Usability News

February 2006, *Vol. 8 Issue 1*

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Usability News is a free web newsletter that is produced by the Software Usability Research Laboratory (SURL) at Wichita State University. The SURL team specializes in software/website user interface design, usability testing, and research in human-computer interaction.
Barbara S. Chaparro, Editor

Does the Intrusiveness of an Online Advertisement Influence User Recall and Recognition?

By Sav Shrestha

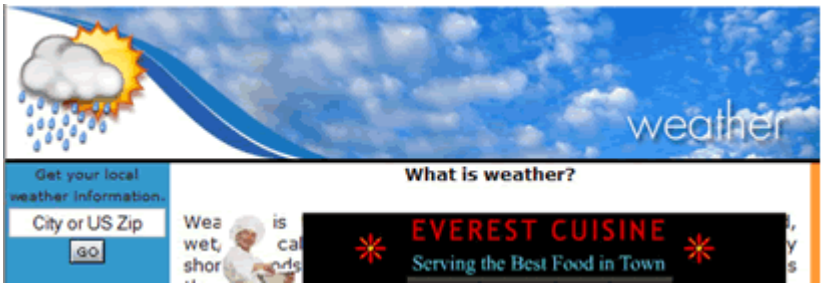
Summary: This study investigated the effect of the type (banner ad, pop-up ad and floating ad) and state (animated and non-animated) of online advertisements on recall and recognition of the advertisements. It was hypothesized that floating ads, pop-up ads, and animated ads would be easier to recall due to their intrusive nature. Results showed that participants in the pop-up ad and floating ad condition had better recall of the presence of the ad as well as better recognition. Animation did not significantly influence any of these measures.

INTRODUCTION

With the availability and familiarity of the Internet increasing steadily, e-commerce has become very popular over the past decade. Online advertising has been a key player in the success of ecommerce. Pricewaterhousecoopers (PWC) and Interactive Advertising Bureau (IAB) (2005) report that in the United States alone, online advertising revenues totaled just about $5.8 billion for the first two quarters of 2005, outgrowing the revenue collected in 2004 by 25.8 percent.

Berthon, Pitt and Watson (1996) describe advertising on the World Wide Web to be unique in that the consumer finds the marketer, unlike in most other media. McDonald (1997) points out that advertising is important for the economic health of the Web simply because of the lack of any other revenue generation sources. Interestingly, he also claims that online advertisements are not intrusive because unless the user is interested, the advertisements do not get clicked. This, however, is not true in the present context with the advent of animation and rich-media content in online advertisements.

There are several types of online advertisements. Floating ads (Figure 1) are seen to be the most intrusive in nature because, apart from being information dense, they obstruct the content of the webpage. Pop-up ads (Figure 2) also obstruct the content of the webpage but they are easier to get rid of by simply closing the pop-up window. Banner ads (Figure 3) can be considered the least intrusive in nature. Even though animation can make banner ads information dense, they do not obstruct the content of the webpage.



