Effects of Structural and Perceptual Factors on Attitudes toward the Website

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This study examined effects of structural and perceptual variables on attitude toward websites. Data were collected from 311 consumers who reviewed four hotel websites. The sites were structurally different in terms of having high versus low number of features and also in terms of informational versus transformational creative strategies. Involvement and perceived interactivity were the two perceptual variables examined in the study. Involvement with the subject of a site and the subdimension of perceived interactivity that measured level of engagement were the best predictors of attitude. Positive attitudes were also associated with sites that took advantage of web-specific features such as virtual tours and online reservations systems. A key implication of this study is the need for advertisers and researchers to reconsider advertising in the context of the web. Radio and television required advertisers to adjust to the new concepts of buying and selling time instead of space and of incorporating aural and visual appeals in messages. The web demands that advertisers adjust to a new medium that is not bound by either space or time and that has the technical capability to involve and engage the consumer.

Attitude toward the advertisement ($A_{AD}$) is a widely used measure of the effectiveness of advertising. Researchers have consistently found that positive $A_{AD}$ is an early step on a hierarchy that leads to higher-level effects such as purchase intention and brand loyalty (Brown and Staymen, 1992; Bruner and Kumar, 2000; Lord, Lee, and Sauer, 1995; Shimp, 1981). Recent work has adapted this concept to measure attitude toward the website ($A_{ST}$) (Chen and Wells, 1999; Yoo and Stout, 2001). What remains relatively unexplored is the effect of structural variables, such as site features and message strategy, and perceptual variables, such as involvement and perceived interactivity, on individuals' attitudes toward the website. This study fills that gap.

Understanding what affects attitude toward the website is important for advertisers and researchers. If structural variables influence attitude, advertisers need to identify specific features that will improve attitude toward their websites. If perceptual variables are important, then advertisers need to understand what leads to those perceptions. For researchers, understanding precursors of attitude toward the website is an important step in understanding how the web extends and revises our understanding of advertising.

LITERATURE

Definitions
Much of the literature on web-based advertising has focused on banner advertisements, buttons, and pop-up windows (Bezjian-Avery, Calder, and Iacobucci, 1998; Brackett and Carr, 2001; Cho, 1999; Cho, Lee, and Tharp, 2001; Shamdasani, Staneland, and Tan, 2001; Sundar, Narayan, Obregon, and Uppal, 1998). This research falls within the
mass media tradition that positions the web as a medium, similar to newspapers, radio, TV, etc., that is the "host" for advertising messages.

Other researchers have taken a broader approach to defining web advertising. Singh and Dalal (1999) argued that corporate websites "meet the conceptual definition of advertising, they resemble ads in physical appearance, and they perform the same basic functions—to inform and to persuade" (p. 92). Silk, Klein, and Berndt (2001) suggested a company’s website may be its principal point of contact with key audiences. Several researchers have examined advertising-related effects in the context of the corporate website (Bruner and Kumar, 2000; Coyle and Thorson, 2001; Lynn, Lipp, Akgun, and Crotez, 2002; Stevenson, Bruner, and Kumar, 2000).

This study examines the corporate website as advertising. This approach enables researchers and marketers to consider ways the web is facilitating both traditional and expanded forms of marketing communication. The corporate website can build a brand while offering depth of information that cannot be provided in traditional media-based advertising. Websites can also host direct-marketing activities that range from requesting a catalog to online purchase. This transactional capability may be one of the most important characteristics of the web; but transactions may be underexamined if web advertising is considered primarily in traditional terms (e.g., banners). If advertisers and researchers fail to examine the capability of this new medium to facilitate transaction and to engage the consumer, then practice and research may be limited in a way similar to early television advertising that often looked like "radio with pictures" rather than taking full advantage of the new medium.

