

Designing to Sell Online: Persuasive Power in Action

Wendy Winn, Kati Beck

Electronic commerce promises to radically transform business. To remain competitive, businesses must address many issues before success can be realized. Key to the success of e-commerce will be the effectiveness of the web design interface interacting with consumers. Our user-centered case study, which received an STC Research Grant last July, evaluates consumer attitudes to the on-line shopping experience by observing this interaction. We measure the rhetorical power of design elements on an e-commerce site by using classical rhetoric as the theoretical framework for analyzing our results. This paper reports the preliminary findings of this research as of

PROBLEM STATEMENT

Based on current projections, e-commerce will overtake traditional commerce during the next decade—perhaps as early as 2001 (2). Though tantalizing, e-commerce is still an elusive dream for many companies. As a result, the web is already cluttered with abandoned "storefronts," relics of a failed vision to attract customers (22).

Clearly for e-commerce to succeed, businesses need to know how to attract customers that ultimately become buyers to their web sites. But, how do sites make the browser to buyer transition happen? In 1997, Shaw et. al. predicted: "One of the most critical aspects influencing the success of electronic commerce will be the effectiveness of the interface interacting with consumers" (25). By 1999, James Daly, Editor-in-Chief of *Business 2.0*, stated: "Design is the channel for bringing a new spirit into an on-line shop.creative, customer-centric, humanizing design will ultimately distinguish the winners from the losers."

We suggest that understanding what an "effective interface interaction" means to the customer is central to any discussion on e-commerce research. We also believe e-commerce sites and the design elements they are built from serve a classic rhetorical function—they are a means of persuading

potential customers to explore, to interact, and ultimately to reach the act of purchasing.

It is under this premise that we are conducting our research. By following a user-centered approach and utilizing the theoretical framework of rhetoric, we hope to elicit informed data to the following research question: **How do design elements of an e-commerce site carry out the rhetorical function of persuasion?**

With our research results, we hope to benefit designers of web sites, as well as enable technical communicators to stake their claim in the e-commerce arena. We also hope our findings can serve as a basis for further academic research.

REVIEWING THE LITERATURE

Industry has seemingly reached a level where e-commerce can be treated as an everyday occurrence. Authors have developed what they believe are definitive answers to a number of pertinent questions and have announced them in "guides" for managers (*Electronic Commerce: A Manager's Guide*), for public officials (*E. C.: A Guide for Public Officials*), for investors (*Cyberstocks: An Investor's Guide to Internet Companies*), and for the general public (*The IBM Guide to Doing Business on the Internet*). What's more, the publications suggest that even "complete idiots" can succeed in this arena either as shoppers (*The Complete Idiot's Guide to On-line Shopping*) or as investors (*The Complete Idiot's Guide to On-line Investing*) or as any participant of the .com world (*The Complete Idiot's Guide to E-commerce*).

In contrast, existing academic research efforts mostly benefit the business hierarchy by analyzing the technical development, legal foundation, organizational and managerial issues, societal aspects, and economic concerns of e-commerce, leaving the question of "how to design a successful e-commerce interface" basically unanswered.

Research and consulting groups (1, 6, 7, 8, 20, 21) are gathering information about customers and their attitudes towards e-commerce through surveys. But, according to Shaw, et. al., current studies that rely primarily on self-selected responses solicited on the Internet itself do not generate valid or reliable data (25). Usability groups (2, 3, 15) are also gaining valuable insights into the customer-interface interaction, yet the proprietary nature of their research findings prevent other e-businesses from benefiting from those results.

In the area of web usability, efforts have been made to identify usability problems and special characteristics of web sites (19). A framework has been presented (26), in which existing hypermedia usability can be applied to the World Wide Web to assist individuals in finding the information they need and to help authors in presenting their information more effectively. A discussion has been initiated (24) on how usability methods can evaluate visual design elements like navigation, icon recognition, and look-and-feel. It has also been demonstrated that usability methods can successfully be used to study web design (27).

To measure the persuasive power of design, our research positions itself in a rhetorical framework. Yet, academic literature connecting rhetoric to web design is limited. While software interface design issues have been investigated (9, 28), and visual design has been analyzed in a rhetorical paradigm (18), initiatives to apply classical rhetoric concepts to the communication processes that take place on the WWW (10, 14) are few in number, and limited to the concept of ethos and non-commercial contexts.

