

An Experimental Study Of The Effects Of Interactivity And Humor In E-Commerce


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ABSTRACT

This paper studies the effects of two website attributes that online businesses often employ in product presentations - the use of interactive product demos and product-related humor - on user perceptions of site entertainment and informativeness, which research has shown may significantly influence a visitor's overall attitude toward an online vendor. Through a 2x2 factorial design, this experimental study finds that the use of interactive product demos helps deliver a message in a more informative and entertaining way, while humor has some marginal effects on perceived entertainment. Findings suggest that more direct product experience is essential in presenting a complete product picture and providing a more enjoyable experience to online shoppers.

Keywords: interactivity; humor; entertainment; informativeness; e-commerce

INTRODUCTION

 Online business is conducted through hypermedia. This medium affords a rich collection of formats that are available to the marketers in the presentation of products. Structural elements like graphics, audio, video, and animation complement traditional features of text size, color and typeface to influence visitor perceptions of interactivity, vividness and realism (Rodgers & Thorson, 2000; Nyilasy & Reid, 2009). Literature has shown effects of interactive features on website appeal and e-store traffic (Ghose & Dou, 1998; Lohse & Spiller, 1998). Consumer research finds that features like banner size, animation, and humor impact audience recall and ad effectiveness (Li & Bukovac, 1999; Cline et al., 2003), and interactivity and vividness affect perceived telepresence and attitude toward a website (Coyle & Thorson, 2001), whereas telepresence refers to the perception of direct experience through virtual reality - a simulated environment in which the user feels present (Steuer, 1992).

ENTERTAINMENT AND INFORMATIVENESS

Perceived entertainment and perceived informativeness are critical perceptual antecedents to consumer assessment of the value of a commercial message (Ducoffe, 1996), as well as attitude toward the site (Ast) or brand (Chen & Wells, 1999; Büschken, 2007). The successful delivery of a website is done through an effective intersection of information and entertainment (Eighmey, 1997). Research has shown that perceived informativeness and perceived entertainment positively influence consumer trust toward online vendors (Gao & Wu, 2010).

The behavior of website visitors can be either goal-directed, i.e., searchers, or experiential, i.e., surfers (Hoffman & Novak, 1996). Entertainment supports experiential flow of surfers because they are more likely to engage in “shallow, sensory-level, peripheral processing of the executional aspects of the message” (Singh & Dalal, 1999, p.95). Henceforth, entertainment features are more likely to have an impact on exploration behavior and attitude of surfers. In a low-engagement information-processing mode, graphics, animations, and video clips just might be the very elements that prevent a visitor from simply clicking away from a site.

Customers like informative product presentations in an entertaining way just like they appreciate organized aisles and appealing décor in a brick-and-mortar store (Koufaris & Hampton-Sosa, 2004). Consumers who favor online shopping consider their interaction with a Web vendor more informative due to their perceived control over limiting their exposure to information they are interested in, whereas perceived control is defined to be the extent the

system allows the user to manipulate the pace and sequence of exposure to the content presented (Milheim & Martin, 1991). The Chicago school of economists considers informative commercials a facilitator of efficient and active comparison shopping by consumers (Bloom & Krips, 1982).

This paper examines the effects of two specific presentation attributes - the use of interactive product demos and product-related humor on perceived entertainment and perceived informativeness, which research has shown have significant effects on a visitor's overall attitude toward the site (Ast) and intention to engage in online shopping (Chen & Wells, 1999; Gao & Koufaris, 2006).

INTERACTIVITY

Interactivity is an important aspect that distinguishes the Internet from other media. Telepresence fulfills audience needs of "escapism, diversion, or aesthetic enjoyment" (Ducoffe, 1995, p. 3), where the value of entertainment lies (McQuail, 1983). Many e-commerce sites use animation to display a product from a multi-dimensional perspective, and typically activate this feature only in response to a visitor's mouse click. One such example is an automaker that allows the online visitor to experience a new vehicle through 360-degree view of a car or a short video clip demonstrating its unique features. Interactive functions allow the user to participate actively in the exchange and persuasion process through direct manipulation of the structural elements of a site (Rodgers & Thorson, 2000). For example, a clickable image leads to the perception of a more interactive website that Coyle and Thorson (2001) argue would further lead to consumer's favorable attitude. The interactivity of this medium provides the potential to deliver information in a most entertaining form.

H1 Perceived entertainment is positively related to website interactivity.

