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Web Advertising: Alternative Scenarios to the Banner Years

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Abstract

Electronic commerce promises to further fuse the links between marketing and information systems, making the consumer a key factor in information system design. An increasingly popular medium for advertising is the World Wide Web. The predominant method for advertising on the Web is ad banners, small rectangular graphic images that invite the user to click the can have a material effect on brand attitudes, recall, and recognition (Briggs and Hollis 1997). This paper examines the effectiveness of alternative formats to the ad banner. These alternate formats made use of the HTML images for further details. Though user response (i.e., clickthroughs) is notoriously low, these ads"background" option to produce a wallpaper-like image. We tested both familiar and unfamiliar (fictitious) brands in both ad banner and background formats. Results show that both aided (recognition) and unaided recall were more influenced by previous ad familiarity than by ad format. Also, single exposures resulted in a significantly positive change in product attitude as measured against an unexposed group.

Online Advertisement

The Web is an ideal vehicle for disseminating highly tailored, relevant product and/or service information. Web sites can be used for a wide variety of functions, projecting a favorable corporate image, providing product information to customers, and generating leads for salespeople (Berthon, Pitt, and Watson 1996). Recently, companies have extended their reach on the Web from not only their own Web sites, but from other Web sites through the use of online advertising, but assessing the effectiveness of these advertisements has proven elusive.

The number of "hits" (i.e., the number of exposures or impressions) is often used as a measure of effectiveness. These figures tend to overestimate the actual effectiveness, since the customer may not retain or even have noted the message content. On the other hand, behavioral measures such as clickthrough (i.e, the number of times the user actually clicks on the image to get more information), tend to underestimate the impact of the advertisement since response to the ad may occur well after exposure. More appropriate measures may be found in the form of cognitive measures, namely recall and recognition.

Previous research supports the notion that ad banners can be effective even without clickthrough. These messages may go by seemingly unnoticed but still have an impact on viewer attitudes (Janiszewski 1990). Briggs and Hollis (1997) point out that viewers do remember and are able to recall ad banners after exposure. The current use of banner ads has become a stable means of presenting commercial advertisements. However, other formats may also prove equally effective in terms of recognition and recall since ad banners are sometimes considered intrusive, with viewers often *diverting* their attention away from them.

Format Effects

Banner ads have become the de-facto format for Web advertising. These images are prominently displayed, usually one of the first objects to appear as a Web page is loaded. One disadvantage of this format is that repositioning of the page can place this image outside of the viewing area. This "scroll-off" effect places an upper limit on viewer attention time. A solution to scroll-off and its effects on exposure time is increasing the size of the image relative to the page. Increasing the size of images in the *foreground* carries with it the penalty of displacing non-adverting text/pictures and slower loading times.

An alternative solution is to place the image (or a modified version) in the *background*. Each Web page may contain an image that appears superimposed with the page text. In this case, the ad information is visible for as long as the viewer remains on the page. In general, a background image will have a longer exposure time than a foreground image because of the latter's susceptibility to scroll-off effect. Longer exposure time increases the opportunity to attend to stimuli and as a result the opportunity to form a mental representation of the stimuli (Janiszewski 1993; Seamon, Marsh, and Brody 1984).

Background images are also subject to a secondary effect. Because images in the background are also repeated to fill the full area of the page, a repetition effect is introduced. Like exposure time, repetition has also been shown to have a favorable affect on recall and recognition. Though foreground images ordinarily have a memory advantage (Aaker and Myers 1987), exposure and repetition effect combined should serve to equalize foreground images' recall superiority.

H1a: Recall of background exposures on the Web will be richer than that of foreground images.
H1b: Recognition of background exposures on the Web will be richer than that of foreground images.

Advertisement Attitudes

Images are often the largest component of a Web page in terms of actual memory and, therefore, are a significant determinant of a page's total download time. Speed of data access is frequently mentioned as a problem of the Web (Lightner, Bose, and Salvendy 1996). Background images are not necessarily smaller than foreground images in terms of memory, but because they are less obtrusive than foreground images, consumers should be less likely to develop negative attitudes toward them.

H2a: Attitudes toward background images will be more positive than attitudes for foreground images.

Finally, advertisements serve as reinforcements to existing brand attitudes. Previous brand attitudes may be based on actual product usage or on the consumer's familiarity due to advertising exposures. Briggs and Hollis (1997) note that relatively unfamiliar brands experience greater change in brand recognition and attitudes than more familiar brands.

H2b: Changes in attitudes toward a product will be greater for lower familiarity products than for higher familiarity products.

Method

Participants. Participants for this study were 57 undergraduates enrolled in an introductory business class at a large state university. These participants completed the experiment in partial completion of class requirements. The average age was 20; 63% were male. All participants had some knowledge of computers as a result of experience in both prerequisites and the current class.