The extensive literature in marketing and behavioral sciences (11, 12, 13, 17, 23) offered insights that contributed to our research. Indeed, Jarvenpaa and Todd's groundbreaking study was on one of the first efforts to examine the attitudes of on-line shoppers. Their study identified factors that are salient to consumers as they form attitudes and intentions to shop via the Internet, and served as a basis for formulating our variables.

We based our research methodology on our belief that to understand how e-commerce sites and their design elements carry out the function

of persuasion, it is useful to observe the interaction directly.

RESEARCH METHODOLOGY

In our user-centered case study, we observed 15 subjects: 8 male and 7 female participants. Their ages ranged between 20 and 65. Occupations were representative of a university community: 10 professionals and 5 students. Each subject had previous buying experience on the web, yet none had purchased from our pre-selected site. Subjects had previously visited other e-commerce sites and their previous shopping experiences were either satisfying or very satisfying. No subject had professional web design experience. Since it is not our intent to make generalizable results, this subject pool is not necessarily a representative sample.

The task given each subject was to shop on a pre-selected web site and purchase a gift. The site selected was ValueAmerica.com, which was listed as one of the "Top 100 Hottest Companies on the Net" in *Business 2.0* last March (5). This particular retail site was selected because all 11 variables are present on the site, and because it is an on-line department store with diverse product offerings, thereby accommodating many interests and financial considerations.

Think aloud protocol analysis was used to gather data. Subjects were asked to say "out loud" what their thought processes were during their task. During periods of silence we only prompted our subjects with general questions (such as "What are you thinking now?" and "Why did you click there?") to get our subjects to verbalize reactions that they might have been inclined to express in nonverbal ways. We did not ask them specific questions about specific variables. Our intention was to observe what design elements they may talk about *on their own*, as this action suggests the persuasive (rhetorical) power of those design elements. We video and audio taped each subject. When the shopping task was complete, we conducted a post-task questionnaire allowing subjects to reflect on their shopping experience.

PRELIMINARY FINDINGS

Because our research data is grouped using Aristotle's three means of persuasion (ethos, logos, and pathos), we will present a few examples from each category. Our preliminary findings clearly indicate the dominance of logical appeal (logos), which we attribute in part to the fact that it is the easiest to talk about. In this category we included price presentation, display and accessibility of product choices, product information display, and the intuitiveness of navigation.

The screenshot shows the Value America Pharmacy website. The main heading is "Vitamins & Supplements". A product listing for "Ginkoba Mental Performance Dietary Supplement" is displayed. A callout box with a black background and white text points to the brand name "Ginkoba" in the list of products on the left side of the page. The text in the callout box reads: "The brand-name structure made navigation difficult. Those subjects, for example, who did not figure this structure out, thought that only one item was available in the 'Vitamins and Supplements' group."

Most subjects took advantage of multiple navigational options and did not get lost. Although many negative comments surfaced in the protocol, in retrospect subjects evaluated the navigation as "easy." The majority of comments critiqued the categorization of items by brand name. There was a long learning curve for most subjects to recognize the brand name structure, and the unpredictability of the first brand displayed. Because many never figured out the structure, they only experienced a fraction of the product offerings, which limited their comments. This tendency seems to suggest that the display and the accessibility of product choices, as well as the intuitiveness of navigation through its design, have persuasive power.

The fact that subjects made positive comments about the placement and clarity of pricing

demonstrates that price presentation carries persuasive power. Subjects liked the availability of product description but often missed other description options (i. e. Specifications, Manufacturing Information). Subjects liked the star ratings of products, but expected these ratings to be clickable, and to display actual consumer reviews. Subjects liked the option to "view presentation" on certain products, but the presentations rarely met their expectations. Dissatisfaction arose from slow audio buffering, pages that were inactive, and information that was not product specific. Nonetheless, the large number of comments on product information display seems to suggest the strong persuasive power associated with product information design.

In the category of emotional appeal (pathos) we included the "entertainment factor" or the interactivity of the site through its design, design features that compensate for loss of sensory input, and design elements that address individualized needs.

Mihaly Csikszentmihalyi's "flow" experience (i. e. the process of optimal experience) assumes a generally positive emotional state throughout the "flow". We believe that during the "flow" state, subjects often did not reflect, but succumbed to the process. Thus, evaluating emotional appeal is somewhat difficult.