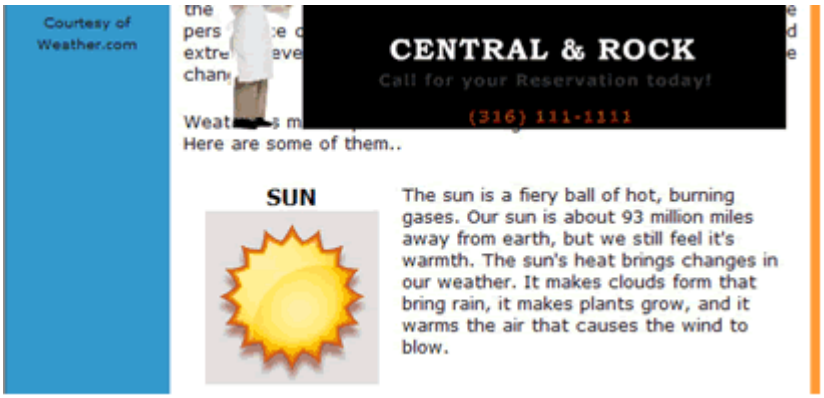


Figure 1. Floating Ad

Figure 2. Pop-up Ad

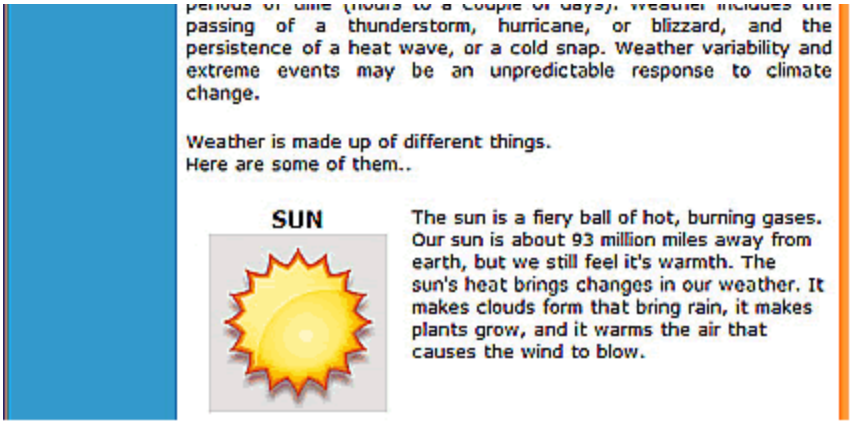


Figure 3. Banner Ad
***The weather images were used from Stardock's ObjectDock.**
http://www.stardock.com/products/objectdock/

Briggs and Hollis (1997), calculated the 'clickthrough' rate for measuring ad effectiveness. This rate is a simple ratio of the number of times an ad is clicked and the total number of times the ad appears. For example, if an ad on a site is clicked by 3 out of its 100 visitors, the clickthrough rate would be 3% (Techtarget, 2005). Nielsen (1997) argues that the clickthrough rates are so low that only 0.01% of the websites make economic gain from advertisement and that most of the time website users don't click on the ads. Briggs and Hollis (1997) also do not consider clickthrough rate to be the sole predictor of possible "brand building" and they think that the solo use of clickthrough rate undervalues the Internet as an advertising medium.

One way to draw attention to an advertisement is through the use of animation. Bayles (2002) investigated whether animation increases recall and recognition of novel banner ads by increasing user awareness. She found that animation did not play a role in augmenting awareness of banner ads. She also found that even when the participants recalled and recognized the presence of animation on the banner ads, they did not associate it to the ads.

The current study investigated the effectiveness of banner ads, pop-up ads and floating ads in terms of ad recall and recognition. Ad animation state was also manipulated to see its impact on the recall and recognition of the ads. It was hypothesized that recall and recognition of floating ads and pop-up ads would be higher than that of banner ads due to their intrusive nature.

Design

The type of ad (a banner ad, a pop-up ad, and a floating ad) and the state of the advertisement (animated and non-animated) were the two independent variables used in the study. Four dependent variables were measured for each group: (1) recall of the advertisement, (2) accuracy in recalling the state of the advertisement, (3) accuracy in recalling the location of the advertisement on the page, and (4) accuracy of recognition of the advertisement viewed.

METHOD

Participants

Sixty Wichita State University students were recruited for their voluntary participation in the study. There were 13 male (21.7%) and 47 female (78.3%) participants. Their ages ranged from 18 to 55.

Apparatus and Materials

The study used a Pentium 4 powered computer displaying at resolution of 1024 by 768 pixels on a 17" flat screen monitor. Microsoft's Internet Explorer version 6.0 with Macromedia Flash plug-in version 7 was used. Six forms of identical-sized advertisements (static banner ad, animated banner ad, static pop-up ad, animated pop-up ad, static floating ad, and animated floating ad) were placed

approximately one-fourth of the way from the top of the left-aligned pages. The structure and layout of all six pages type were identical in layout and content and differed only in the type and state of the advertisement. The advertisement was for a fictitious restaurant.

Procedure

A questionnaire was used to gather background information prior to the participation in the study. The participants were randomly assigned to one of six conditions (static banner ad, animated banner ad, static pop-up ad, animated pop-up ad, static floating ad, and animated floating ad) and were shown a web page that contained a weather glossary and the assigned advertisement for the restaurant. They were asked to complete six information search tasks on that page and record their answers on paper. This was done to allow for adequate exposure to the ad. Participants were lead to believe that the purpose of the study was to evaluate the usability of the webpage only. They were not told that they would have to recall any portion of the web page following the search tasks.

After the completion of the search tasks, the participants were asked to recall the type of the advertisement, animation state of the advertisement, and its content. They were then asked to identify the advertisements that they were presented from a page with five other distracter advertisements. Finally, they were asked to complete a satisfaction questionnaire regarding the web page and the advertisement they just viewed.

RESULTS

Recall

Results show that 71.6% (43 participants) were able to recall an advertisement on the webpage. About 20% (9 participants) of those who remembered seeing an ad correctly recalled what the content of the advertisement. Forty-five percent (9 participants) in the banner ad condition, 85% (17 participants) in the pop-up and floating ad conditions were able to recall seeing an advertisement. Two-thirds (20) of the participants who saw a static ad remembered seeing an ad, and 76.6% (23 participants) who saw an animated ad remembered seeing an ad. Chi-Square analysis revealed a significant relationship between recall and the type of ad viewed. [$X2$ (2, $N=60$) = 10.51; $p < .05$] However, animation had no effect in the recall of the ads [$X2$ (1, $N=60$) = 0.74; $p > .05$].