An important first step in measuring the effectiveness of the website as an advertising tool is to examine attitude toward the site (Rodgers and Thorson, 2000). Research on attitude toward the advertisement (A AD) (MacKenzie, Lutz, and Belch, 1986; Shimp, 1981) provides a framework for measuring attitudes toward websites. A AD has a record as an index of effectiveness (Aaker and Bruzzone, 1985; Brown and Staymen, 1992) and predictor of sales (Haley and Baldinger, 1991). With roots in Fishbein’s (1967) theory of reasoned action, A AD has shown strong relationships with higher-level effects such as purchase intention and brand loyalty.

Some researchers have adapted A AD scales to measure attitude toward websites (e.g., Brackett and Carr, 2001; Bruner and Kumar, 2000; Cho, Lee, and Tharp, 2001; McMillan, 2000; Stevenson, Bruner, and Kumar, 2000). Chen and Wells (1999) argued that a new measure was needed for measuring attitude toward the website and developed an A ST scale to meet that need. The primary purpose of this study is to determine what factors lead to positive attitude toward the website.

**Structural factors**

Many studies of corporate websites have focused on the features that could be used by advertisers. Baseline studies attempted to categorize features (Frazer and McMillan, 1999; Ha and James, 1998; Massey and Levy, 1999; McMillan, 1998; Schultz, 1999). More recent studies have looked for differences in website features based on factors such as industry category (Perry and Bodkin, 2002) and characteristics of site managers (Lynn, Lipp, Akgun, and Crotez, 2002).

A few studies have examined relationships between features and attitudes. Choi, Miracle, and Biocca (2001) found the presence of an animated agent improved attitude toward the website. Coyle and Thorson (2001) found that sites with audio, animation, choice availability, and mapping generated the most favorable attitudes. Wells and Chen (2000) found that a long list of features loaded together on a factor they identified as "web worthiness." This factor was responsible for much of the difference in attitude toward websites. Thus, the literature suggests individuals will have more positive attitudes toward websites with a higher number of features.

Beyond the presence or absence of features, websites can be different in terms of "look and feel." The concept of creative strategy, a central stream of advertising research, can help to explain these differences. Puto and Wells (1984) argued that advertising could be categorized as either informational or transformational. Informational advertisements provide consumers with factual data in a clear and logical manner. Transformational advertisements associate the experience of consuming the brand with a set of psychological characteristics that may not be logically connected to the brand. Taylor (1999) developed a six-segment strategy wheel made up of three informational and three transformational strategies. A recent study (Hwang, McMillan, and Lee, 2003) successfully applied this tool to websites.

**Perceptual factors**

Pavlou and Stewart (2000) suggested that user involvement is an important measure to consider in examining the effectiveness of interactive advertising. Several studies have adapted Zaichkowsky’s (1985) Product Involvement Inventory (PII) for measuring involvement with websites (Hwang and McMillan, 2002; McMillan, 2000; Wu, 1999; Yoo and Stout, 2001). Generally, these studies found involvement is positively related to attitude toward websites.

Petty and Cacioppo’s (1983) elaboration likelihood model (ELM) suggests that the relationship between involvement and attitude might be influenced by creative
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strategy. Cho (1999) applied the ELM to web-based advertising and found general support for the model. Attention-getting appeals such as larger advertisement sizes and animation were more effective among low-involvement consumers than high-involvement consumers. For high-involvement consumers, information-based strategies were most effective. The literature suggests “matching” creative strategy with involvement level of the consumer should have positive outcomes. Individuals who have high levels of involvement with the subject of a website will be expected to have more positive attitudes toward sites with an informational creative strategy than sites with a transformational strategy. By contrast, individuals who have low levels of involvement with the subject of a website will be expected to have more positive attitudes toward sites with a transformational creative strategy than sites with an informational strategy.

Perceived interactivity is another important perceptual factor that may influence $A_{3T}$. Cho and Leckenby (1999) found that the user’s intention to interact with a site and the actual number of interactive features at a site were both positively related to attitude toward the site. However, not all studies of site features and perceived interactivity have had similar results. McMillan (2002) found that perceived interactivity of sites, as evaluated by untrained coders, had no correlation with actual interactive site features (e.g., chat rooms and search engines) found by trained coders. However, perceived interactivity was strongly correlated with $A_{3T}$.

