How Do People Evaluate a Web Site's Credibility?

Results from a Large Study

A report of research by

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Report Contents

Abstract

In this study, 2,684 people evaluated the credibility of two live Web sites on a similar topic (such as health or news). We gathered the comments people wrote about each site's credibility and analyzed the comments to find out what features of a Web site get noticed when people evaluate credibility. We found that the "design look" of the site was mentioned most frequently, being present in 46.1% of the comments. Next most common were comments about information structure and information focus. In this paper we share sample participant comments in the top 18 areas that people noticed when evaluating Web site credibility. We discuss reasons for the prominence of design look, interpret the findings in light of Prominence-Interpretation Theory, and outline the implications of this research for Consumer WebWatch.

Executive Summary

With more than 50 percent of the U.S. population having Internet access, the World Wide Web has become an important channel for providing information and services. As the Web becomes a part of people's everyday lives—booking travel, finding health information, buying products— there is a growing need to help people figure out whether a Web site is credible or not: Can I trust the information on this site? Can I trust in the services this site describes?

As part of the Stanford University Persuasive Technology Lab's mission since 1998, the team has investigated what causes people to believe – or not believe – what they find online. Similarly, Consumer WebWatch, which commissioned this study, has the goal to investigate, inform, and improve the credibility of information published on the World Wide Web. Consumer WebWatch wanted to investigate whether consumers actually perform the necessary credibility checks-and-balances while online that they said they did in an earlier national poll (e.g., read privacy policy pages with at least some frequency). These shared missions created a nexus between the two organizations, which led to collaboration on what we believe to be the largest Web credibility project to date.

The resulting consumer-driven study titled, *How Do People Evaluate a Web Site's Credibility? Results from a Large Study* invited more than 2,600 people to rate the credibility of Web sites in 10 content areas. This study was launched jointly with a parallel, expert-focused project conducted by Sliced Bread Design, LLC. In the expert study titled, *Experts vs. Online Consumers: A Comparative Credibility Study of Health and Finance Web Sites*, 15 health and finance experts were asked to assess the credibility of the same industry-specific sites as those reviewed by the Stanford PTL consumers.

About these joint studies

Stanford Persuasive Technology Lab: In this study, 2,684 people evaluated the credibility of two live Web sites randomly assigned from one of 10 content categories (e-commerce, entertainment, finance, health, news, nonprofit, opinion or review, search engines, sports, and travel.) A total of 100 sites were assessed. We gathered the comments people wrote (2,440 in all) about each site's credibility and analyzed these comments to track which features of a Web site were noticed (or went unnoticed) when consumers evaluated credibility online. (See Appendix A for a complete list of Web sites selected for this study.)

Sliced Bread Design: In this study, 15 experts from the health and financial fields were asked to assess the credibility of sites in their respective areas. A total of 8 health and 7 finance experts visited the same sites (10 health sites or 10 finance sites) as the consumers in the Stanford PTL study. They were asked to rank from 1-to-10 the credibility of the sites specific to their area of expertise, as well as provide detailed written assessments of each site under review. (See Appendix B in the Sliced Bread Design study for a list of the expert participants and brief bios.)

Key findings

We found that when people assessed a real Web site's credibility they did not use rigorous criteria, a contrast to the findings of Consumer WebWatch's earlier national survey, *A Matter of Trust: What Users Want From Web Sites*, released April 16, 2002. In this poll of 1,500 U.S. adult Internet users, people claimed that certain elements were vital to a Web site's credibility (e.g., having a privacy policy). But this most recent Web-based credibility study showed that people rarely used these rigorous criteria when evaluating credibility (e.g., they almost never referred to a site's privacy policy.) We found a mismatch, as in other areas of life, between what people say is important and what they actually do.

The data showed that the average consumer paid far more attention to the superficia l aspects of a site, such as visual cues, than to its content. For example, nearly half of all consumers (or 46.1%) in the study assessed the credibility of sites based in part on the appeal of the overall visual design of a site, including layout, typography, font size and color schemes.

This reliance on a site's overall visual appeal to gauge its credibility occurred more often with some categories of sites than others. Consumer credibility-related comments about visual design issues occurred with more frequency with finance (54.6%), search engines (52.6%), travel (50.5%), and e-commerce sites (46.2%), and with less frequency when assessing health (41.8%), news (39.6%), and nonprofit (39.4%) sites. In comparison, the parallel Sliced Bread Design study revealed that health and finance experts were far less concerned about the surface aspects of these industry-specific types of sites and more concerned about the breadth, depth, and quality of a site's information.

Topics our analysis did not find

Although our analysis probably did not reveal all issues related to the credibility of the sites in this study, there were topics we looked for in our analysis but did not find. A relatively small number of consumers registered credibility assessment comments that related to Consumer WebWatch's five general guidelines for improving credibility on the Web: **Identity**, **Advertising and Sponsorships**, **Customer Service**, **Corrections**, and **Privacy**. (See http://www.consumerwebwatch.org/bestpractices/index.html)

As we examined the 2,440 comments about credibility, we found that less than 10 percent of the participants' comments (or 8.8%) referred to the **identity** of the site or its operator. Nearly 7 percent (or 6.4%) of consumers in our study made comments about a site's **customer service** or related policies when assessing credibility. Nearly 3 percent (or 2.3%) of consumer comments referred to a site's **sponsorships** when assessing credibility – whether perceived as positive or negative in nature. We found that people mentioned **privacy** policies in less than 1 percent of their comments. We also looked for comments about **correcting false or misleading**

information and found no comments along these lines. These last two issues apparently had little effect on how our participants evaluated the credibility of Web sites in this study.

Our result among consumers about the prominence of site design and overall look was not what we had hoped to find. Participants seemed to make their credibility-based decisions about the people or organization behind the site based upon the site's overall visual appeal. We had hoped to see people use more rigorous evaluation strategies while assessing sites. This result indicates that Consumer WebWatch, along with librarians and information professionals, must increase efforts to educate online consumers so they evaluate the Web sites they visit more carefully and make better educated decisions, particularly when it could adversely affect their pocketbooks or health situations.

Insights from Prominence-Interpretation Theory

In addition, this paper draws on Prominence-Interpretation Theory to explain what happens when consumers assess credibility – and why a mismatch seems to occur between what people *say* they do and what they *actually* do online.

There seem to be two pieces to the Web credibility evaluation puzzle. Previous research focused on just one piece: the *judgments* people make about Web site features (e.g., who sponsors the site, the presence of a privacy policy, broken links). The other piece of the puzzle deals with what people *notice* when they evaluate a site for credibility. Until this study, there was no data about this second piece. For this reason, the current study is special because it is the first to generate findings about what people notice when they evaluate a Web site for credibility.

Putting these two pieces together – what people *notice* about a site and the *judgments* they make as a result – gives a fuller picture of what occurs during an online credibility assessment. As a result of this study, we finally have data about both elements in Prominence-Interpretation Theory – what gets noticed and the judgments people make. Bringing the various studies together creates a richer understanding of how people evaluate the credibility of Web sites. (See the "**How to View This Study & Other Web Credibility Research**" section for a more detailed explanation of Prominence-Interpretation Theory.)

About Consumer WebWatch

Consumer WebWatch is a project of Consumers Union, the non-profit publisher of *Consumer Reports* magazine and ConsumerReports.org. The project is supported by The Pew Charitable Trusts, which invests in ideas that fuel timely action and results; the John S. and James L. Knight Foundation, which promotes excellence in journalism worldwide and invests in the vitality of 26

U.S. communities; and the Open Society Institute, which encourages debate in areas in which one view of an issue dominates all others. Consumer WebWatch's Web site launched April 16, 2002.

http://www.consumerwebwatch.org

About the Stanford Persuasive Technology Lab

The Stanford Persuasive Technology Lab (captology.stanford.edu) creates insight into how computers can be designed to change what people think and do, an area called "captology." Directed by experimental psychologist B.J. Fogg, the Stanford University team includes social scientists, designers, and technologists who research and design interactive products (from Web sites to mobile phones) that motivate and influence their users. Although this area can be controversial, the lab's focus is on using the power of persuasive technology to promote positive changes in domains such as health, education, business, and safety. As part of the lab's mission, since 1998 the team has investigated what causes people to believe – or not believe – what they find online.

http://credibility.stanford.edu

About Sliced Bread Design, LLC

Sliced Bread Design is a usability and interaction design agency established by Julie Stanford and Ellen Tauber to help people effectively use and enjoy interactive products. Sliced Bread Design provides user study and interface design services to help organizations create compelling online, desktop, voice, and wireless software. Its work appears in a variety of products, ranging from online enterprise resource planning software for Fortune 500 companies to consumer software for mobile phones. The company is located in California's Silicon Valley.

http://www.slicedbreaddesign.com

How Do People Evaluate a Web Site's Credibility?
Results from a Large Study

Introduction

Can you trust what you find on the Web today? There's no simple answer to this question.[1]

With more than 50 percent of the U.S. population having Internet access,[2] the World Wide Web has become an important channel for providing information and services. As the Web becomes a part of people's everyday lives—booking travel, finding health information, buying products—there is a growing need to help people figure out whether a Web site is credible or not[i]: Can I trust the information on this site? Can I trust in the services this site describes?

If people are unable to assess the credibility of the sites they visit, people will end up embracing bad information and unreliable services. This could have devastating effects. For example, people could damage their health or lose their retirement savings if they believe the shoddy information they have found online. With enough bad experiences like these, large or small (or enough press coverage of bad experiences), people could stop viewing the World Wide Web as a reliable channel for information and services.

To take this line of thinking to an extreme, imagine a world in which people could *not* reliably assess the credibility of what they find online. What would be the ultimate outcome? In our view, people would eventually stop using the Web for anything that really matters. In an extreme situation, the Web would become a channel for trivialities—for content and services that have little impact on people's lives. This would be a significant loss for institutions that benefit from being online. But we believe the loss would prove to be even greater for individuals. So far in its short lifetime, the Web has provided people with increased options for living rewarding and productive lives.

One of our goals is to help see that the viability of the Web continues. An even more ambitious goal—in fact, the essential mission of Consumer WebWatch—is to help make the Web a safe and reliable channel for people who seek information and services. The study reported in this paper is

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[i]In this paper we adhere to the definition of credibility outlined by Fogg and Tseng (1999), with the following discussion drawing largely from this work. In their view, credibility can be defined as believability. Credible information is believable information. It's important to note that credibility is a *perceived* quality. It is not a property of a Web site, such as how many words the site contains or how many links are on the page. Instead, when one discusses credibility, it is always from the perspective of the observer's perception. It's also important to understand that people perceive credibility by evaluating multiple dimensions simultaneously. In general, these dimensions can be categorized into two key components: *trustworthiness* and *expertise*. The *trustworthiness* component refers to the goodness or morality of the source and can be described with terms such as *well intentioned*, *truthful*, or *unbiased*. The *expertise* component refers to perceived knowledge of the source and can be described with terms such as *knowledgeable*, *reputable*, or *competent*. People combine assessments of both trustworthiness and expertise to arrive at a final credibility perception.

a step toward achieving this larger goal. A collaboration between Consumer WebWatch and Stanford University's Persuasive Technology Lab (with key contributions from Sliced Bread Design, LLC), our research investigates how people evaluate the credibility of Web sites today. Our work at this point is descriptive in nature (focusing on what people do) rather than prescriptive (what people *should* do). With a basic understanding of how people tend to assess the credibility of Web sites, Consumer WebWatch is now in a better position to create solutions that help people evaluate the credibility of online information and services.

We believe that the future health of the Web hinges on issues relating to credibility. For this reason, we have chosen to invest time and money to understand this domain, with the realization that our reach is likely to exceed our grasp. To our knowledge this is the largest study to date on the credibility of Web sites. While our study confirms some earlier assumptions and research findings,[3] the data from this project take our understanding of Web site credibility to a new level, offering richer insight into credibility assessments. The study also suggests new areas for Web credibility guidelines, the need for consumer education, and potential areas for future investigations.

How to read this report

We've written the report to be a hybrid between an industry research report and an academic paper (but with a friendlier style—we hope). To be clear, this report is not a news story—you won't find the most important elements in the first few paragraphs.

The first section of our report contains an extended description of the study background, rationale, and research method (Background & Methods). For some readers this section will be important and interesting. For other people, getting through the methods section will be a tedious chore. Although some people may choose to skip or skim the methods section, understanding the strengths and weaknesses of our research method will help readers make more sense—and perhaps better personal interpretations—of our data.

Following the Background & Methods section, we present our study results and briefly discuss those results as we present them. The Results & Discussion section is one that many readers will care about most. To keep this report to a reasonable length, we do not discuss or interpret all the data presented in this report. We hope that readers will examine the data and reach some of their own conclusions, ones that we have not specifically outlined in this report.

After the Results & Discussion section, this paper presents a theory that explains how our study findings fit with previous research on Web credibility. This theory— called "Prominence-Interpretation Theory"—is not difficult to understand. For some readers these three pages about theory may be the most enlightening part of our report, particularly for those who seek to understand how people assess credibility of Web sites. Some readers may want to jump ahead to

the theory part of our report first ("How to View This Study & Other Web Credibility Research") and then return back to our Background & Methods section and continue reading. This nonlinear approach will give readers more insight into our research throughout the report. (After some debate, we decided to put the theory section toward the end of this document because we didn't want to burden all readers with theory in the first few pages of our report. We want you to keep reading!)

The final section of the paper interprets the study results in light of the current Consumer WebWatch Web credibility guidelines. This section will be most important for those interested in the Consumer WebWatch mission: to make the Web a safe and reliable channel for people who seek information and services.

The final pages of this document contain references, a set of appendices, and a collection of endnotes.

Background & Methods

After three years of researching Web credibility, the Stanford Persuasive Technology Lab began developing a new online method for comparing the credibility of live Web sites. To do this we performed iterative design and pilot testing, including more than 200 people over the course of six months. The results were encouraging. Not only did the data produce a relative ranking of the Web sites that seemed to have high external validity, but also the participants contributed brief evaluations about the Web sites that struck us as frank and insightful. We concluded from these two pilot studies that (1) our online research method of paired comparison would work on a larger scale, for a wider audience; (2) the relative rankings of Web sites that resulted from the research was interesting and at times provocative, but these rankings had little practical or theoretical value; and (3) the most valuable information from the pilot studies were the comments people made about the sites they evaluated.