A picture is worth a thousand words, literally in our current context. A "true picture" of a product is information a consumer values (McQuail, 1983; Ducoffe, 1996). Animated product displays enhance the directness of a customer's product experience, which has been found to produce more confidently held and more enduring attitudes (Smith & Swinyard, 1983). Such direct product experience is informative to the customer due to that it is relevant and truthful, two important characteristics for a communications message to be considered informative (Aaker & Norris, 1982). Thus we hypothesize the following:

H2: Perceived informativeness is positively related to website interactivity.

HUMOR

Humor is "an incongruous comment that is recognized by the receiver as an attempt to amuse and that succeeds at amusing" (Morkes et al., 1999, p.403). About 10% to 30% of all advertising expenditures in the US are for ads with humor intent (Krishnan & Chakravarti, 2003). Research has shown that humor influences brand recognition (van Meurs & Aristoff, 2009), attracts attention, and promotes purchases (Weinberger et al., 1995). Scott et al. (1990) find that humorous fliers increase attendance at social events like neighborhood picnics and clambakes. Wells et al. (1971) find humor to be a major perceptual dimension in user response profiles to TV commercials and believe that humor contributes to entertainment. Humor fulfills needs of escapism, diversion, and emotional release, which form the major ingredients of perceived entertainment (Ducoffe, 1996). Humor intends to amuse and entertain people, to make them laugh, and to convey light-hearted enjoyment. Humor is also found to enhance the likeability of the computer interface and has a positive effect on user cooperation (Morkes et al., 1999). Thus we so hypothesize.

H3: Perceived entertainment is positively related to the use of humor.

Humor helps gain attention and comprehension (Cline et al., 2003). Both related humor – integration of humor with product claims – and unrelated humor have been found to influence reader or viewer recall and comprehension (Chapman & Crompton, 1978), though related humor seems to have a superior effect (Cline & Kellaris, 2007). Recall and comprehension reflect the ad's effectiveness at getting product-related messages across to the viewer, indicating a more informative message to the visitor. For a casual visitor to a website, peripheral cues

like humor could gain visitor attention just like they do in traditional media (Weinberger et al., 1995; Elpers et al., 2004). Thus we propose the following hypothesis.

H4: Perceived informativeness is positively related to the use of humor.

METHODOLOGY

This study adopts a methodology that carefully balances internal validity and external validity through a 2x2 factorial design incorporating a real commercial website.

Existing literature in both advertising and IS research emphasizes developing experiments with high levels of internal validity (Coyle & Thorson, 2001; Westland & Au, 1998). For example, Coyle and Thorson (2001) develop multiple websites and aggregate cells of treatments into a 3x3 design for interactivity and vividness. Using real commercial sites in an experimental study enhances external validity. Such an approach has been commonly adopted by consumer research involving the Web (Gefen et al., 2003; Koufaris & Hampton-Sosa, 2004).

Fixed factors adopted in this study to separate comparison groups include a humorous ad related to products promoted at the site and prominent links to interactive product demos. Description of stimuli for each treatment group is summarized in Table 1.

Table 1: Experimental Design

Stimuli	No Interactivity	Interactivity
No Humor	- No apparent link to product demo - No humorous ad	- Prominent link to product demo - No humorous ad
Humor	- No apparent link to product demo - Humorous ad shown	- Prominent link to product demo - Humorous add shown

Voluntary participants are recruited from a northeastern college in the US through a gift incentive and several cash prizes. Participants are randomly assigned to the four experimental groups in a computer lab. Each participant completes a survey after a visit to the site. Web experience, age, and gender are taken as potential control variables.

MEASURES

Among the dependent variables, perceived entertainment and perceived informativeness are measured through 3-item scales adapted from Ducoffe (1996). We also measure attitude (Ast) through three pairs of adjectives: like-dislike, favorable-unfavorable, and good-bad (Coyle & Thorson, 2001). Since product involvement is considered a significant predictor of consumer attitude and behavioral intentions in the current literature (Koufaris et al., 2001), it is taken as a potential covariate using the Revised Personal Involvement Inventory (RPII) (Zaichkowsky, 1985).

RESULTS

One hundred and twenty complete surveys are collected, with 30 data points in each experimental group. Participants’ overall attitude toward the site (Ast) is high, with a mean score of 5.66 on the 7- point differential scale.

All variables exhibit high level of reliability with the Cronbach’s alpha values, as summarized in Table 2, exceeding the recommended 0.7 (Nunnally, 1978).