McMillan and Hwang (2002) developed a scale for perceived interactivity that includes three subdimensions: real-time communication, no delay, and engaging. The real-time communication dimension includes measures of two-way communication, concurrent communication, conversation, and interpersonal communication. The no-delay dimension focuses on the speed of the transaction with the computer. Finally, the engaging dimension includes measures of the variety of content, how well the website keeps the individual’s attention, ease of navigation, and immediacy of response.

Even though findings related to features and perceptions of interactivity have not been conclusive, logic and the literature suggest some possible relationships. First, we expect that the more features a website has, the higher the individual’s perceived interactivity of the site will be. Second, we expect that the higher the individual’s level of involvement with the subject of a site, the higher the individual’s perceived interactivity of the site will be. Finally, the more interactive an individual perceives a website to be, the more positive we expect that individual’s attitude toward the website to be. Beyond these expected relationships, the following primary question drives our study. Which is a stronger predictor of attitude toward the website: structural variables as defined by site features and creative strategies, or perceptual variables as defined by individuals’ involvement and perceived interactivity?

METHOD

A field experiment was conducted using existing websites that were selected based on two structural factors: high versus low number of features and informational versus transformational creative strategies. Sites selected were drawn from an earlier study of 160 corporate websites (Hwang, McMillan, and Lee, 2003). That study identified eight product categories listed in Ward’s Business Directory that represent a range of consumer products. To select sites for the current study, the authors sorted all 160 of the previously selected sites based on both product features and creative strategies to identify a product category that offered the most variance in site characteristics. The hotel and motel category was selected because it had representative sites that met the following criteria: two sites that scored in the lowest quartile on site features (one informational and one transformational) and two sites that scored in the highest quartile on site features (one informational and one transformational). The organizations responsible for creating and maintaining these sites did not participate in the study in any way. Table 1 summarizes the sites selected.

Differences in number of features and creative strategies were used as the measures of structural factors. An online questionnaire was used to gather additional measures. Attitude toward the website, the primary dependent variable, was measured using the Chen and Wells (1999) $A_{3T}$ scale. Involvement was measured using Zaichkovsky’s (1985) PII. Perceived interactivity was measured using the measures of perceived interactivity (MPI) developed by McMillan and Hwang (2002). Reliabilities of all scales were measured using Cronbach’s alpha and all were at .83 or higher. Copies of measurement tools are available from the first author.

Respondents were recruited through StudyResponse.com, an organization that maintains a panel of more than 2,000 people who have agreed to participate in academic research. A snowball approach was used to recruit panelists, and they represent a nationwide convenience sample of adults who use the web. The panel is coordinated through the Industrial/Organizational Psychology Program at the Georgia Institute of Technology in Atlanta, Georgia. StudyResponse.com coordinators drew the sample and sent recruiting email messages.

Participants were selected randomly and were randomly assigned to review one of
### TABLE 1
Websites Used in the Study

<table>
<thead>
<tr>
<th>URL</th>
<th>Features</th>
<th>Strategy</th>
<th>Brief Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><a href="http://www.sterlinghotel.com">http://www.sterlinghotel.com</a></td>
<td>Low</td>
<td>Informational</td>
<td>Simple opening page with pictures of two hotels and menu items that lead to more detail on each hotel, a virtual tour, information on catering services, and a reservation request form that states: “This is not a confirmed reservation. We will check availability and respond within 12 hours.”</td>
</tr>
<tr>
<td><a href="http://treasurebay.com">http://treasurebay.com</a></td>
<td>Low</td>
<td>Transformational</td>
<td>Opening page presented in black and sepia looks like a pirate map and promises “a shipload of fantastic adventures.” Links lead to the “legend” of this pirate-themed casino as well as to more information about rooms, events, games, and a fully functional online reservation form.</td>
</tr>
<tr>
<td><a href="http://marriott.com">http://marriott.com</a></td>
<td>High</td>
<td>Informational</td>
<td>The top portion of the screen resembles a banner advertisement in size and format and displays mountains and an option to view one of 13 lodging brands. Reservations and special offers are available from the front page as is a site map that provides an overview of all Marriott properties.</td>
</tr>
<tr>
<td><a href="http://www.hilton.com">http://www.hilton.com</a></td>
<td>High</td>
<td>Transformational</td>
<td>The top portion of this opening page also resembles a banner advertisement, but it includes a montage of people and places and a message: “Exciting, Distinctive, Hilton.” Reservations and specials are available from the front page as are links to company, franchise, employment, investor, press and media, privacy and security, and site usage information. Links to affiliated brands are available.</td>
</tr>
</tbody>
</table>