After refining the research method, the Stanford team began talking to people at Consumer WebWatch, a nonprofit project of Consumers Union, publisher of *Consumer Reports.* Consumer WebWatch commissioned the study covered in this report. This collaboration made sense, since the goal of Consumer WebWatch is to investigate, inform, and improve the credibility of information published on the World Wide Web.[ii] (Note: Consumer WebWatch is supported by grants from The Pew Charitable Trusts, the John S. and James L. Knight Foundation, and the Open Society Institute.)

Choosing 10 content categories

Choosing the categories to study was a collaborative task, including researchers from the Stanford Persuasive Technology Lab, Consumer WebWatch, and Sliced Bread Design, LLC. We selected categories that (1) are prominent on the Web today, (2) had relevance to Web credibility, and (3) had a consumer focus (created for ordinary Web users, as opposed to specialists).

The categories we selected were:

- E-Commerce
- Entertainment
- Finance
- Health
- News
- Nonprofit

- Opinion or Review
- Search Engines
- Sports
- Travel

Choosing 10 Web sites in each category

Choosing 10 Web sites to test in each category was not an easy task. To explore a range of sites and, later, to narrow the field, we sought input from the Consumer WebWatch advisers and researchers at Stanford, among others. We focused on sites that were created for ordinary Web users, not experts (for example, health sites for consumers rather than for medical professionals). We sought to include a wide range of Web sites in each category, and in making our selections we paid attention to issues such as name recognition, popularity, visual design, best practices, and so on. In the selection process, we tried to avoid selecting two sites that were quite similar (such as two online bookstores) unless there was a compelling difference between the two, such as Amazon (purely an online brand) and Barnes and Noble (a brick-and-mortar brand in addition to an online one).

We knew the choice of Web sites would be important. The final rankings of the sites in each category would be a direct result of the sites we chose. For example, if we chose only top-quality sites within one category, then even a very good site could end up on the bottom end of the final rankings. Even more important, the types of comments we would collect from participants during the study would hinge on the sites we chose. If sites didn't offer enough variety, the comments from participants would also lack variety.

After almost two months of deliberations, we finally arrived at our final 100 Web sites for this study. A complete list of all the sites within the 10 categories is included in Appendix A.

With the 100 sites selected and programmed into the Web-based research system, we were ready to begin recruiting participants.

How we recruited study participants

We began recruiting participants in May 2002 by contacting nonprofit groups, such as the Children's Brain Tumor Foundation, and offering a $5 donation for each supporter who completed the study. The nonprofit groups then let their supporters know through e-mail or a link on their Web pages. We drew on diverse charity groups to get a broad range of participants. Our goal was to work with charities that had supporters from all over the U.S. and whose supporters would represent a diversity of ages, income levels, political leanings, and more (the screen shot in Figure 5 shows the nonprofit groups that participated). From June 15th to August 15th, we

collaborated with 10 nonprofit groups, leading to over 2,600 people participating in the study. Although the charity recruiting method does not provide a representative sample of Web users,[iii] this recruitment method is entirely adequate for the purposes of this study, which are fundamentally exploratory. In our view, this method is superior to other tractable alternatives (e.g., offering money directly to people, setting up a contest, spamming.). We also believe that people who participate to help a charity group will do a better job than people who are doing the study for other motives, such as personal interest in winning a contest.

Who participated in this study

A total of 2,684 people completed the study. We did not require people to leave demographic information, yet 60.1% of the participants did so. From the information gathered, we constructed a demographic picture of the people who participated:

- Female: 58.1%; Male: 41.9%
- Average age: 39.9
- Average use of Web: 19.6 hours/week

The respondents who contributed demographic information came from 47 states (no one claimed to be from Idaho, North Dakota, or Wyoming) and the District of Columbia. The vast majority of participants live in the U.S., although people from 29 other countries also participated.

What people did in the study

We provide a more detailed description of what people did in this study below. The following seven steps summarize the participants' experience:

After being contacted by a nonprofit group or a friend, people interested in helping with our study:

1. Logged on to www.mostcredible.org
2. Were welcomed and introduced to the study
3. Were randomly assigned to one of 10 Web site content categories (such as health or news)
4. Were given two live Web sites to evaluate for credibility

[iii]In an ideal world, this type of large-scale research would draw on a representative sample of Web users. However, in the past we've found that obtaining a truly representative sample is not possible—or at least not possible without an enormous budget. As an alternative, in this study we used a recruiting process that has worked well for us before: charity collaborations. In our view, this recruitment method is better than other methods often used, such as spamming, offering discounts at online retailers, or entering people in sweepstakes.

5. Reviewed the two sites assigned to them

6. Ranked the two sites according to credibility

7. Left comments about each site's credibility

A more detailed description of the participants' experience follows:

After being contacted by a nonprofit group or a friend, people interested in helping with the study would log on to www.mostcredible.org and begin. The first page, shown in Figure 1, welcomed people to the study, outlined the three steps, and reminded them that they could later select a nonprofit group to receive a donation.[iv]

Figure 1: The first page participants saw in the study.

After participants read about the study, they would select "Click here to begin" to go to the next page, shown in Figure 2.

[iv]Nowhere in the study did we mention the participation of Consumer WebWatch or its affiliates. We suspected that the influential reputation of Consumers Union would increase the likelihood that companies or people would log on to the study many times and skew the results.

Figure 2: Participants were randomly assigned to view two Web sites fr om one of 10 content categories.

At this point, the Web-based research engine would randomly assign the participant to one of 10 content categories (health, travel, finance, etc.) and randomly select two sites for evaluation from that category.

The Web page listed the category (such as "Finance Web Sites") and listed two Web sites by name and URL. The text on the page asked participants to visit the two sites, return and rank which site was the more credible of the two, and share their comments. Participants could click on the site name or URL to have a new browser window open containing a live version of that Web site, as diagrammed in Figure 3.

Figure 3: Participants viewed two Web sites in the same category.

After participants examined the two Web sites, they returned to the main page to rank which of the two sites they found more credible. Next, they shared comments about their decision, as shown in Figure 4. The system required people to put in a ranking but did not require them to leave comments; however, most people left comments.

Figure 4: Participants ranked the Web sites and left comments about each one.

After entering comments about the sites, participants submitted this information. They were then taken to a page that asked for demographic information (again, not required, but most people cooperated) and asked which nonprofit should receive a $5 donation, as shown in Figure 5.

Figure 5: Screen for demographics and for nonprofit donations.

Participants concluded their role in the study by submitting the page containing demographics and their nonprofit selection. They then saw a "thank you" screen (not shown here) that provided contact information about the study.

Cleaning the data

We asked participants to complete the study only once. We believe that the vast majority of people honored this request. However, there was no foolproof way to assure that someone would not repeat the study in order to earn more money for a nonprofit group or, for whatever motive, to manipulate the study findings. To take steps toward ensuring the integrity of the data, we designed our Web-based system to record the IP addresses of each participant. Finding duplicate IP addresses in the data file would be a reasonable—though not certain—indicator that one person had participated in the study multiple times. There were a number of cases where one IP address is the source for multiple evaluations (in one case, as many as 20). We examined each of these cases, realizing that two people in one household could have completed the study using the same IP address. We also looked for unusual patterns in the data to find evidence of tampering: a Web site that had lots of evaluations in a short period of time, a single category that was evaluated significantly more than others, and so on. After inspecting these cases, we removed data that showed compelling evidence of someone completing multiple sessions or tampering with our randomization scheme.

How we coded and analyzed the comments

The most valuable data from this research are the comments people made about the Web sites they evaluated. During the course of the study, the database stored these comments, along with the ID number for the site under evaluation, the participants' demographics, and other particulars. These comments and associated information became the focus of analysis once data collection was complete.

The first step in analyzing the data was to code the comments according to content. The study generated 2,440 comments about Web credibility. Some of these comments were brief and others were lengthy. Some were trivial and others were insightful. We believe that this collection of comments about Web credibility is the largest to date and offers many opportunities for analysis. We present one type of analysis here; other analyses and interpretations of the data are possible.

Two independent coders went through the participant comments and assigned codes to mark what was said in the comment. A third coder then went through the data to resolve discrepancies. Each comment could receive more than one code. For example, the comment below would be coded in two categories: design look and information bias.

> - *"This Web site looks more professional than the other, but I believe it is also more biased."*

Described more in the Appendix B, the categories for coding came from two sources—the current version of the Consumer WebWatch guidelines (retrieved from http://www.consumerwebwatch.org/bestpractices/index.html on August 15, 2002), and from the emerging themes in the consumer comments themselves (visual design, previous experience with the site, etc.).

After coding each comment, we tallied the frequency for each code category. In other words, we calculated how often a specific issue was mentioned. For example, we found that information bias was mentioned in 283 of the 2,440 comments—11.6% of the time. This frequency score gave an indication of what criteria people used—or said they used—to make their credibility evaluations of the sites they saw.[v] The Results & Discussion section of this report has more information about how we analyzed the comments and what we found.

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[v] We did not require people to make comments in this study, and, of course, not everyone did.

How we calculated the rankings

The ranking system is straightforward. When a user evaluated a site as more credible than the other site listed on the page, the more credible site won a point (+1 went into the database for that site) and the less credible site lost a point (-1 went into the database). Over the course of the study, each site was evaluated many times, gaining and losing points along the way. At the end of the study, each site received a final score, which was the average (mean) of all the scores it had received (the total number of points divided by the total number of times the site was ranked). So if a site were to win all of its credibility pairings, it would have a score of +1.0. If it won half of the time, the score would be 0.0. And if it won 75% of the time, the score would be +0.50.

The 10 sites in each category were then ranked according to their mean scores, highest to lowest. This ranking gives a general idea about which sites people in this study found most and least credible. Small differences in means between two sites in the same category are not practically significant.

We should note here that study participants did not know our plans for this research. They did not know we were studying 10 categories of Web sites and that we were ranking sites within each category. Participants simply evaluated two Web sites. Had participants known we were compiling data to create a credibility ranking of Web sites, we suspect that some people may have tried to manipulate our results.

Results & Discussion

This section presents the results of our study and discusses the findings we judge as the most notable. For the sake of clarity, we present the Results & Discussion section in two parts, as shown below:

Part 1: Results & Discussion – An Overall Analysis of Credibility Comments

Part 2: Results & Discussion – A Focus on Individual Web Site Categories

In Part 1 we share our analysis of the 2,440 comments that participants made about the credibility of the Web sites. Our analysis found 18 types of comments relating to credibility with incidence over 3 percent. We present the data and discuss each type of comment, from most to least common.

In Part 2 we shift our focus from the types of comments people made to the types of Web sites in the study, presenting and discussing the results for each Web site category one by one in the following order:

- E-Commerce
- Entertainment
- Finance
- Health
- News
- Nonprofit
- Opinion or Review
- Search Engines
- Sports
- Travel

Part 1: Results & Discussion – Overall Analysis of Credibility Comments

As explained in the Methods section, participants were given the opportunity to leave brief comments about the credibility of the two sites assigned to them. Discussed in more detail earlier, we coded 2,440 comments according to categories described in the Appendix B. The following pages share the results of our content analysis, starting with the overview in Table 1.

Table 1 presents an overall picture of our content analysis for comments about all 100 sites in this study. This table shows 18 types of comments, from "design look" to "affiliations." The percentages in the table represent how often a comment on that topic appeared in the entire set of comments. For example, participants in our study mentioned something about the "design look" of the site in 46.1% of the 2,440 comments.

	Percent (of 2,440 comments)	**Comment Topics** (addressing specific credibility issue)
1.	46.1%	Design Look
2.	28.5%	Information Design/Structure
3.	25.1%	Information Focus
4.	15.5%	Company Motive
5.	14.8%	Information Usefulness
6.	14.3%	Information Accuracy
7.	14.1%	Name Recognition and Reputation
8.	13.8%	Advertising
9.	11.6%	Information Bias
10.	9.0%	Writing Tone
11.	8.8%	Identity of Site Operator
12.	8.6%	Site Functionality
13.	6.4%	Customer Service
14.	4.6%	Past Experience with Site
15.	3.7%	Information Clarity
16.	3.6%	Performance on Test by User
17.	3.6%	Readability
18.	3.4%	Affiliations
(Categories with less than 3% incidence are not in this table.)		

Table 1: How often participants commented on various issues when evaluating the credibility of Web sites.

While the percentages in Table 1 show the types and frequency of comments about Web credibility, the table alone does not give rich information. Below we provide explanations and examples for each type of comment, along with the incidence for each category of Web site.

1. Design Look – 46.1% Overall

When evaluating the credibility of a Web site, participants commented on the design look of the site more often than any other Web site feature, with 46.1% of the comments addressing the design look in some way. When coding for comments on design look, researchers included comments on many elements of the visual design, including layout, typography, white space, images, color schemes, and so on. The comments could be either positive or negative. Some of the comments coded in this category are as follows:

- *This site is more credible. I find it to be much more professional looking. —M, 38, Washington*

- *More pleasing graphics, higher-quality look and feel — F, 52, Tennessee*

- *Just looks more credible. —M, 24, New Jersey*

- *Actually, despite the subject of the Web site, it looks very credible. This may be due to the subdued color scheme and the font used on the left-hand side of the page. —F, 29, California*

- *I know this is superficial, but the first thing that struck me is the color difference. The … site is a soothing green (sort of like money) while the [other] site is a jarring purple. —M, 56, Virginia*

- *The design is sloppy and looks like some adolescent boys in a garage threw this together. —F, 48, California*

- *Not very professional looking. Don't like the cheesy graphics. —F, 33, Washington.*

- *Looks childish and like it was put together in 5 minutes. —F, 25, Maryland*

Design Look comments, by site category

As shown in Figure 6, nearly half of all site evaluators (46.1%) used visual cues, such as the site's overall design or look, to assess a site's credibility. This happened slightly more frequently with the finance (54.6%), search engines (52.6%) and travel (50.5%) categories, and less frequently with the health (41.8%) and news (39.6%) categories.