Animation Recall

About 53% of the 43 participants who recalled seeing an ad correctly recalled the animation state of the advertisement they saw. Of them, 11 participants who saw a static ad remembered the ad as static and 12 participants who saw an animated ad remembered the ad as animated. Chi-Square analysis revealed that there was no significant relationship between the animation state of the ad viewed and recall of the animation state of the ad. [$X2$ (1, $N=43$) = 0.03; $p > .05$] Also, the type of the ad did not have a significant relationship with the recall of the animation state of the ad. [$X2$ (2, $N=43$) = 4.59; $p > .05$].

Location Recall

About 74% (32 participants) of those who recalled seeing an ad correctly recalled the correct location of the advertisement. All but one person in the floating ad condition correctly recalled the location of the ad; 6 out of 9 participants who recalled seeing a banner ad remembered its location and 10 out of 17 participants who saw a pop-up ad recalled the location of the pop-up. Location recall was equal both for the animated and the static conditions.

Recognition

Seventy-three percent (44 participants) correctly recognized the ad from other distracters. Of those who saw the static ad, 70% (21 participants) picked out the correct ad in the recognition task, and 76.6% (23 participants) picked out the correct ad when the ad they saw was animated. Chi-Square results indicated no significant relationship between the recognition of the ad and the animation state of the ad viewed. [$X2$ (1, $N=60$) = 0.34; $p > .05$]. However, the type of the ad was significantly related to the recognition of the ad [$X2$ (2, $N=60$) = 12.44; $p < .05$].

Satisfaction

Animation had no impact on the recall or the recognition of the ad, however, when the participants were asked if the ad they saw bothered them, data showed that the participants who saw the animated ad reported being bothered more than those who saw the static ad [X2 (1, N=60) = 5.08; p < .05]. In addition, only 1 out of the 20 participants in the banner ad condition agreed that the ad bothered them whereas 10 participants in the float ad condition and 7 participants in the pop-up ad condition said they were bothered by the ad.

Table 1. Participant performance across the animation state of the ad.

		STATIC	ANIMATED	TOTAL
Saw an Ad?	YES	20	23	43
	NO	10	7	17
Correct recall of animation?	YES	11	12	23
	NO	9	11	20
Correct recall of location?	YES	16	16	32
	NO	4	7	11
Correct recognition of ad?	YES	21	23	44
	NO	9	7	16
Was the ad on the page bothering?	YES	5	13	18
	NO	25	17	42

Table 2. Participant performance across the type of the ad.

		BANNER	POP-UP	FLOAT	TOTAL
Saw an Ad?	YES	9	17	17	43
	NO	11	3	3	17
Correct recall of animation?	YES	7	10	6	23
	NO	2	7	11	20
Correct recall of location?	YES	6	10	16	32
	NO	3	7	1	11
Correct recognition of ad?	YES	9	18	17	44
	NO	11	2	3	16
Was the ad on the page bothering?	YES	1	7	10	18
	NO	19	13	10	42

DISCUSSION

Results showed that the type of the ad displayed significantly influenced its recall and recognition. Participants in the pop-up and floating ad condition recalled seeing an ad more than those in the banner ad condition. Participants were able to recall the location of the floating ad the most. Recognition was best for the pop-up ad condition closely followed by the floating ad condition. The banner ad condition had a much lower recognition. Animation was found not to significantly influence recall or recognition.

These results question the labor intensive, cost ineffective and, more importantly, bandwidth inefficient animations used in the ads.

Results from this study also showed that satisfaction was significantly lower for the animated ads as compared to the static ads. Of the nine participants who remembered exactly what the ad was for, five of them viewed an animated ad. Ten participants in the floating ad condition said that the ad bothered them while just one participant in the banner ad condition said the same, but again, recall and recognition were significantly higher for floating ads than for banner ads. So clearly, if user satisfaction could be ignored, floating ads appear to be the best type of ad to use but how that impacts the user's expectations of a website still needs to be studied. If the ad revenue generated obstructs the true purpose of the website, or distracts the user, then the viability of the company itself may be at stake. Further research should investigate exactly what level of intrusion provides the best balance.

Note: The contents of the test website were taken from: http://www.weathercation.com/weather/
The images on the test website were taken from StarDock's ObjectDock
http://www.stardock.com/products/objectdock/

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