Four websites and then complete the online survey. As an incentive, respondents were entered into a drawing for Amazon.com gift certificates.

**FINDINGS**
A total of 720 email recruitment messages were sent. Forty-five of those email messages could not be delivered (because of bad email addresses, full email boxes, etc.) reducing the sample to 675. The total number of responses to the survey was 368 resulting in a response rate of 54.5 percent. However, 57 respondents did not provide a valid User ID and thus could not be linked to the site that they reviewed. These respondents were eliminated from final analysis reducing the number of valid responses to 311 for a valid response rate of 46.1 percent. Responses were distributed fairly evenly across the four websites with the number of respondents per site ranging from 71 to 79.

To test how well respondents represented the panel, gender and age were compared for the two groups. The panel was 78.0 percent female and 74.2 percent of respondents were female. This difference in gender distribution is not significant ($\chi^2 = 1.805, df = 1, p > .05$). The average age of the panel members was 34.7 and the average age of the respondents was 36.5 (range = 18–80). This difference was marginally significant ($F = 5.072, df = 1, p < .05$) and may reflect the fact that older, retired panel members have more time to complete surveys than do younger members (about 2 percent of the panel was age 60 or older, but about 4 percent of respondents were in this age group).

Respondents had a wide spectrum of occupations from accountant to veterinary technician. Respondents were asked to rate their level of computer expertise on a 7-point scale from novice (1) to expert (7). The majority (79.1 percent) re-
TABLE 2
Differences in Attitude toward Websites

<table>
<thead>
<tr>
<th>Website</th>
<th>URL</th>
<th>N</th>
<th>Mean $A_{ST}$</th>
<th>Post Hoc Tests</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td><a href="http://www.sterlinghotel.com">http://www.sterlinghotel.com</a></td>
<td>76</td>
<td>3.90</td>
<td>&gt; Site 2**</td>
</tr>
<tr>
<td></td>
<td>Low features/informational</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td><a href="http://treasurebay.com">http://treasurebay.com</a></td>
<td>79</td>
<td>3.45</td>
<td>&lt; Site 4*</td>
</tr>
<tr>
<td></td>
<td>Low features/transformational</td>
<td></td>
<td></td>
<td>&lt; Site 1**</td>
</tr>
<tr>
<td>3</td>
<td><a href="http://marriott.com">http://marriott.com</a></td>
<td>73</td>
<td>3.74</td>
<td>No significant differences</td>
</tr>
<tr>
<td></td>
<td>High features/informational</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td><a href="http://www.hilton.com">http://www.hilton.com</a></td>
<td>71</td>
<td>3.83</td>
<td>&gt; Site 2*</td>
</tr>
<tr>
<td></td>
<td>High features/transformational</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Overall ANOVA: $df = 3, F = 3.853, p < .01$.
Turkey post hoc test of pairwise significance: *$<.05$, **$<.01$.