Table 2: Scale Reliability

Scale	Cronbach's Alpha
Informativeness	.8319
Entertainment	.8668
Ast	.9173
Product Involvement	.9278

Manipulation checks via one-way ANOVA show significant thus successful effects ($p < .001$) of manipulated factors on participants' acknowledgement of receipt of intended stimuli.

Normal P-P plots of dependent variables clustered around a straight line, indicating normal distribution. Levene's test of equality of error variances shows no reason to reject the null hypothesis of error variance being equal, indicating satisfaction of MANOVA assumptions.

A multivariate analysis of variance (MANOVA) is performed on the hypotheses. $F[1,116]$ statistics for the effects of site interactivity are 9.409 ($p = .003$) and 5.259 ($p = .024$) on perceived entertainment and perceived informativeness, respectively. The effect of humor on entertainment was marginally significant with $F[1,116] = 2.871$ and $p = .093$. Humor had no effect on perceived informativeness ($F[1, 116] = .079$, $p = .779$).

Product involvement is included as a covariate in the second run due to its strong linear ($p < .01$) correlation with both dependent variables, at $r = .437$ with perceived entertainment and $.406$ with perceived informativeness. Results show similar effects with the F statistics of interactivity on perceived entertainment and perceived informativeness at $F = 8.393$ ($p = .003$) and $F = 4.368$ ($p = .030$), respectively. Humor again has only marginal effect ($F = 3.651$, $p = .059$) on perceived entertainment and no effect on perceived informativeness.

Hence we conclude that those who are provided prominent links to interactive product demos perceive the site significantly ($p < .01$) more entertaining than those who are not, and perceive the site significantly ($p < .05$) more informativeness than those who are not, hence, supporting Hypotheses H1 and H2. Those who are presented with a humorous ad perceive the site marginally ($p < .10$ at $.059$ and $.093$) more entertaining than those who are not, but see no difference in perceived informativeness ($p > .10$), thus partially supporting H3 and not supporting H4.

Lastly, we run a regression analysis on attitude toward the site (Ast) with perceived informativeness and perceived entertainment as independent variables. Model has good fit with low VIFs and no collinearity or heteroscedasticity. Results show that both are significant predictors of attitude at $p < .01$. These two perceptual dimensions explain about 60% of the variance in Ast.

DISCUSSION

This study examines the effects of interactivity and humor on perceived entertainment and perceived informativeness of a website. Site interactivity achieved through the use of prominent links to product demo pages shows significant effect on both perceived entertainment and perceived informativeness, suggesting to practitioners the potential benefits of using such features widely.

Humor had marginal effect on perceived entertainment. We note that this could be due to the light dose of humor (only one cartoon ad was used) employed in the experiment. Ideally, a stronger dose of amusement containing a number of product-related cartoons and humorous stories seamlessly embedded and scattered in a website would serve as a better stimuli. The finding of no effect of humor on perceived informativeness could be due to the amount of information that already exists at the site and thus further differentiation of perceived informativeness becomes particularly difficult with even stronger humorous content. Future studies should try to replicate the experiment at differing levels of information amount.

Another limitation of this study is that students are not the only shoppers online. Whether the general public would respond similarly as our student sample did in this study is yet to be examined in a broader population.

Nonetheless, this study validates the merits of direct experience, virtual reality, and telepresence. Findings from this study suggest that the use of interactive product demos helps deliver a message in a more informative and entertaining way. Perceptions of site entertainment and informativeness tends to be stronger when such features are incorporated, resulting in a more enduring level of telepresence. This study further demonstrates that more direct product experience is essential in presenting a complete picture of products in an entertaining way. Findings suggest to practitioners that entertaining attributes can be developed and used to provide a more enjoyable experience to customers and visitors.

AUTHOR INFORMATION

Yuan Gao is an associate professor of Information Systems at Ramapo College of New Jersey. He holds a Master's in CIS from Brooklyn College, an MBA and a Ph.D. in Business from Baruch College-CUNY. His research interests include human computer interaction, web interface design, e-commerce, and educational technology. He edited a book entitled *Web Systems Design and Online Consumer Behavior*. His research has appeared in *The DATA BASE for Advances in Information Systems*, *The Electronic Library*, *Journal of Electronic Commerce in Organizations*, *Journal of Applied Business Research*, *American Journal of Business Education*, and *Journal of Educational Multimedia and Hypermedia*.

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