**Percentage of Comments
Related to Design Look**
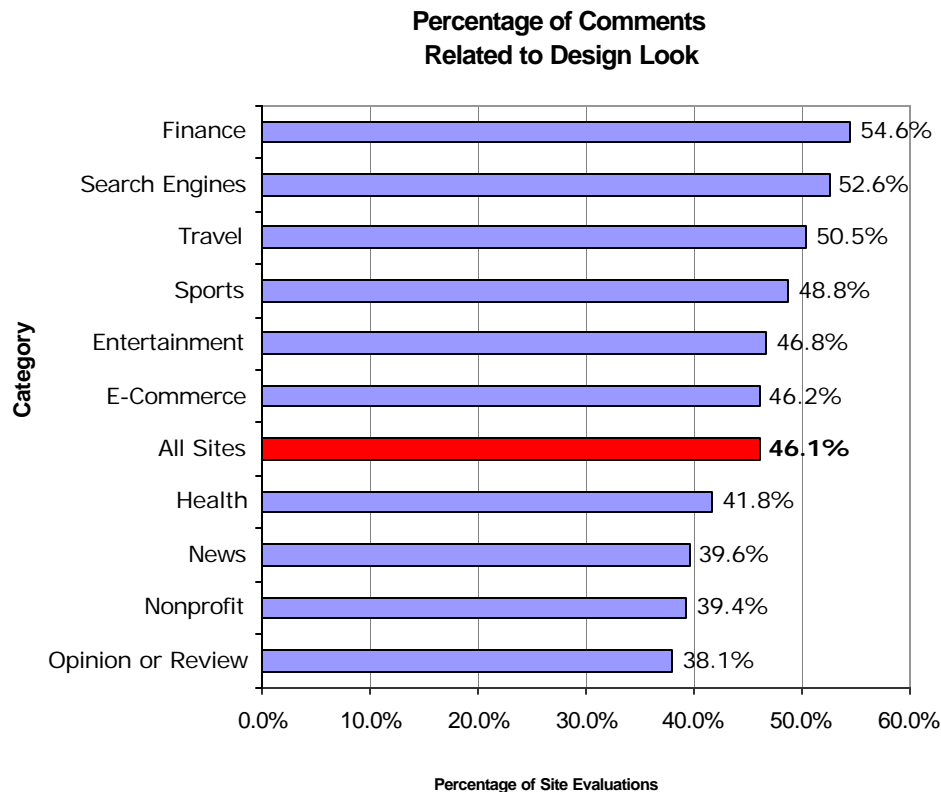
Figure 6: Percentage of comments related to design look, by category

What we find notable about Design Look

One of the overall findings from this study is that our participants relied heavily on the surface qualities of a Web site to make credibility judgments. Our result about the prominence of design look was not what we had hoped to find; we had hoped to see that people used more rigorous evaluation strategies. However, our result is consonant with findings of other research (Cockburn and McKenzie, 2001) that describes typical Web-navigation behavior as "rapidly interactive," meaning that Web users typically spend small amounts of time at any given page, moving from page to page quickly. If such rapid navigation is indeed the norm for most types of Web use, then it makes sense that Web users have developed efficient strategies, such as focusing on the design look, for evaluating whether a Web site is worthwhile.

Our results about the connection between design look and perceived credibility suggests that creating Web sites with quality information alone is not enough to win credibility in users' minds. In most cases Web site designers need also to focus on the impression that the visual design will make, creating a site that achieves what many of our participants described as "a polished, professional look." But the connection between visual design and credibility may not be so simple. Slick-looking Web sites frequently received negative comments. Participants seemed to

make judgments about the people behind the site on the basis of the design look. Many comments were indicative of this attitude: "*It looks like it's designed by a marketing team, and not by people who want to get you the information that you need*."

Based on the comments we've read from this study, we speculate that once a site is above a user's personal threshold to qualifying as having a "professional look," then other aspects of the Web site come into the credibility equation. In other words, the visual design may be the first test of a site's credibility. If it fails on this criterion, Web users are likely to abandon the site and seek other sources of information and services.

We discuss the topic of design look in more depth at the end of this section.

2. Information Design/Structure – 28.5% Overall

After design look, the next category that people commented on in assessing credibility was the structure of the site's information, being mentioned in 28.5% of the total comments. The participant comments discussed how well or poorly the information fit together, as well as how hard it was to navigate the site to find things of interest. While information structure is often associated with usability, the comments here show how information structure has implications for credibility. Sites that were easy to navigate were seen as being more credible. Some sample comments are below:

- *This site is very well organized, which lends to more credibility. —M, 33, Illinois*

- *This one is more credible because it is more organized. —F, 57, Maryland*

- *Horrible site, information badly presented. They try to put everything on the front page, instead of having multiple layers of navigation. This to me suggests that they developed this thing on a whim. —M, 42, Canada*

Information Design/Structure comments, by site category

As shown in Figure 7, more than a quarter (28.5%) of all site evaluations made reference to issues of site information design—that is, the site's overall information structure or organization. This occurred much more frequently in the search engines (42.6%), finance (33.0%), and travel (31.8%) categories, and less frequently in the opinion or review (24.3%), sports (22.3%), and nonprofit (18.2%) categories.

Percentage of Comments Related to Information Design/Structure
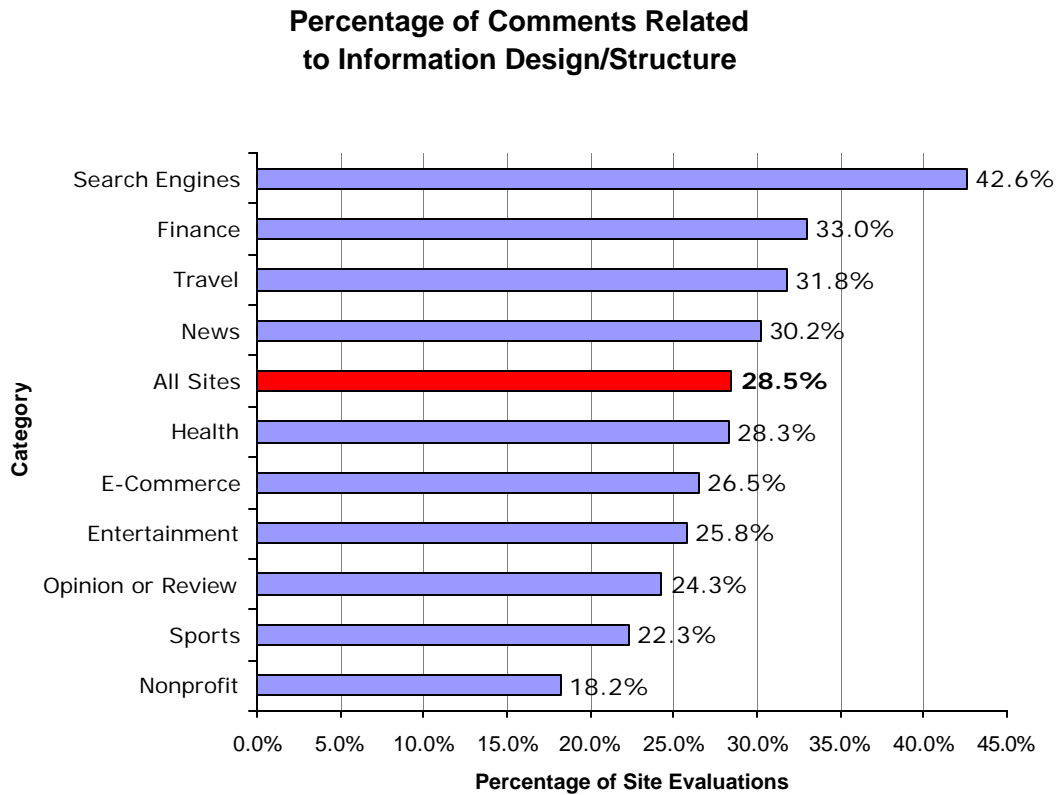
Figure 7: Percentage of comments related to information design, by category.

What we find notable about Information Design/Structure

That information design affects credibility should come as no surprise. A well-organized site is the antithesis to a site that purposely confuses and misleads a user toward advertisements and other promotions.

Online usability research has made it clear that information structure is critical for task success on the Web, and ease of use has been shown to contribute to credibility perceptions in previous research (Fogg et al., 2000; Fogg et al, 2001; Fogg et al., 2002). The reason behind this consistent finding isn't completely clear. One might speculate that by providing a clear information structure, a Web design team demonstrates expertise to the users. Users may then assume this expertise extends to the quality of information on the site.

3. Information Focus – 25.1% Overall

In 25.1% of the comments about credibility, people in this study talked about the focus of information on the site. The comments varied in content. At times a focused site was seen as more credible, other times a narrow focus hurt credibility. What's clear is that many people in this

study relied on information focus to determine whether a site was credible or not. Sample comments are below:

> - *Credible because of the breadth of information available. —M, 35, California*
>
> - *I find this site trustworthy because it offers a simple message to a very targeted community. —F, 34, Massachusetts*
>
> - *This Web site is filled with too much crap. I feel as though part of the reason it seems less credible is the fact that the crap they fill it with is taking attention away from their own Web site. — F, 23, Illinois*
>
> - *Broad categories, but shallow reviews and comparisons. —M, 35, California*
>
> - *This site seems focused on body image. They have articles about feeling good naked, the perfect swimsuit for every body type, and toning exercises. Not a lot of solid health information. —F, 22 Minnesota*

Information Focus comments, by site category

As Figure 8 shows, about one-in-four site evaluations (25.1%) made comments about issues of information focus, that is, the perceived scope or focus of the site. This generally occurred far more frequently in the information-heavy categories (health: 33.0%; news: 31.9%; sports: 30.8%), and occurred less frequently in the more transactional-heavy categories (e-commerce: 24.7%; search engines: 24.5%; finance: 18.9%).

Percentage of Comments Related
to Information Focus
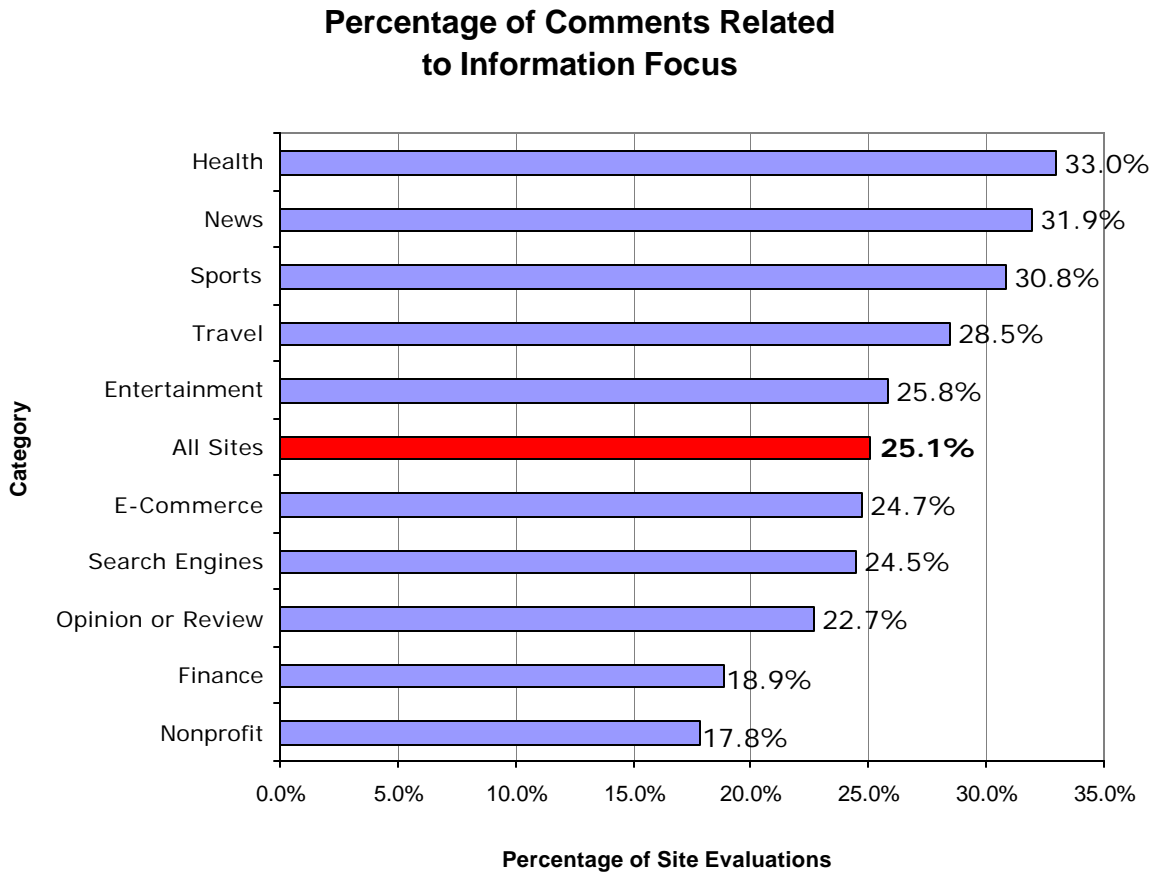
Figure 8: Percentage of comments related to information focus, by category.

What we find notable about Information Focus

The site content's focus (whether broad or narrow), clarity, potential bias, usefulness, and organization were all examined in this study, with focus or depth appearing most important to our participants when evaluating credibility. We suspect that in many cases in Web surfing, users may not necessarily read the in-depth information, but simply having it available seemed to produce a sense of credibility, suggesting the site is authoritative.

The other notable finding about information focus is how much this issue varied depending on the type of site, with information focus being most prominent when evaluating health and news sites and least prominent when evaluating nonprofit sites. The data suggest that people have clearer expectations about the focus of certain types of Web sites. We speculate that the expectations about site focus are higher for the types of information-rich sites people know best (e.g., health, news, sports).

4. Company Motive – 15.5% Overall

We found that 15.5% of the comments in this study addressed the perceived underlying motive of the site or the institution sponsoring the site. These comments often referred to how Web sites lost credibility when the only purpose of a site seemed to be selling things or getting money from users. In other cases, Web sites won credibility by conveying motives that people found to be admirable. Sample comments are below:

- *The fact that this site has a global conscience impressed me and made me feel it was more credible. —F, 40, New Jersey*

- *This site looks like its goal is to help you find what you are looking for. —F, 55, California*

- *I would trust this site because it's run by a religious denomination whose aim is socially responsible investing. —F, 54, New York*

- *Seems too "commercial" and therefore less objective. —M, 52, Texas*

- *This site says to me "Give us your money and get out." —F, 29, British Columbia*

- *Doesn't seem credible when they give a product a good review and give you a link to order it too. —F, 38, Texas*

Company Motive comments, by site category

As shown in Figure 9, a sizable percentage (15.5%) of all site evaluations commented on the perceived motive of a company or organization behind the site. This occurred with far greater frequency in the opinion or review (22.1%), finance (21.0%), and nonprofit (20.2%) categories, and with less frequency in the search engines (14.2%), travel (12.8%), and news (5.9%) categories.