TABLE 3
Attitudes of High- and Low-Involvement Respondents

Among High-Involvement Respondents
$df = 3, F = .911, p > .05$

<table>
<thead>
<tr>
<th>Website</th>
<th>URL</th>
<th>N</th>
<th>Mean $A_{ST}$</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td><a href="http://www.sterlinghotel.com">http://www.sterlinghotel.com</a></td>
<td>41</td>
<td>4.32</td>
</tr>
<tr>
<td></td>
<td>Low features/informational</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td><a href="http://treasurebay.com">http://treasurebay.com</a></td>
<td>20</td>
<td>4.06</td>
</tr>
<tr>
<td></td>
<td>Low features/transformational</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td><a href="http://marriott.com">http://marriott.com</a></td>
<td>38</td>
<td>4.11</td>
</tr>
<tr>
<td></td>
<td>High features/informational</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td><a href="http://www.hilton.com">http://www.hilton.com</a></td>
<td>35</td>
<td>4.25</td>
</tr>
<tr>
<td></td>
<td>High features/transformational</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Among Low-Involvement Respondents
$df = 3, F = .105, p > .05$

<table>
<thead>
<tr>
<th>Website</th>
<th>URL</th>
<th>N</th>
<th>Mean $A_{ST}$</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td><a href="http://www.sterlinghotel.com">http://www.sterlinghotel.com</a></td>
<td>28</td>
<td>3.24</td>
</tr>
<tr>
<td></td>
<td>Low features/informational</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td><a href="http://treasurebay.com">http://treasurebay.com</a></td>
<td>45</td>
<td>3.14</td>
</tr>
<tr>
<td></td>
<td>Low features/transformational</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td><a href="http://marriott.com">http://marriott.com</a></td>
<td>22</td>
<td>3.18</td>
</tr>
<tr>
<td></td>
<td>High features/informational</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td><a href="http://www.hilton.com">http://www.hilton.com</a></td>
<td>28</td>
<td>3.18</td>
</tr>
<tr>
<td></td>
<td>High features/transformational</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Reported that they were above average in their computer expertise, and the mean for the expertise scale was 5.17.

As illustrated in Table 2, differences were found in attitude toward the websites. The predicted positive relationship between features and $A_{ST}$ was found in some, but not all, cases. Among sites with transformational strategies, the site with more features received a significantly higher $A_{ST}$ score than the one with less features. However, the site with the highest $A_{ST}$ score was the site with a low number of features and an informational strategy.

The literature suggested that differences in involvement with the subject of a website should predict relationships between creative strategy and $A_{ST}$. Scores on the 7-point involvement scale ranged from 1.30 to 6.70 (mean = 4.66, $SD = 1.23$). The correlation between $A_{ST}$ and involvement was strong ($R = .664, p < .01$). As reported in Table 3, two separate ANOVA tests were conducted that compared attitude toward all four sites among high-involvement (those that scored at or above the mean) and low-involvement (those that scored below the mean) respondents. The literature suggested that high-involvement respondents should have more positive attitudes toward sites with an informational strategy than those with a transformational strategy. No such relationship was found. The literature also suggested that low-involvement respondents should have more positive attitudes toward sites with a transformational strategy than those with an informational strategy. No such relationship was found.

The literature also suggested that a higher number of features should lead to higher scores on the perceived interactivity scale. Table 4 reports differences in the overall MPI scale and each of the three interactivity subscales for each of the four sites. One would expect sites 3 and 4 to
TABLE 4
Differences in Perceived Interactivity

