powerful predictor of consumer behavior (Spears and Singh, 2004).

The nascent nature of computer games as a product placement medium calls for further research into ways to maximize communication channels between organizations wishing to embed a product and computer game designers - particularly, the right balance of creative control that embraces consumer ‘wants’ and large advertising agencies or organizations ‘wants’. Empirical research is needed to examine brand recall and changes in Abrand with respect to PI, as it could be argued that non-users of Holden brand cars would be unlikely to purchase or play a computer game that featured only this brand. This would reduce the potential for changes in Abrand to occur. Future research could ascertain the efficacy of computer games that feature numerous other brands yet still ensures players are ‘forced’ to use a specific brand at designated stages. For example, a car racing simulation may include different scenarios to further the progress of the game, one of which using only a particular brand of car. Another exposure method would be to make sure the brand is offered as the superior choice of one of two options for the player, ensuring that players used the brand and creating an illusion of choice. The planned standardized metric being devised by Activision (Nasdaq: ATVI, 2004) and Nielsen Entertainment will provide future research with a more definitive mechanism to evaluate the impact of product placements have on player behaviour.

Computer/video games are emerging as a potentially powerful medium for marketers to utilize as part of their marketing communications activities (see Chambers, 2005; ESA, 2006, ESA, 2007b; Informa Telecoms and Media Group, 2006; LoPiccolo, 2004; Molesworth, 2006; Nelson, Yaros, and Keum, 2006). The findings of the current study suggest that this medium shows promise in assisting marketers in changing attitudes towards brand placements that form an active part of the gamer’s play experience. The practice of product placement
within entertainment programs may be used to specifically target elusive consumer segments with brand communications seamlessly woven into real-life simulations designed to remind consumers that a brand exists as well as providing a means of interaction. Such advances will broaden the range of product categories that can be used interactively during game play and therefore enhance the capacity for marketers to foster positive brand attitude dispositions among players with a pre-existing low attitude towards the embedded brand product.
References