Percentage of Comments Related to Company Motive
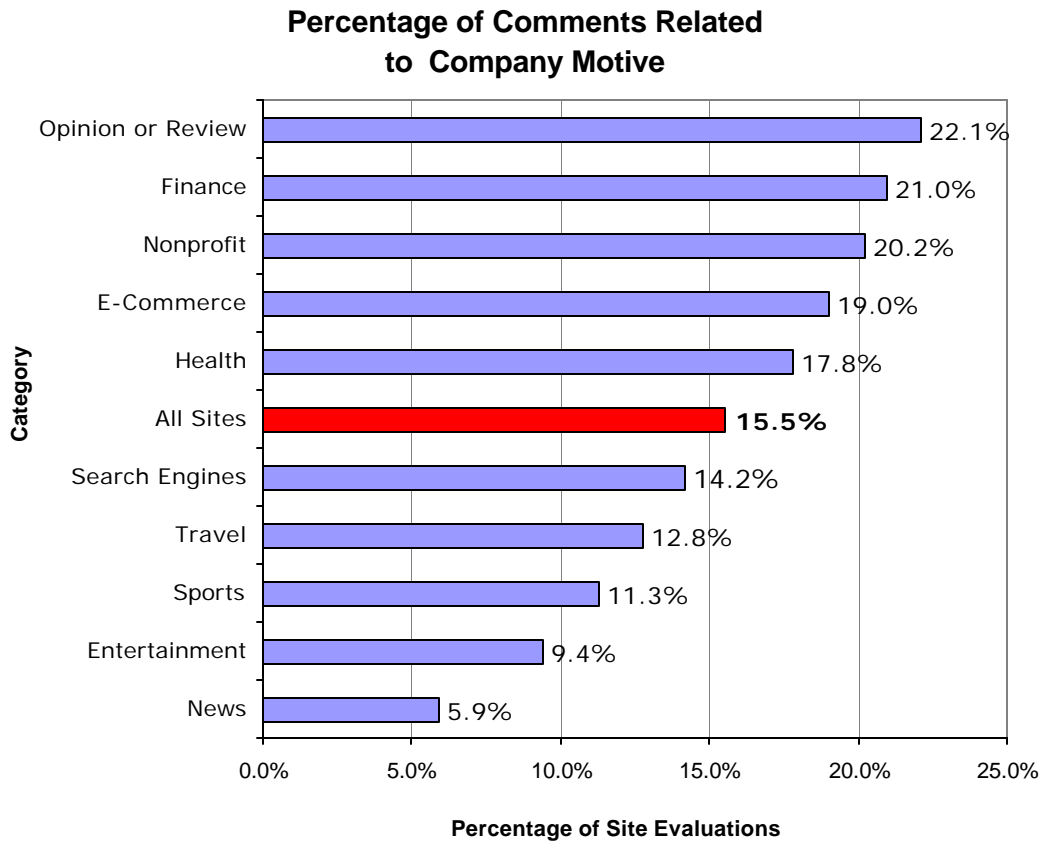
Figure 9: Percentage of comments related to underlying company motive, by category

What we find notable about Company Motive

Generally, people commented positively on company motive if they felt the site provided useful information or services without a commercial purpose. Ads or endorsements made the picture more complicated. A good number of comments made it clear that at least some people recognized a link between endorsements and company profit. Positive reviews of a product or firm, for example, were met with skepticism if the organization behind the site might have something to gain from such good reviews.

5. Information Usefulness – 14.8% Overall

When evaluating Web site credibility, people in this study commented on the usefulness of the site's information 14.8% of the time. As one might expect, useful information led people to see the Web site as more credible. Below are sample comments we found in this category:

- *This Web site provided useful and interesting knowledge about events in sports. —F, 30, New Jersey*

> - *Liked it because it is something that would be useful to me and other family members. —F, 18, Illinois*
>
> - *I searched for a particular scientific term, and this search engine came up with more useful Web sites than the other one. —F, 40, Washington*

Information Usefulness comments, by site category

As Figure 10 illustrates, less than one-in-six site evaluations (14.8%) commented on information usefulness, that is, how useful the site's information was to the user. This happened with far greater frequency in the niche-news categories of health (20.5%), entertainment (19.5%), and opinion or review (17.1%), and with slightly less frequency in the travel (11.5%), sports (11.4%), and nonprofit (11.1%) categories.

Percentage of Comments Related to Information Usefulness
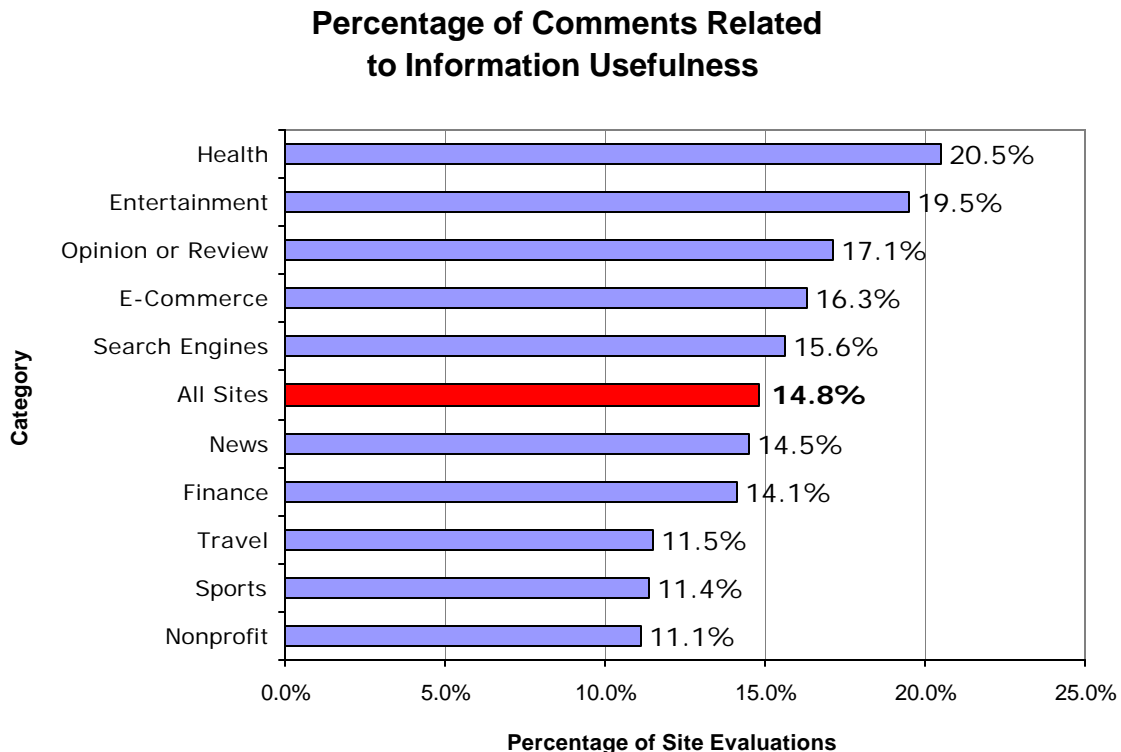
Figure 10: Percentage of comments related to information usefulness, by category.

What we find notable about Information Usefulness

As one would expect, Web sites that offer information people find useful win credibility points. The data suggest that people in our study had the highest expectations about information

usefulness for sites relating to health and entertainment. They had the lowest expectations about information usefulness for sports and nonprofit Web sites.

6. Information Accuracy – 14.3% Overall

In 14.3% of the comments about Web credibility, people talked about the accuracy of the site's information. This category includes comments in which people expressed doubt about the information on the site. But this category also includes comments where people confirmed the accuracy of what they found on the site. In assessing accuracy, people often drew on their own knowledge. Samples of comments relating to information accuracy are below:

> - *Most of the articles on this Web site seem to be headline news that I have already heard, so they are believable.—F, 50, Ohio*
>
> - *I work at AOL Time Warner and read the article regarding accounting problems. It accurately quoted an internal memo from Dick Parsons and the general tone was positive, especially given the current business environment. —M, 45, New York*
>
> - *This site is totally based upon personal opinion and admittedly old data and unscientific methods. —F, 35, Colorado*

Information Accuracy comments, by site category

As shown in Figure 11, less than one-in-six (14.3%) of all site evaluations commented on the accuracy of site information. This occurred far more frequently in the opinion or review (25.4%), news (21.7%), and health (18.7%) categories, and less frequently in the travel (11.1%), finance (8.0%), and search engines (7.1%) categories.

Percentage of Comments
Related to Information Accuracy

Figure 11: Percentage of comments related to information accuracy, by category.

What we find notable about Information Accuracy

Users come to a site armed with a background of previous knowledge and expertise, and it was clear from this study's comments that this background is a critical tool for making credibility assessments. In particular, comments tended to focus on matching what was found on a site to what had previously been read or heard on television—that is, information confirmed from other sources. With respect to credibility assessment, the importance of a site's matching existing user beliefs about the content domain, as opposed to challenging those beliefs, is not clear from the comments and would make for interesting further research.

7. Name Recognition and Reputation - 14.1% Overall

One strategy for evaluating credibility seemed to be relying on the name recognition or reputation of the site operator (such as the American Red Cross). In 14.1% of the comments, people talked about issues of reputation and name recognition. One frequent comment had to do with one's never having heard about an organization before. This hurt the credibility of the site. In other cases, people saw a familiar company name and inferred the site was credible because of that. Below are the sample comments coded in this category:

- *This site is less credible because the name is unfamiliar. —F, 22, Maryland*

- *It seems to me that credibility is all about the name and having heard about it. —M, 25, Michigan*

- *CNN is well recognized in the US as a provider of news. Their reputation is not something they would put at risk with unfounded claims or under-researched articles. —M, 24, Illinois*

- *The Mayo Clinic has a great reputation. I would trust the info I found at this Web site. —M, 34, Connecticut*

Name Recognition and Reputation comments, by site category

As shown in Figure 12, brand name seems to play some role when consumers assess the credibility of sites. One-in-seven (14.1%) site evaluations included comments related to the name recognition or the reputation of a company or the site operator. This occurred more frequently in the e-commerce (25.9%), finance (21.8%), and news (19.1%) categories, and less frequently in the health (10.9%), travel (8.8%), and search engine (5.1%) categories.

Percentage of Comments Related to Name Recognition and Reputation
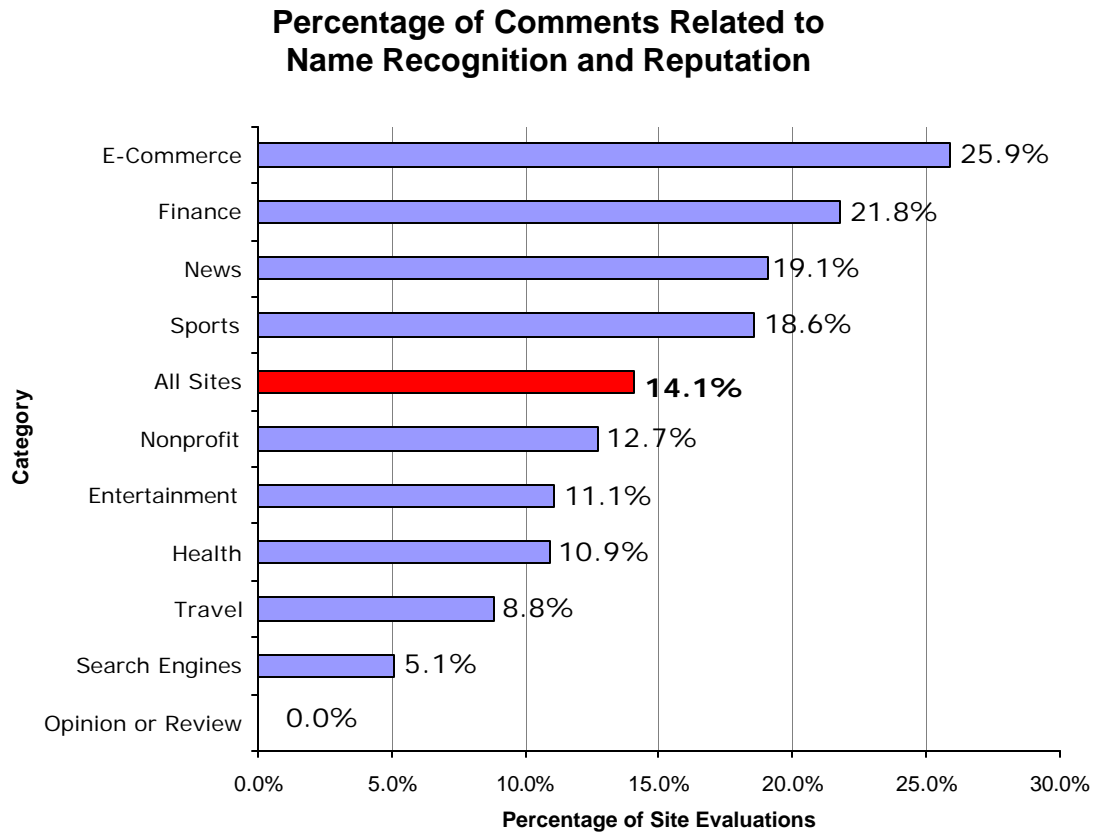
Figure 12: Percentage of comments related to name recognition and reputation, by category.

What we find notable about Name Recognition and Reputation

The comments made clear that a site may be perceived as trustworthy if a user has dealt successfully with the site previously, knows someone who has, knows of the site's large following, has heard good things about the site, or at least has heard of the brand name (sometimes via the site's real-world counterpart).The reputation of brick-and-mortar organizations appeared generally to carry over to those organizations' Web sites, although the relationship between this tendency and a site's identity information (see section 11) would make for interesting further investigation.

8. Advertising – 13.8% Overall

People in this study used advertising on a site as a criterion for judging the site's credibility. In 13.8% of the comments, people talked about advertising, usually negatively. But at times, study participants talked about the judicious use of advertising in a positive way. Pop-up ads were widely disliked and seemed always to reduce perceptions of site credibility. Sample comments relating to advertising are below:

> - *The advertisements were distracting and reduced the credibility to me. Any site which gives so much real estate to advertisers probably doesn't have my best interests in mind. —M, 25, Washington*
>
> - *Every link brought pop-under ads as well as traditional ads. I feel their view is colored by their desire to boost their advertising revenue: they perceive their primary clients to be their advertising base, rather than the people who use their site. —F, 43, Illinois*
>
> - *This [site] didn't have any advertising, which makes it more credible in my opinion. —F, 34, Iowa*

Advertising comments, by site category

As shown in Figure 13, nearly 14 percent (13.8%) of all site evaluations included comments about a site's advertising, whether positive or negative. This occurred far more frequently in the search engines (24.6%), health (21.3%), and opinion or review (16.6%) categories, and less frequently in the travel (10.5%), e-commerce (10.5%), news (9.3%), and finance (8.3%) categories.