<table>
<thead>
<tr>
<th>Website</th>
<th>URL</th>
<th>Overall MPI</th>
<th>Real-Time Conversation</th>
<th>No Delay</th>
<th>Engaging</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td><a href="http://www.sterlinghotel.com">http://www.sterlinghotel.com</a></td>
<td>5.20</td>
<td>4.42</td>
<td>5.72</td>
<td>5.68</td>
</tr>
<tr>
<td></td>
<td>Low features/informational</td>
<td></td>
<td>No significant</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>difference</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td><a href="http://treasurebay.com">http://treasurebay.com</a></td>
<td>4.66</td>
<td>3.97</td>
<td>4.92</td>
<td>5.19</td>
</tr>
<tr>
<td></td>
<td>Low features/transformational</td>
<td></td>
<td>&lt; Site 1**</td>
<td></td>
<td>&lt; Site 1*</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>&lt; Site 3*</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>&lt; Site 3***</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td><a href="http://marriott.com">http://marriott.com</a></td>
<td>5.15</td>
<td>4.47</td>
<td>5.57</td>
<td>5.48</td>
</tr>
<tr>
<td></td>
<td>High features/informational</td>
<td></td>
<td>&gt; Site 2**</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>No significant</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>difference</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td><a href="http://www.hilton.com">http://www.hilton.com</a></td>
<td>5.04</td>
<td>4.57</td>
<td>5.14</td>
<td>5.43</td>
</tr>
<tr>
<td></td>
<td>High features/transformational</td>
<td></td>
<td>No significant</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>difference</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Overall: df = 3, F = 4.761, p < .01.
Real-time conversation: df = 3, F = 3.876; p < .01.
No delay: df = 3, F = 4.479, p < .01.
Engaging: df = 3, F = 2.638, p < .05.
Post hoc tests: *p < .05, **p < .01, ***p < .001.

have higher MPI scores than sites 1 and 2. Site 3 scored higher than site 2 on the overall interactivity scale and on the real-time conversation and no delay subscales. Site 4 scored higher than site 2 on the real-time conversation subscale. However, other significant relationships that were not predicted also emerged and some predicted relationships were not significant.

The literature predicted a positive relationship between MPI and PII measures. We also expected to find that higher MPI scores should result in higher AST scores. Table 5 provides correlations between MPI and both PII and AST. As expected, a strong positive correlation was found between all measures of perceived interactivity and involvement. Strong positive correlations were also found between all measures of perceived interactivity and AST.

To directly address the question of relative value of structural and perceptual variables in predicting AST, we ran a multiple regression that included perceptual variables (involvement and all three sub-dimensions of perceived interactivity), dummy variables for the websites to examine structural characteristics (number of features and creative strategy), and demographic variables (expertise, age, and

TABLE 5
Correlation of Measures of Perceived Interactivity with Involvement and Attitude toward the Website

<table>
<thead>
<tr>
<th>Involvement (PII)</th>
<th>Attitude toward the Website (AST)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall MPI</td>
<td>.742</td>
</tr>
<tr>
<td>Real-time conversation</td>
<td>.502</td>
</tr>
<tr>
<td>No delay</td>
<td>.440</td>
</tr>
<tr>
<td>Engaging</td>
<td>.703</td>
</tr>
</tbody>
</table>

*P < .001 for all correlations.
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gender). The only significant factors were involvement and the engaging subdimension of interactivity. Both had a strong positive influence on $A_{ST}$ ($R^2 = .545, F = 144.129, p < .001$). Involvement was the strongest predictor with a standardized beta of .499 as contrasted with a standardized beta of .294 for the engaging subdimension of interactivity.

DISCUSSION

A key finding of this study is that perceptual variables seem to be stronger predictors of $A_{ST}$ than structural variables. However, the study simply counted the number of features in the site and the creative strategy evaluation focused on the front page of websites. While little relationship was found between these broadly defined features and $A_{ST}$, the study provides some evidence that specific features might affect $A_{ST}$. The researchers were initially perplexed by the high $A_{ST}$ scores for the low-feature informational site. They returned to the site to see if they had miscoded it in some way. They found that the site did indeed have relatively few features. For example, it did not have a way to make confirmed online reservations. However, it did have one feature that was unique—the opportunity to take a “virtual tour” of the hotel. This single feature may be particularly relevant to a hotel website and may account for some of the high scores on both $A_{ST}$ and perceived interactivity scales for that site.

This study found that involvement with the subject of a site is a strong predictor of $A_{ST}$ regardless of creative strategy. This finding is not consistent with elaboration likelihood literature. While the ELM has been successfully tested in the web environment (Cho, 1999), earlier studies have examined banner advertisements. Banners with more peripheral cues draw the attention of low-involvement individuals.