Materials. To test the difference in responses between the two formats, several Web page versions were created. These pages varied in either format (foreground or background) and product advertising familiarity (high or low). In addition, each page contained a script that recorded the amount of time that the page was viewed. Foreground images were based on actual banner ads in both size and format while background images were taken from photos of products. Each of these products contained visible association with its manufacturer (either a name, a logo, or both). A relatively high familiarity product (fast food) was used for this experiment. Advertising familiarity manipulated by using a fictitious brand (low familiarity) and an actual brand (high familiarity).

Procedures. Participants worked alone to answer questions related to four business vignettes. Participants were told that the purpose of this experiment was to evaluate reading comprehension on the Web to avoid focusing undue attention on the advertisements. The sequence of the four effect types was counterbalanced to control for ordering effects. After reading each of the four vignettes, the participants answered two questions on the content of the story. At the end of the experiment, participants answered questions related to the advertisements.

Measures. Aided brand recall was measured by asking participants to list as many brand names as they could remember from the vignettes. Brand recognition was measured by presenting a list of 8 brands, 4 brands in the form of advertisements, 2 brands present in the vignettes' text; and 2 not shown but from the same product category. Participants were asked to indicate whether or not each brand was present in any one of the vignettes. Attitudes toward the ads were measured via 7-point Likert scales ranging from strongly disagree (1) to strongly agree (7). For example, "I enjoyed the advertisements" and "These advertisements were annoying" (reverse scaled). Change in product attitude was assessed by comparing product attitude measures with those of a similar but unexposed group. Additional measures relating to the attitudinal differences between background and foreground were assessed via semantic differential scales.

Results and Discussion

The data were analyzed using several paired t-tests. Table 1 presents the means and standard deviations. Recall and recognition reflect summaries of dichotomous measures (0=did not recall/recognize 1=recognized/recalled) while attitude was measured using 7 point Lickert scale averages (1=most favorable, 7 least favorable).

Partial support was found for the first hypothesis which asserts that the background format will exhibit higher recall than the traditional ad banner format. Recall for background images were significantly higher than that of ad banners for the high familiarity group (t=2.02, p=.049) but not for the low recognition group (t=0.96, p=.341). The recognition hypothesis failed to receive support, showing no difference between products in either the high recognition group (t=.941, p=.351) or the low recognition group (t=0.70, p=.485).

No differences in attitudes toward the two ad formats were found (t=0.14 p=.516), suggesting that in some cases the formats may be used interchangeably. The final hypothesis states that changes in attitudes toward a product will be greater for lower familiarity products than higher familiarity products. Changes in brand attitude were higher for the low familiarity products than for the high familiarity products, though falling short of significance for both the ad banner (F =2.73, p=.068) and the background format (F=2.18, p=.116).

Table 1. Result Means (Std Deviation)

	Foreground/ Real	Background/ Real	Foreground/ Fictitious	Background/ Fictitious
Recognition	0.709 (0.458)	0.873 (0.336)	0.444 (0.502)	0.545 (0.503)
Recall	0.491 (0.504)	0.564 (0.501)	0.091 (0.290)	0.127 (0.336)
Product Attitude (Exposed)	5.117 (1.491)	4.963 (1.490)	3.469 (1.238)	3.691 (1.206)
Product Attitude (Unexposed)	5.159 (1.228)	4.870 (1.403)	2.937 (1.226)	4.058 (1.639)

These mixed results offer a prescription for use of alternative Web ad formats. First, failure to support the recall and recognition hypotheses in the low brand awareness group and significance in the opposite direction in the high recognition group suggests that the more conspicuous ad banner format may be more appropriate when competing brands are mainly high awareness products/services. The results further suggest that ad banner and background format may be used interchangeably with little affect on either recall or recognition when previous brand awareness is low, for example new product launches. In these cases, background/wallpaper exposures can build both brand awareness and have a material affect on product attitudes.

Limitations and Future Research

There are a number of trade-offs or limitations to this study which suggest areas for future research. First, vignettes only approximate actual ad exposure on the Web. Most advertising occurs in conjunction with keyword searches using a search engine. In this case the viewer initiated the search for information related to the product and therefore may devote higher levels of attention to related ads. Second, such ad variations as motion/animation, text only banners, and image size should also be considered. Finally, interactions between ads and surrounding information as well as with other ads (e.g., one or more background images followed/proceeded by one or more foreground images or on the same page) deserve future attention. Dual coding theory (Paivio 1986) asserts that information presented in both images and words my be remembered longer since forgetting requires that two rather than one memory trace be lost. This has implicating for other Web-based applications such as distance learning and DSS/EIS/GSS design.

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