**Percentage of Comments
Related to Advertising**
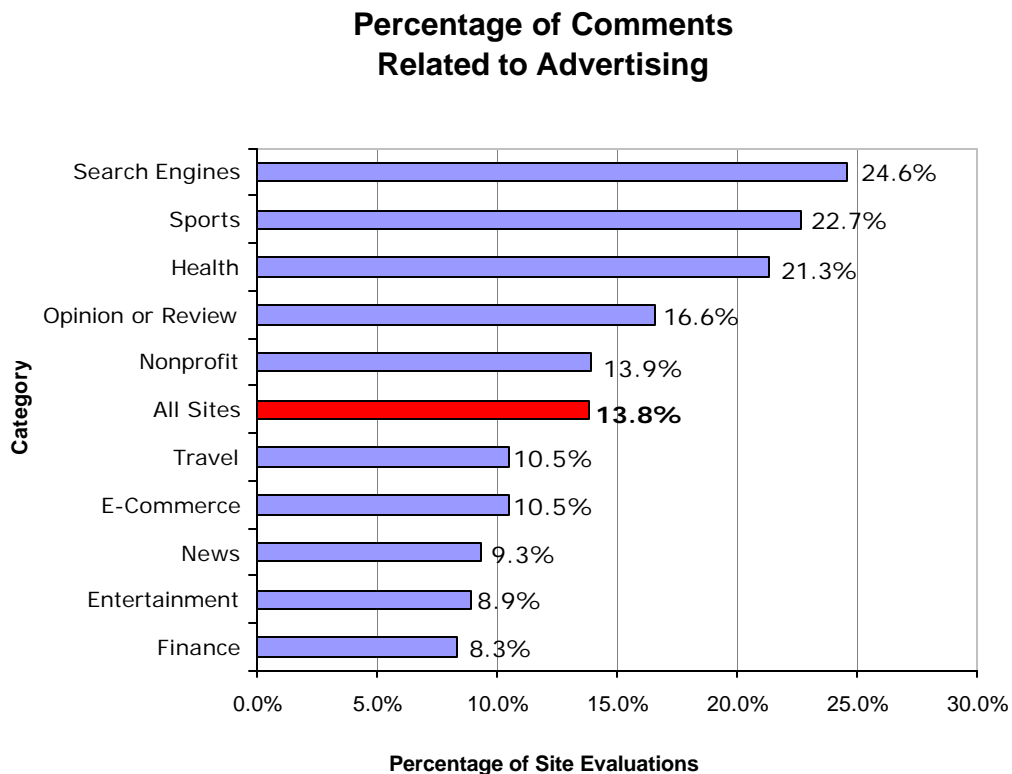
Figure 13: Percentage of comments related to advertising, by category.

What we find notable about Advertising

Not surprisingly, advertisements are especially harmful to a site's credibility if they lead a user to believe that the site's content is swayed or controlled by the advertisement or that the site is

connected to the advertisement, and is itself trying to sell the user something. The latter is a case of not providing a clear line between advertising and the site itself, which has been shown to harm credibility in previous studies (Fogg et al., 2001; Fogg et al., 2002; Princeton, 2002), and is intimately related to a site's connection with its sponsors. The comments make clear that some users are fully aware of potential sponsor influence. They expect a clear line between the content and advertisements so that sponsors do not compromise the site's information.

9. Information Bias – 11.6%

In 11.6% of the comments, people in this study talked about information bias when evaluating the credibility of the Web sites they were reviewing. Sample comments related to information bias are below:

- *This site is more commentary, and thus more opinionated. Accordingly, I liked it more, but the arguments are more disputable, and thus less "credible." —M, 39, District of Columbia*

- *The headlines and editorial copy didn't even make the pretense of being unbiased, something I think is critical for an organization or media outlet to call itself "news." —F, 30, New York*

- *It is credible because the opinions contained therein are based on unbiased research. —F, 32, Pennsylvania*

Information Bias comments, by site category

As shown in Figure 14, more than one-in-ten site evaluations (11.6%) commented on the perceived bias—positive or negative—of information for the site evaluated. This occurred with far greater frequency in the news (30.2%) and opinion or review (23.8%) categories, and with much less frequency in the finance (8.5%), search engines (3.8%), e-commerce (2.6%), and travel (1.9%) categories.

**Percentage of Comments
Related to Information Bias**

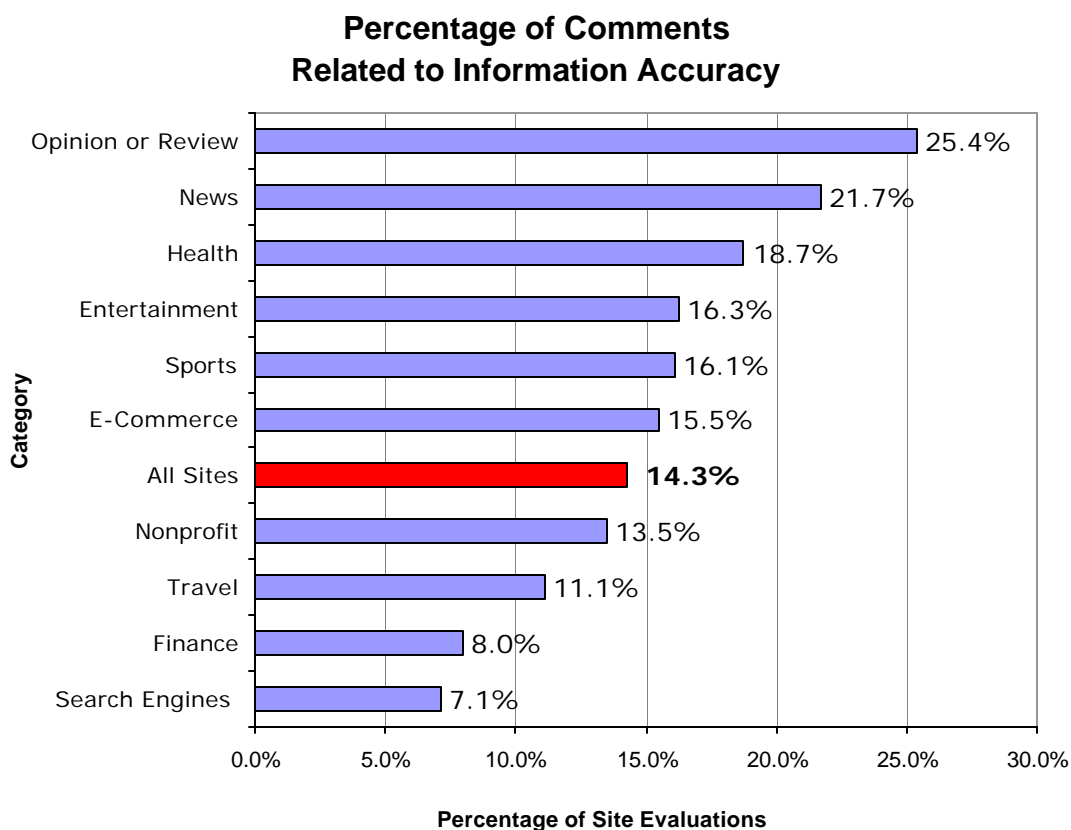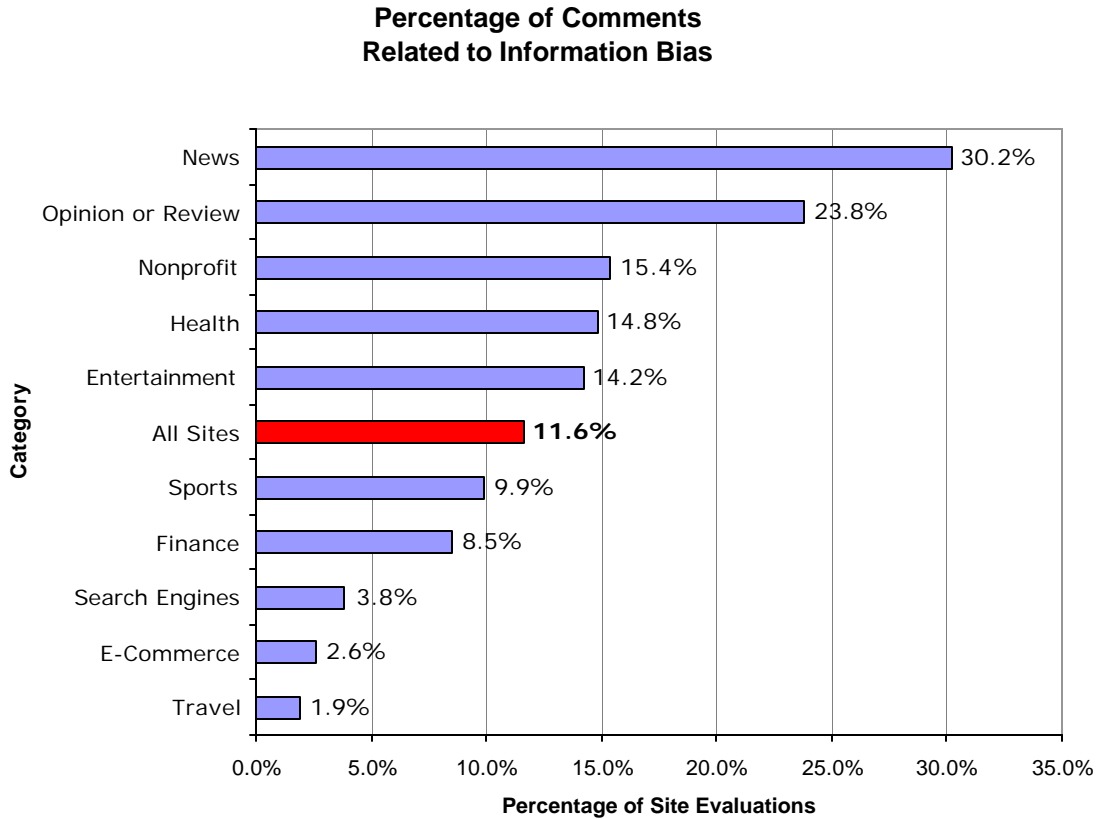

Figure 14: Percentage of comments related to information bias, by category.

What we find notable about Information Bias

The comments on this topic were not surprising: Web sites that are perceived to be biased are also perceived to lack credibility. As the data show, bias was highly prominent to users when evaluating sites dealing with news or sites providing opinions or reviews. In contrast, other site categories seemed not to trigger thoughts about information bias: search engines, e-commerce, and travel sites.

The participants' attention to bias in news sites should be encouraging to those who see critical thinking as essential for a healthy participatory democracy.

10. Writing Tone - 9.0% Overall

The tone of the writing on a Web site was something people noticed when assessing credibility. The participant comments include writing tone as a criterion 9.0% of the time, usually in a negative way. People generally said that sensationalism or slang hurt a site's credibility, while a straightforward, friendly writing style boosted credibility. Some sample comments relating to the tone of writing are below:

- *"Holy Crap" and other slang or poor language harms credibility. Credible people tend to understate. —F, 53, California*

- *"Cops" to search lake again vs. "Police", "8 hurt" vs. "8 injured", and so on. This site uses lower English and lowers its credibility. —M, 44, Texas*

- *Seemed less sensationalistic, more dry, and therefore more credible. —M, 38, Washington*

Writing Tone comments, by site category

As shown in Figure 15, nine percent of all site evaluations mentioned elements related to the tone or attitude conveyed by a site's content. Not surprisingly, this occurred in content categories in which a distinct writer's voice is more noticeable. For example, comments about the tone of writing occurred with greater frequency in the news (14.8%), nonprofit (12.9%), and sports (10.9%) categories, and with less frequency in the search engines (5.6%), and travel (5.2%) categories.

**Percentage of Comments
Related to Writing Tone**

Category	Percentage
News	14.8%
Nonprofit	12.9%
Sports	10.9%
Entertainment	10.5%
Finance	9.0%
All Sites	9.0%
Health	8.3%
E-Commerce	8.0%
Opinion or Review	7.2%
Search Engines	5.6%
Travel	5.2%

Percentage of Site Evaluations
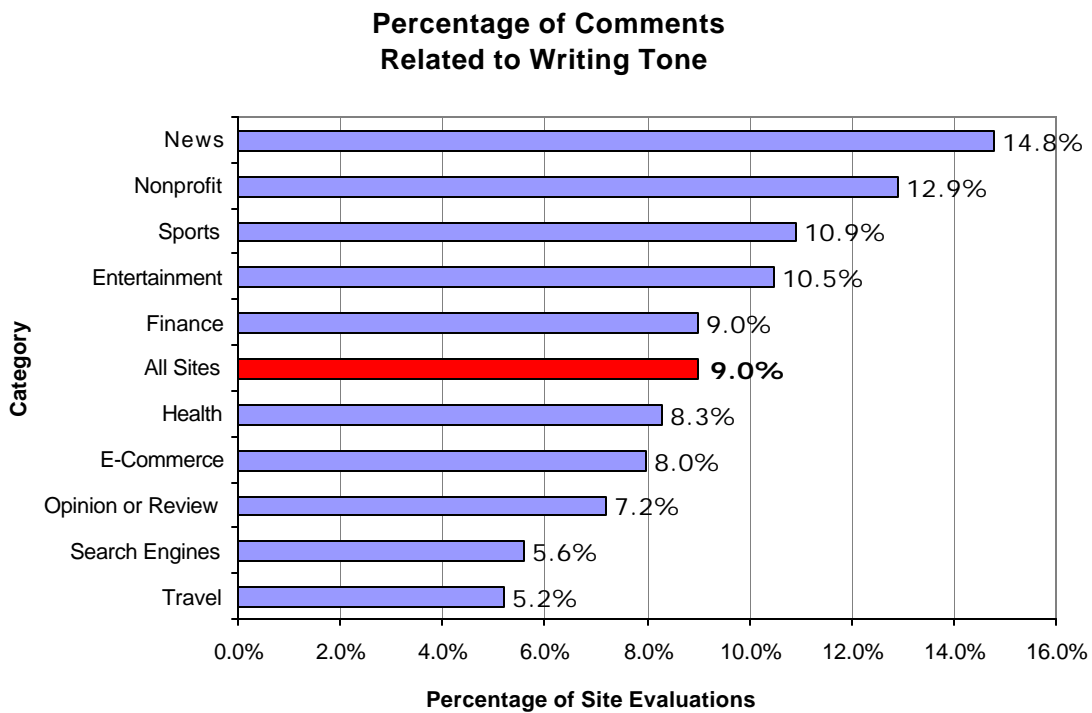
Figure 15: Percentage of comments related to writing tone, by category.