It seems more important to get the right person to the site than to add more features.

When the website itself is the subject of examination, peripheral cues seem to make little difference (see also Tremayne and Dunwoody, 2001). This seeming failure of the ELM to predict response to websites may be because users engage in a relatively high level of activity when viewing a website—generating “situational involvement” even when they may not have general involvement with the subject. This is consistent with earlier studies that found the web is a medium well suited for highly involved products appealing to rationally oriented consumers who seek to fulfill information needs (Yoon, 2001).

Involvement is strongly related not only to $A_{ST}$ but also to perceived interactivity. Additionally, a strong relationship was found between perceived interactivity and $A_{ST}$. Few predicted relationships were found between site features and perceived interactivity or site features and attitude toward the site. This supports earlier studies that found that interactivity is in the eye of the beholder rather than in the “bells and whistles” of websites (McMillan, 2000). It seems more important to get the right person to the site than to add more features.

Despite the strong influence of perceptual factors, the low-feature transformational site generally received the lowest scores on MPI providing limited support for the relationship between site features and perceived interactivity. Even though the low-feature informational site outscored the low-feature transformational site on most measures of perceived interactivity, it was not perceived as more interactive than any of the high-feature sites. Furthermore, this site with the virtual tour did not outrank the other low-feature site on all measures of perceived interactivity. Specifically, the real-time conversation subdimension was not significantly different. This might indicate that not having features such as a screen for making confirmed online reservations is an impediment to two-way communication for hotel sites.

LIMITATIONS AND SUGGESTIONS

FOR FURTHER RESEARCH

The field-experiment design used for this study allowed for limited control over site features. Future studies should consider controlled experiments that add and/or remove specific features and explore relationships between features and website categories. For example, the importance of virtual tours and online reservation systems, which seemed to emerge from this study, may be unique to the hotel category. Controlled experiments could directly identify features that may improve $A_{ST}$ for specific situations.

Studies conducted in a lab environment could also control and/or measure factors such as length of time spent examining the opening page of a website. The length of time spent at a site, or what is sometimes called “site stickiness” might be a very important measure of site effectiveness—perhaps one of the next steps on a hierarchy of effects that applies specifically to web-based communication. Length of time at a site could also be a behavioral measure of involvement that might be more important than self-reported measures in helping advertisers and researchers understand consumer response to web-based communication.
The web demands that advertisers adjust to a new medium that is not bound by either space or time...

Qualitative studies could also provide insight through in-depth analysis of what features and creative strategies consumers find to be useful under what circumstances and why. Future studies should also carefully match target audiences with site features. For example, the high-feature sites in this study included investor information but the individuals who viewed the sites were most likely approaching them from the consumer perspective. If investors had been asked to rate the sites, the outcome might have been different.

This study based the transformational/informational designation strictly on the opening page of websites. However, it is possible that, given the informational nature of the web, users view most websites as primarily informational. This should be tested by having participants use tools such as the informational/transformational scales developed by Puto and Wells (1984).

More research is also needed to understand other perceptual and/or personal variables that might affect attitude toward the website. For example, need for cognition has been shown to be an important factor in the ELM and should be used in further examination of relationships between involvement, strategy, and attitude. Finally, research is needed to examine relationships between attitude and behavior.

Advertisers and researchers need to reconsider advertising in the context of the web. Radio and television required advertisers to adjust to the new concepts of buying and selling time instead of space and of incorporating aural and visual appeals in messages. The web demands that advertisers adjust to a new medium that is not bound by either space or time and that has the technical capability to involve and engage the consumer.

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REFERENCES


ATTITUDES TOWARD THE WEBSITE


STEVENS, J. S., G. C. BRUNER II, and A. KUH.


TREMYN, M., and S. DUNWOODY. "Interactivity, Information Processing, and Learning on