The screenshot shows the Value America Electronics & Cameras website. The main heading is "Technics Dolby Digital-Ready Home Theater Receiver". A callout box with a black background and white text points to the "click to magnify" link. Another callout box with a black background and white text points to the "Good price presentation" label. A third callout box with a black background and white text points to the "Two dimensional design of multi-layered information" label. The text in the callout boxes reads: "Enlarged image option tries to compensate for loss of sensory input", "Good price presentation", and "Two dimensional design of multi-layered information".

Subjects did make remarks on the visual appeal of the site—its look and feel. Many made positive comments about the white space, color scheme, images, and the consistency of layout. On the other hand, subjects were less satisfied

with design efforts that tried to compensate for the inevitable loss of sensory input. Subjects liked the enlarged image option that allowed them to study the pictures of products in more detail, but would have preferred others ways of examining the product (e.g. view in 3D, option to rotate, etc.) Remarks about the product descriptions also suggested that “presentations” should try to compensate for the experience a customer would be able to get in a physical store. Naturally, these observations were strongly connected to certain types of products (e.g. clothing, furniture, jewelry). Nonetheless, appeal to sensory input seems to have strong persuasive power.

A few remarks addressed personalized design. Subjects expectations were not high, and the comments suggested a strong negative feeling about design elements that intruded on their privacy. The persuasive power of design elements that address a customer’s individualized needs is complex—it is operating in a matrix of personalization, direct marketing, and customer profiling on the one side and privacy on the other.

Our preliminary findings show that although issues of pathos were less often addressed in the protocol, they still appeared to influence persuasion. As suggested above, emotional appeal of the design can be subliminal and not verbalized in the protocol.

We believe that appeal based on the credibility and character of an e-commerce site (ethos) can be achieved through design elements that establish corporate image, design elements that incorporate a sense of community, privacy and security components, and the design of customer services.

By establishing a corporate image, a site can invoke various expectations and preconceptions in the customer. A few of our subjects compared ValueAmerica to WalMart and Sears, based on the logo and the clean, sterile design. These associations influenced subjects throughout the shopping experience, suggesting design elements that establish a corporate image have persuasive power.

At the time of purchase, all subjects had to decide whether or not to become ValueAmerica members. Those who decided not to become

members either failed to see that membership was free or did not perceive a cost benefit for their purchase at a member price. Some were hesitant to give out their e-mail addresses. Many comments concerned financial and privacy issues, and the community building aspect of membership was missed by most subjects.



All subjects made remarks concerning privacy and security issues. They complemented the site for the flawless transaction process (disregarding minor glitches), which assured them of the security of the site. Since our subjects were all experienced shoppers, they did not have any reservations about using their credit card over the Internet. Seeing particular design solutions that promoted a sense of security met their expectations.

RESEARCH OBJECTIVES

We recognize that the variables in our three research groupings are interdependent and that design can appeal to one’s logic, as well as one’s emotion or the evaluation of credibility at the same time. We also recognize that the tendencies in our preliminary findings are indicative of the persuasive power of design elements in the context of ValueAmerica’s particular site design.

When our data analysis is complete, we will have examined two data sets (audio and video) independently and together, which will point out any discrepancies

between words and actions. Although we do not strive for generalizable results, at the conference we will be able to provide a ranking of our variables in level of importance and give practical recommendations, based on subject preferences, to web designers of e-commerce sites.

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Wendy L. Winn
Communications Specialist
Holcombe Department of Electrical and Computer
Engineering
317 Engineering Innovation Building
Clemson University
Clemson, SC 29634
(864) 656-7224
wwendy@eng.clemson.edu

Wendy Winn is a student member of the STC and a graduate student in the Master of Arts in Professional Communication (MAPC) program at Clemson University. She has accumulated 12 years of work experience in marketing and information design (including brochures, newsletters, and complete conference packages) and 3 years of web design experience.

Kati Beck

Web Design and Usability Consultant
Interactive Resources Team, Marketing and
Public Relations
Public Service and Agriculture
82B Poole Agricultural Center
Clemson University
Clemson, SC 29634
(864) 656-6305
kszabo@clemson.edu

Kati Beck is a student member of the STC and a graduate student in the Master of Arts in Professional Communication program at Clemson University. She has gained 4 years of experience in web design and user-centered multimedia product development by working in Clemson University's Multimedia Authoring, Teaching and Research Facility and Interactive Resources Team at Public Service's Marketing Department. Kati has worked as an independent contractor in commercial site development teams.