What we find notable about Writing Tone

The comments about tone were usually aimed at the particular kind of language or tone the site used in its writing, which in some cases resulted in a perceived bias in the site's content. That people noted the tone of the writing suggests a deeper level of involvement with a Web site, since it's hard to judge the tone without engaging with the content. In some sense these issues represent the second tier of credibility assessment: Once a user is past the look and feel of a site, she is likely to next assess the specific content. Not surprisingly, use of slang and profanity were clearly harmful to a site's credibility. Moreover, participants tended to have clear stances on the type of tone a credible site's content would take: *"Not impressed by the spinning. I like plain talk."*

Participants claimed to be able to detect a "sales pitch" or "marketing" language, and were generally skeptical of sites with an abundance of either. Many participants explicitly distinguished between content that seemed (or was proclaimed to be) factual, opinionated, "gossipy," religious, or overzealous.

11. Identity of Site Operator – 8.8% Overall

In 8.8% of the comments we collected, study participants talked about how site operators disclosed information about themselves. Comments coded in this category indicate that a Web site wins credibility points by giving information about the organization behind the Web site: who they are, what they do, and how to contact them. Sample comments are below:

- *This site contains a clear description of the goals and activities of this charity. There are contact names and e-mail/snail-mail addresses. There is even a phone number. —F, 44, Washington*

- *This site might be a good place to start, but I don't really know what its mission is— especially for a for-profit venture. —M, 34, Connecticut*

Identity of Site Operator comments, by site category

Figure 16 shows that in general, site evaluators did not seem to focus much on the company or organization identity when assessing a site's credibility. Less than 10 percent of site evaluations (or 8.8%) included comments about site identity. This occurred far more frequently in the nonprofit (28.9%) category , and far less frequently in the news (4.7%), travel (4.6%), and search engines (4.3%) categories.

Percentage of Comments Related
to Identity of Site Operator
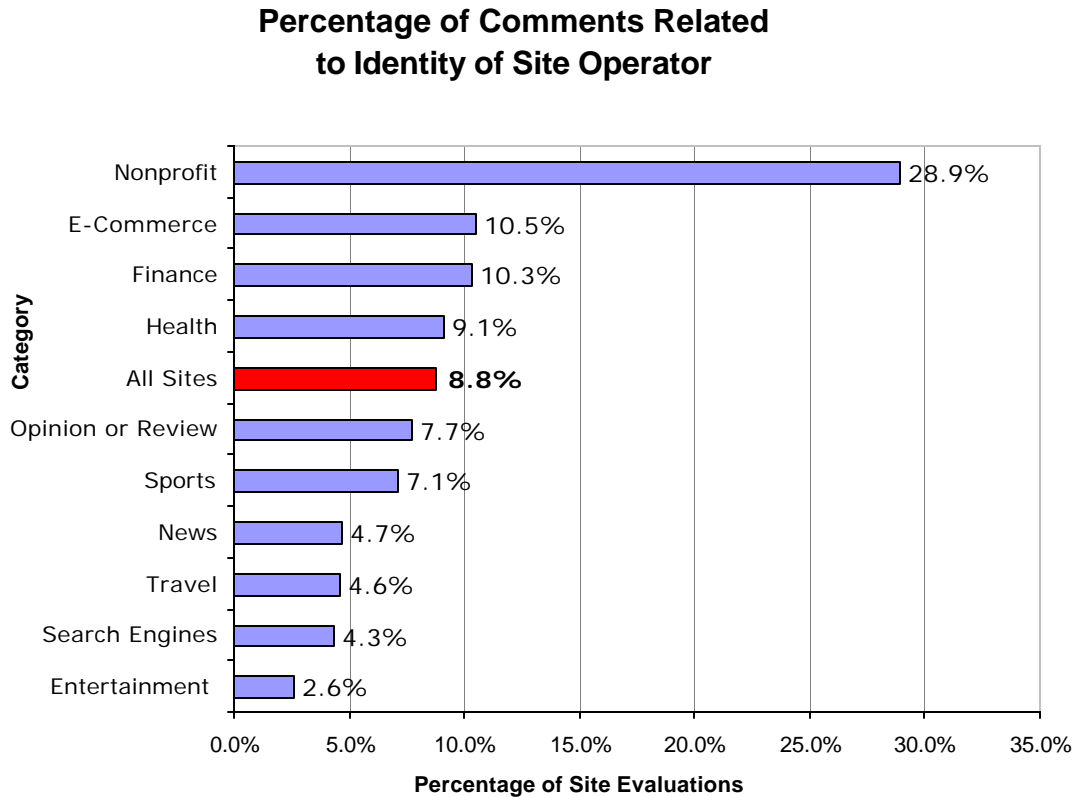
Figure 16: Percentage of comments related to identity, by category.

What we find notable about Identity of Site Operator

The comments from this study suggest that Web sites win credibility by clearly disclosing the people and the organization behind the site. This finding is consistent with previous studies on Web credibility (Fogg et al., 2000; Fogg et al., 2001; Fogg et al., 2002; Princeton, 2002).

What's most interesting in this part of the data is how nonprofit Web sites scored. The credibility of nonprofit-organization Web sites depends more directly on demonstrating that there are real people and a genuine organization behind the site than for any of the other site categories investigated in this study. Many comments about the nonprofit sites questioned the use of donated money. It seems clear that nonprofit Web sites are held to higher standards regarding being up-front about site operator identity.

12. Site Functionality - 8.6% Overall

While study participants experienced the functionality (or lack of it) whenever they visited a Web site, the comments talking about credibility included issues of site functionality 8.6% of the time,

usually in a negative way: The site was down, links were broken, search features were not helpful. The functionality of a site, whether or not under the direct control of the site operator, affected the perceived credibility of the site. Sample comments are below:

> • *The command lines which appear at the top—a bug—make it feel like no one is watching, taking care of the site. —F, 35, California*
>
> • *Biggest complaint is the poor search facility. A search produces only three items. —M, 50, California*

Site Functionality comments, by site category

As shown in Figure 17, less than 10 percent (or 8.6%) of all site evaluations made comments about a site's functionality, which includes technical performance and the services a site offers. Perhaps not surprisingly, this occurred with far greater frequency in the search engines (20.5%) category, and with less frequency in the e-commerce (6.6%) and news (5.1%) categories.

**Percentage of Comments Related
to Site Functionality**

Category	Percentage of Site Evaluations
Search Engines	20.5%
Entertainment	12.6%
Travel	12.1%
Sports	10.4%
All Sites	**8.6%**
Health	8.3%
Nonprofit	7.7%
Finance	7.6%
Opinion or Review	7.2%
E-Commerce	6.6%
News	5.1%
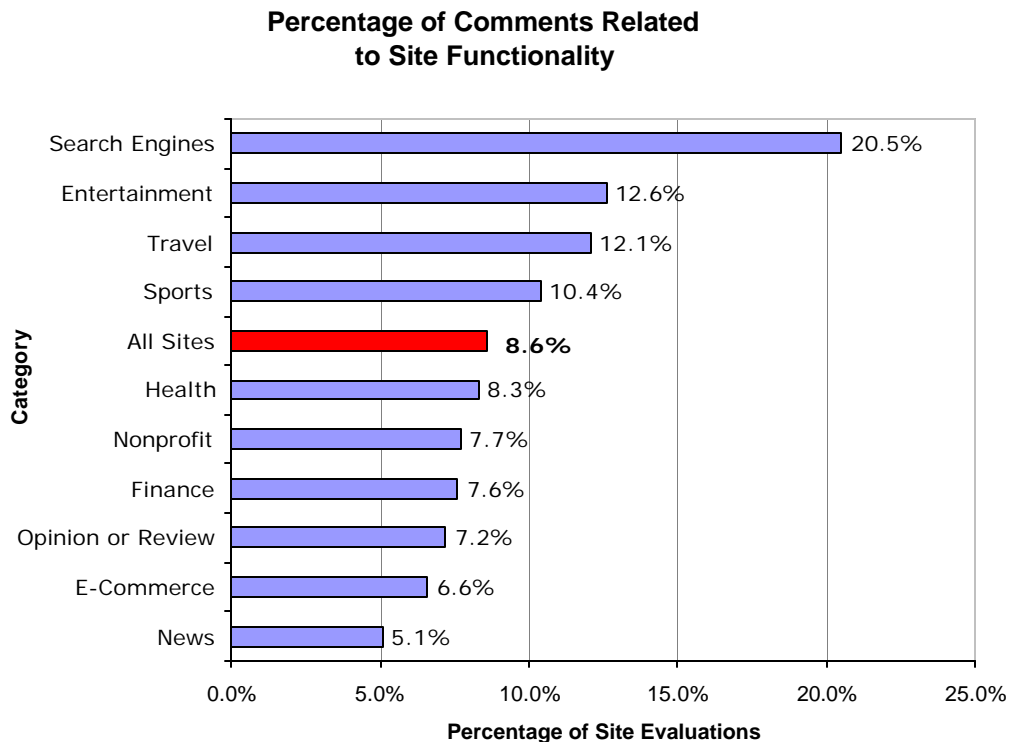
Figure 17: Percentage of comments related to functionality, by category.

What we find notable about Site Functionality

The most utilitarian of categories in this study—search engines—received the most comments about functionality. People seemed to see these sites as tools, and people brought expectations of functionality into their credibility evaluations. In other words, for search engines Web sites (and to a smaller extent Web sites about entertainment and travel) people seem to ask the question, "What can you do for me?" If people were impressed with what the site offered in terms of functionality, they also assessed it to be credible.

13. Customer Service – 6.4% Overall

We created a category called "Customer Service" so we could account for comments people made about the perceived relationship between the company and the end user. In other words, the comments in this category are about how the sponsoring organization operates and, especially, how the organization treats customers along the way. People in our study commented on these customer-service issues 6.4% of the time. Sample comments are below:

- *This site seemed to have less accountability to its customers on the items that can be purchased. —F, 46, Mississippi*

- *They spell out very clearly what one would get for becoming a member. —F, 34, Massachusetts*

Customer Service comments, by site category

As shown in Figure 18, less than 10 percent (or 6.4%) of all site evaluations commented on customer service issues or related business policies. Not surprisingly, these comments occurred with much greater frequency in the transactional-heavy categories (travel: 18.1%; e-commerce: 16.7%), and with far less frequency in the content-heavy categories (search engines: 1.0%; news: 0.8%; health: 0.4%).

**Percentage of Comments
Related to Customer Service**

Category	Percentage
Travel	18.1%
E-Commerce	16.7%
Nonprofit	8.2%
Opinion or Review	7.2%
All Sites	**6.4%**
Finance	6.3%
Search Engines	1.0%
News	0.8%
Health	0.4%
Sports	0.0%
Entertainment	0.0%

Percentage of Site Evaluations
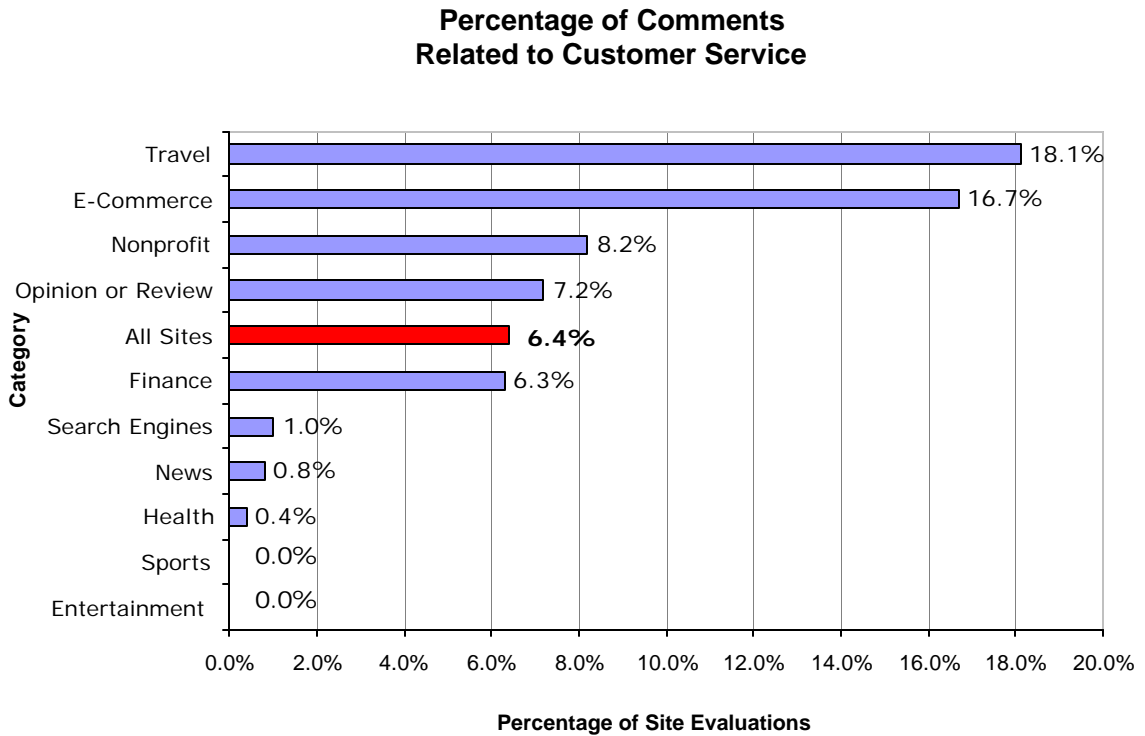
Figure 18: Percentage of comments related to customer service, by category.

What we find notable about Customer Service

Overall, the comments said that clear and straightforward explanations of a company's business practices and fees enhanced site credibility. But when the operations of a company were not clear, then the site lost credibility.

The data show that people noticed issues of customer service most often when examining sites dealing with travel and e-commerce. This makes sense. These sites are highly transactional, and provide services for users, not just information. In contrast, site categories that are more exclusively about information—such as sports, entertainment, news, or health—received few comments about customer service. The marked difference between information and service sites leads us to speculate that two main subclasses of credibility elements exist: one that applies to information sites and another that applies to service sites. Making this distinction could be helpful in future Web credibility studies.

14. Past Experience with Site – 4.6% Overall

In assessing the credibility of the sites in this study, people sometimes drew on their past experiences with a site to reach a conclusion. This occurred in 4.6% of the comments we collected. In most comments of this nature, past experience with a site boosted its credibility—but not always. A negative previous experience with a site led to a lower credibility evaluation. Sample comments are below:

> - *I've used this site before and it did not meet my expectations. —F, 50, Washington*
>
> - *I have used it frequently and find it very useful. —F, 50, Missouri*

Past Experience with Site comments, by site category

As shown in Figure 19, less than 5 percent (4.6%) of all site evaluations commented on the user's previous experiences with the site under evaluation, whether good or bad. This occurred with greater frequency in the search engine (12.8%), news (9.0%), e-commerce (7.9%) and travel (6.2%) categories, and with less frequency in the health (2.1%) and finance (1.5%) categories.

**Percentage of Comments Related to
Past Experience with Site**
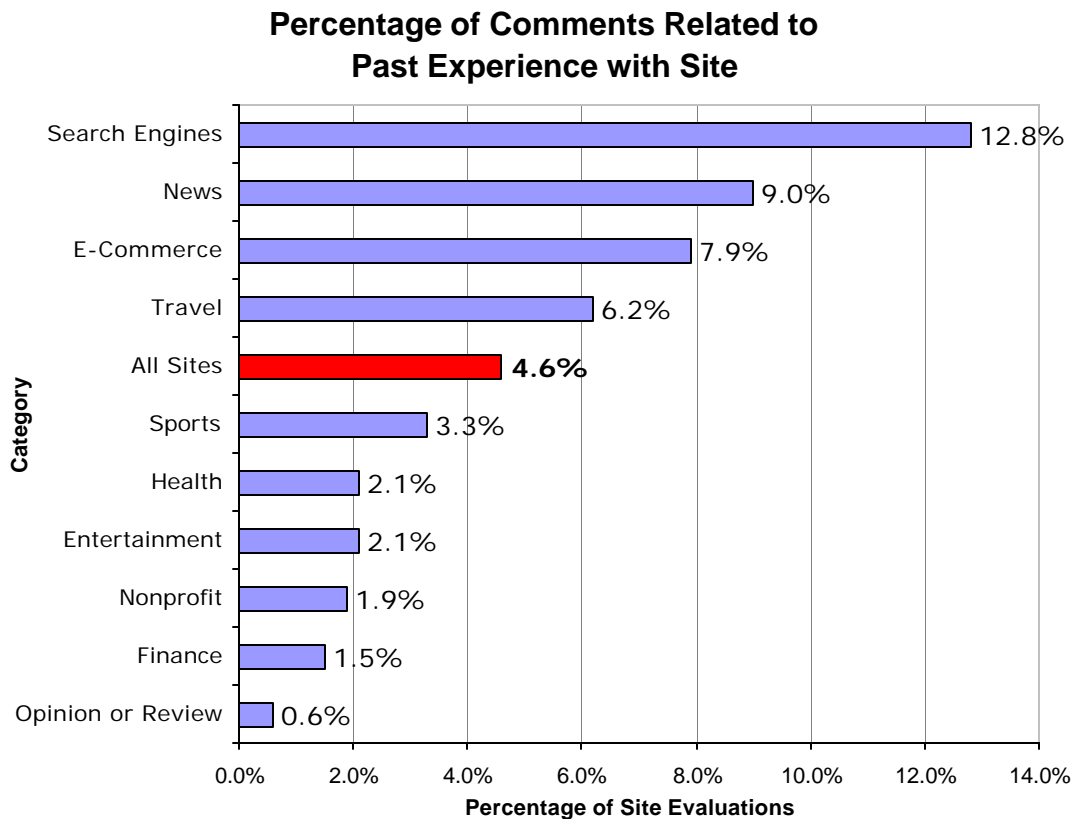
Figure 19: Percentage of comments related to past experience, by category.

What we find notable about Past Experience with Site

For this topic more than the others, the sites we chose to include in the research influenced the comments people made. Had we chosen obscure sites, we would have found few comments about

past experience—people saying they had never used the site before (this seemed to be the case with the sites we chose for opinion or review). The participants drew on their past experience in making their credibility assessments, especially when it came to search engine sites like Google and Yahoo! that people had used previously. We caution readers about interpreting the scores for this topic too strictly, since more than any other comment category, when it comes to past experience, the results would have been different had we selected other sites for this study.

15. Information Clarity – 3.7% Overall

In 3.7% of the comments, people in this study addressed the clarity of information (or the extent to which the information was easily understood) when evaluating a site's credibility. Sample comments are below:

- *Clear, concise information on home page—tells you what you need to know right away in an up-front manner. —F, 51, Australia*

- *Easy to understand. . . . I felt comfortable reading and understanding the information presented. —F, 33, New Jersey*

- *Very wordy and vague information. —F, 50, California*

Information Clarity comments, by site category

Figure 20 shows that a mere 3.7 percent of all site evaluations included comments relating to information clarity—that is, whether or not a site's content is clear and understandable. This occurred slightly more frequently in the finance (6.6%), health (6.0%), and search engines (4.2%) categories, and slightly less frequently in the nonprofit and sports categories (1.9%, each), as well as in the opinion or review (1.7%) and entertainment (1.6%) categories.

Percentage of Comments Related
to Information Clarity
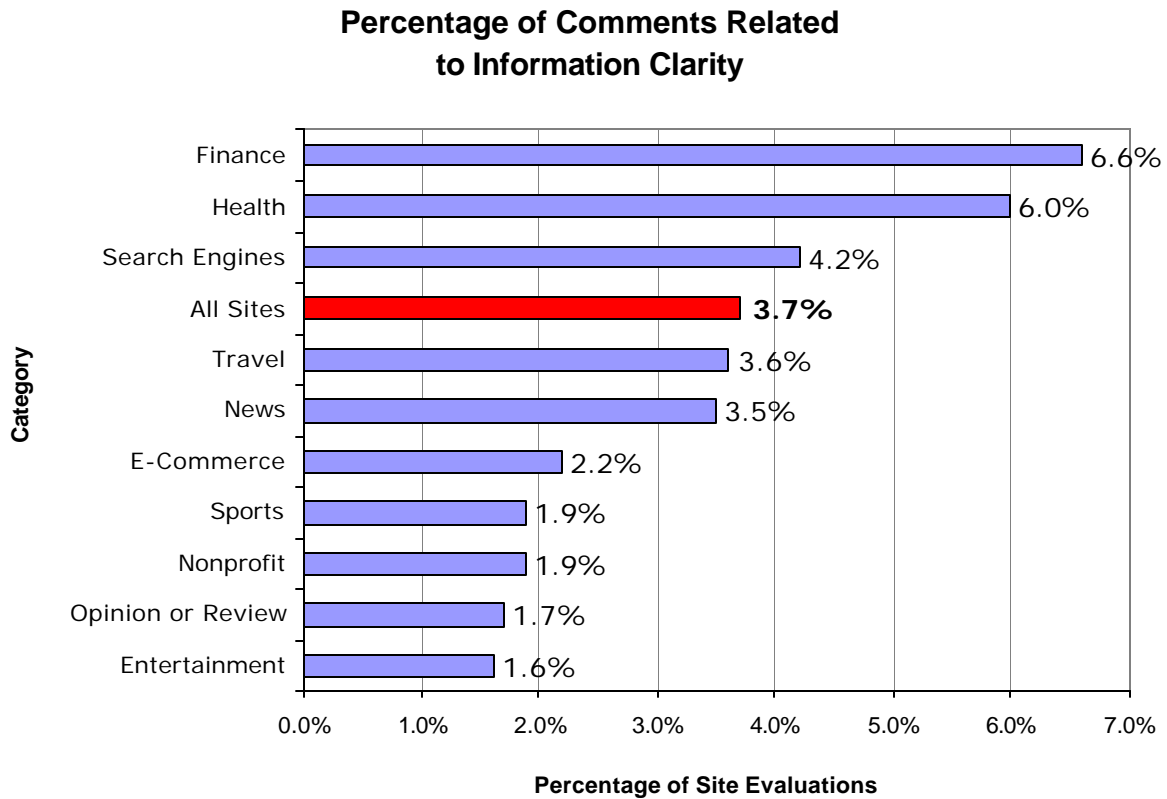
Figure 20: Percentage of comments related to information clarity, by category.

What we find notable about Information Clarity

We suspect that issues of information clarity figure more prominently into credibility evaluations than the data show here. In our view, presenting information clearly is as important to a positive user experience as having a good information structure, both of which contribute positively to credibility evaluations. The relatively small percentage of comments about information clarity could be due to a participant's not wanting to admit he or she didn't understand the information on the site (people don't like to admit they can't understand something). If these numbers are any indication, people were most confused by information on finance and health Web sites and were least confused by information on entertainment and opinion or review sites. Although the differences between the extremes is small (6.6% for finance sites vs. 1.6% for entertainment sites), this result makes sense, since one might expect entertainment sites to have the simplest information and finance sites to have the most complicated.

16. Performance on Test by User – 3.6% Overall

In relatively few cases, people devised their own tests in order to evaluate the credibility of a Web site in this study (e.g., performing a search on the site). The results of the test helped them form an assessment of the site credibility. Tests of this nature showed up in 3.6 percent of the comments, some samples of which are below:

> • *Had more credible hits when searching for biogeochemical data. —M, 55, Tennessee*
>
> • *I did not find hypothyroidism or thyroiditis on the Web site despite the commonality of the disease. —F, 41, New York*

Performance on a Test by User comments, by site category

As Figure 21 shows, less than four percent (or 3.6%) of all site evaluations referred to issues of performance testing—that is, short tests performed by consumers that helped them to evaluate a site's credibility. Not surprisingly, this occurred with greater frequency in areas in which speedy access to accurate information is perhaps more important (search engines: 13.8%; travel: 8.6%), and occurred with less frequency in areas in which timely delivery of information is of less concern (health: 3.4%; news: 2.2%; opinion or review: 1.7%). Consumers did not have access to active brokerage accounts for each finance site for the purposes of this study, which may account for the very low percentage of consumers who performed such tests in this category.

**Percentage of Comments Related
to Performance on Test by User**
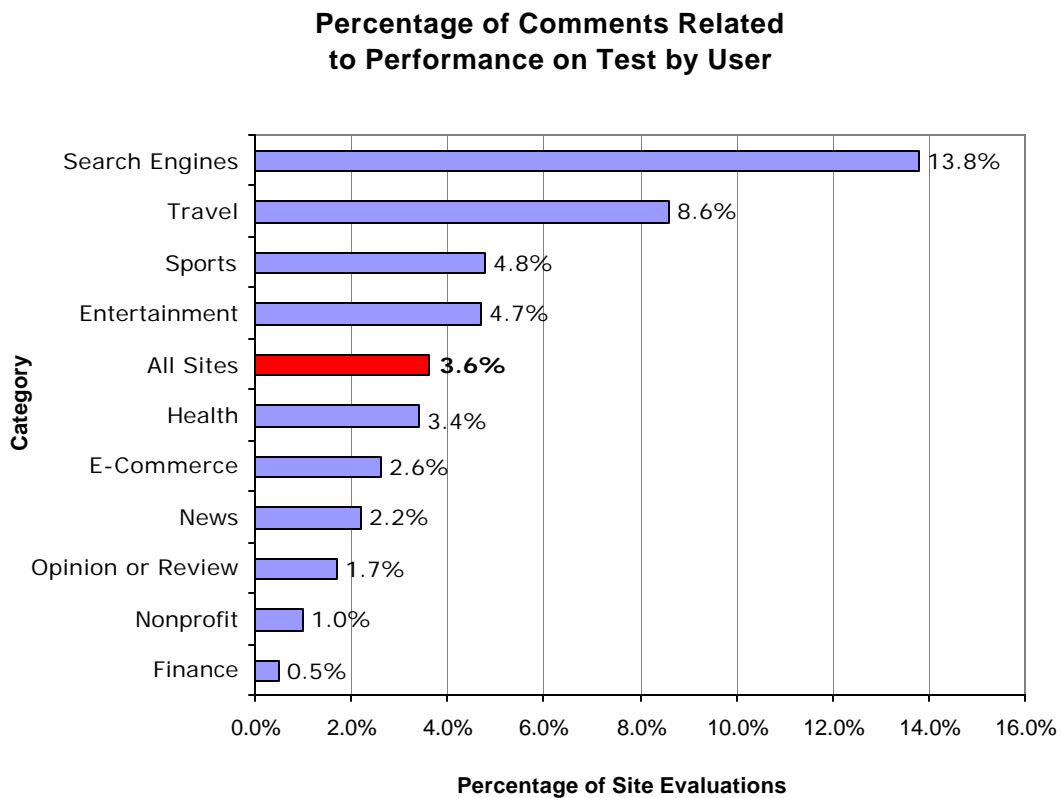
Figure 21: Percentage of comments related to performance on a test, by category.

What we find notable about Performance on Test by User

Although surface features tended to dominate many participants' responses, search engines and travel sites (where a user could go through the steps to set up a mock flight) allow the user to make assessments based on a simple test. It is not clear from the study how far users will typically go to test the credibility of a site in order to make an important decision (as opposed to making a decision to satisfy the requirements of a study). The content of the comments suggested that at least some people were quite familiar with testing a site in order to assess the site's credibility.

17. Readability – 3.6% Overall

A small number of people's comments, 3.6% of the total, mentioned the readability of the Web site as a credibility issue. Sites that were unreadable—for whatever reason—lost credibility points. Sample comments are below:

- *The format was easier for me to read. —M, 52, Pennsylvania*

- *The page is not easily readable. The font "Courier" contributed to this.—M, 40, Austria*

Readability comments, by site category

As illustrated in Figure 22, less than four percent (3.6%) of all site evaluations referred to comments about site readability—that is, how easy or hard it was for a user to read a site's Web pages. This occurred more frequently in the sports (5.7%), search engines and entertainment categories (3.8%, each), and less frequently in the news (3.0%), opinion or review (2.8%), and e-commerce (0.4%) categories. Nonprofit sites did not provoke a single comment related to readability issues.

**Percentage of Comments
Related to Readability**
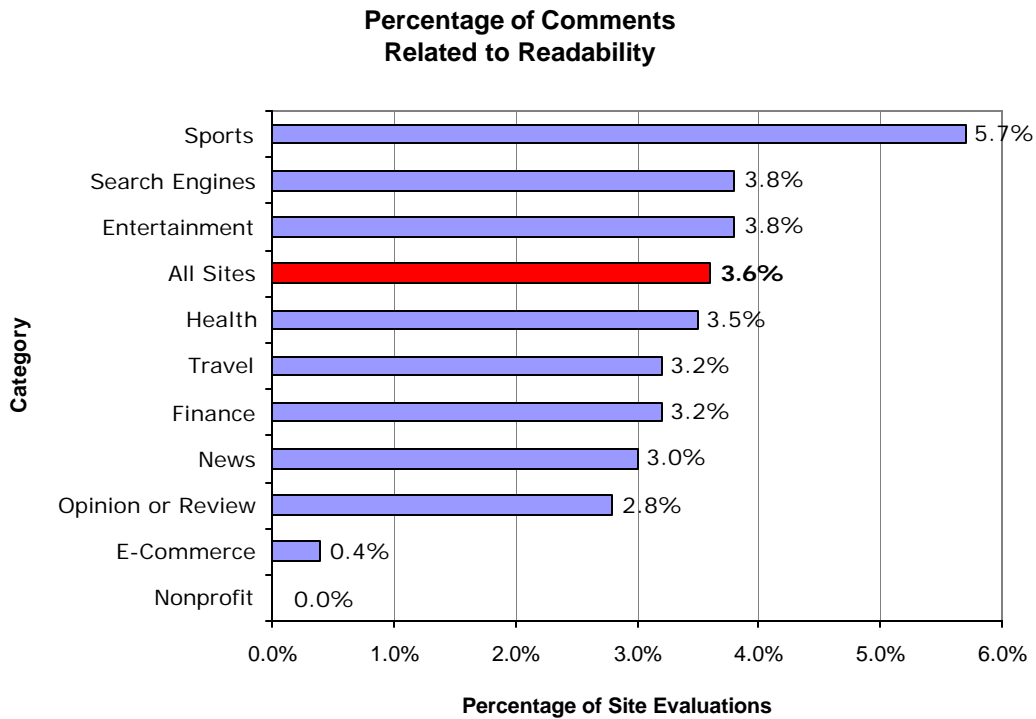
Figure 22: Percentage of comments related to readability, by category.

What we find notable about Readability

Not all Web sites have excellent visual design or information structure. That's understandable, since these qualities require talent and hard work. However, one would expect virtually all Web sites to have readable text. The data show that this was not always the case. In some situations people had trouble simply reading the site's content, frustrating users and damaging the site's credibility.

18. Affiliations – 3.4% Overall

In 3.4% of the comments, people claimed a site won credibility by showing an affiliation with an organization they knew and trusted. Below are sample comments:

- *Affiliation with a prestigious university adds to a sense of objectivity. —F, 27, California*

- *Credibility increased by seals of approval from known companies. —F, 21, Virginia*

Affiliations comments by, site category

As shown in Figure 23, financial affiliations, support, and partnerships did not affect site evaluators very much as they assessed the credibility of the sites in this study. A mere 3.4% of all evaluations included comments about this issue. This occurred slightly more frequently in the nonprofit (7.2%), health (5.6%), and search engines (4.8%) categories, and slightly less frequently in the travel (3.3%), finance (2.7%), e-commerce (2.6%), and news (1.7%) categories.

**Percentage of Comments
Related to Affiliations**
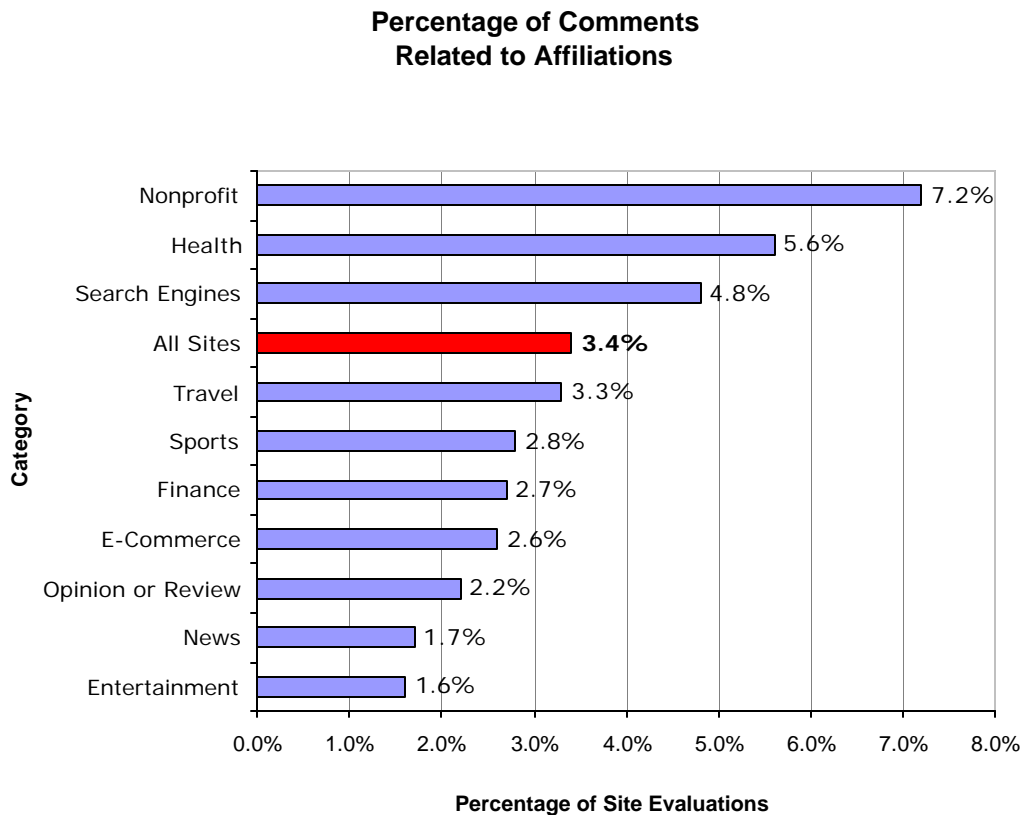
Figure 23: Percentage of comments related to affiliations, by category.

What we find notable about Affiliations

Although few comments mentioned issues of affiliation, it's interesting to see that nonprofit Web sites led the pack in these types of comments, followed by health sites. In these and other categories the comments showed that at least some people used a site's affiliation—good or bad—as a cue about whether or not the site was credible. An odd result here is that news sites generated so few comments about affiliation, suggesting that people in our study didn't view affiliation of news sites as a credibility issue

Overall discussion on comments

While this report could discuss the findings about the overall comments at length, we will focus on two areas in this concluding discussion: (1) why design look is so prominent, and (2) what topics may have been overlooked in this analysis.

Why is Design Look so prominent?

The results of this research show that the design look of Web sites was clearly the most prominent issue when people evaluated Web site credibility in this study. Almost 50 percent of comments about Web credibility contained something about the look of the site, either in general (e.g., "looks professional") or in specifics (the layout, the colors, etc.). The dominance of design look may be surprising at first. One might ask, 'Are people really so influenced by design look and not by more substantial issues?' The answer appears to be yes—at least in this setting.

It's important to note that *looking* good is often interpreted as *being* good—and being credible. Since at least the 1940s, social psychology research has shown that physically attractive sources (usually people) have been perceived to be credible sources (Benoy, 1982; Berscheid, 1981; Berscheid & Walster, 1974; Dion, Berscheid, & Walster, 1972; Eagly, Ashmore, Makhijani, & Longo, 1991). This basic human processing bias— "looking good is being good" —also seems to hold true for evaluating the credibility of Web sites, especially since design look is highly noticeable.

The research context is another factor that likely contributed to the overwhelming prominence of design look as a rationale for determining site credibility. Because people participated in this study to earn a donation for a nonprofit organization—not because of a deep personal interest or need—they did not likely have the motivation to process the Web sites deeply. According to the Elaboration Likelihood Model (ELM) (Petty & Cacioppo, 1986), without deep motivation, people will rely on peripheral cues, such as appearance, for making assessments. The ELM would predict that if the participants had *both* the ability and the motivation to scrutinize these sites carefully, the percentages in this study would change, with peripheral cues playing a less significant role.

Although people in this study were probably not deeply involved in the evaluation task, this is not a fatal flaw in the research. Our results are still valid. One could argue that people typically process Web information in superficial ways, that using peripheral cues is the rule of Web use, not the exception (for empirical research supporting this point, see Cockburn & McKenzie, 2001). From a user perspective there are many sites available, with the next piece of information just one click away. Even the words people use to describe Web use—"visiting sites" and "surfing the Web"—suggest lightweight engagement, not deep content processing. Research has yet to examine the relationship between engagement level and credibility assessments of Web sites.

An important follow-up study would be to manipulate the engagement level of the participants (e.g., finding health information for a loved one in dire need) and see how the comments about credibility change. Studies along these lines could show how involvement level affects what people notice when evaluating a site's credibility. Our hypothesis is this: Even for highly involved Web surfers, design look would still play a role in credibility, though it would be less dominant in overall evaluations.

The high value for design look is also due to the coding categories themselves. Design look may be the broadest category, causing many Web site elements to be coded as design look. In a future analysis of the comments, dividing the design look category into more focused categories could be illuminating. We suspect that some interesting findings are still concealed in the data because of the breadth of this category.

Areas that did not emerge in this research

We would be misleading readers if we implied that our analysis of the comments has brought to light all the interesting issues in our data. In all likelihood, our analysis has missed some key findings. For example, as the previous paragraph notes, our analysis categorized many issues into the design look category. A subsequent analysis could further refine this category to give additional insight into different aspects of design look.

Although we suspect other categories are also hiding key insights, it's difficult to pinpoint where the hidden insights are. We certainly have some suspicions about where to reanalyze the comments. Shown to be important in other research (Fogg et al., 2001; Fogg et al., 2002), the timeliness of a site's information did not surface as an important issue in this study. It's possible that comments about timeliness were missed because we initially had no category for coding this issue, or that these comments were coded as information accuracy (current information = accurate information). Another area that likely exists in the data but that did not surface in our analysis is that of information source—providing citations and references to show that the site content came from an expert source. The issue of information source proved to be important in the expert study performed in tandem with our study;[vi] the analysis for the tandem research showed that experts are much more tuned in to the source of information than are consumers.

Although our analysis probably did not reveal all issues related to the credibility of the sites in this study, there were topics we looked for in our analysis but did not find. For example, we coded the data for comments about privacy policy, and we found that people mentioned privacy policy in less than 1 percent of the comments. We also looked for comments about correcting false or misleading information and found no comments along these lines. These two issues apparently did not affect how our participants evaluated the credibility of Web sites in this study.

[vi]Stanford, J., Tauber, E., Fogg, B., & Marable, L., (2002). *Experts vs. Online Consumers: A Comparative Credibility Study of Health and Finance Web Sites*. Available online at www.consumerwebwatch.org.

Part 2: Results & Discussion – A Focus on Individual Web Site Categories

In this part of our Results & Discussion, we change our focus away from the overall comments in order to focus specifically on the site categories (health, news, etc.). Some of the information for this analysis may be gleaned by examining various charts in Part 1, but to do this readers would need to flip back through the report and compare charts on various pages. We hope to make this task easier by presenting the results one category at a time.

In the paragraphs that follow, we present data about how comments in one particular site category differed significantly from the comments from all the categories. For example, we point out how people's comments on the e-commerce sites differed from people's comments on all 100 sites. After we present what we see as notable differences in the comments (those that are more than 5 percent), we then present a new type of data: the credibility rankings of the sites.

A word about the credibility-ranking results

This study was designed to generate a credibility ranking for Web sites within each category. As discussed in the Methods section, these rankings may be interesting and provocative, but they are not definitive credibility assessments for an individual Web site. A credible Web site could end up with a low ranking if other sites in the same category were extremely credible sites. In other words, the ranking for a site depended entirely on the competition; if the competition were different, then the ranking would be different. Also, because some content categories were undoubtedly more competitive than others, the ranking score for Web sites cannot be compared across categories. And of course, these rankings reflect the views of those who happened to participate in this study.

As the tables below show, each site was evaluated at least 35 times and some sites as many as 89 times (total number of rankings: 5,242, from 2,684 completions of the study). Sites in the health and finance categories were ranked more often, since a study parallel to this one[4] focused on these two categories and we wanted to provide sufficient data for that project.

For each of the 10 tables, the first column represents the credibility ranking for the sites, with the site listed #1 as being the most credible. The value in the "average score" column is the mean score that the site received over the course of the study, as described in the Methods section. It was this score that determined a site's ranking.

The discussion below does not use the credibility comments to explain the ranking results (or vice versa), because we do not want people to read more into these rankings than is warranted. Our intent in the coming pages is to focus on a single Web site category and share two types of results that relate to that category. At times, links between the comments and rankings seem obvious; at other times the connection is not immediately apparent.

That said, we'll begin presenting and discussing the results for each Web site category one by one, in the following order:

- E-Commerce
- Entertainment
- Finance
- Health
- News
- Nonprofit
- Opinion or Review
- Search Engines
- Sports
- Travel

E-Commerce Web Sites: Credibility Results

This section presents what we learned about the credibility of e-commerce Web sites, starting with presenting our results about how the credibility comments for e-commerce sites differed from the overall averages, and then presenting the final credibility rankings of the 10 e-commerce sites.

Credibility comments about e-commerce Web sites: What stands out?

The data in our study show that e-commerce sites stand out from other types of sites in four ways. First, issues of name recognition and reputation were mentioned more often by people evaluating e-commerce sites, compared to the overall mean for this type of comment (25.9% compared to 14.1% overall). Next, comments about customer service were also relatively more frequent (16.7% compared to 6.4%). On the other side of the scale, compared to the overall mean, e-commerce sites received far fewer comments about information bias (2.6% vs. 11.6%). One final difference, not discussed earlier in this report, has to do with comments that our coders classified as "general suspicion." These comments would include things like "It just makes me suspicious," and "I'm always wary of these type of sites." These types of comments appeared in 9.4 percent of all the comments in this study. The "general suspicion" comments appeared more often when people evaluated e-commerce sites, in 17.2 percent of the comments people made.

Taken together, the data show that when people evaluated the credibility of e-commerce sites, they more frequently mentioned issues of customer service and name recognition and reputation as indicators of whether or not a site was credible. In addition, people approached e-commerce sites with more suspicion than other sites in this study.

Credibility rankings of e-commerce Web sites

Table 2 shows the final ranking of e-commerce sites in this study.

E-Commerce Web Sites

Final Ranking	Web Site Name	URL	Average Score	# of Times Ranked
1	Amazon	http://www.amazon.com	+0.42	69
2	Barnes & Noble	http://www.bn.com	+0.42	55
3	McMaster-Carr	http://www.mcmaster.com	+0.23	44
4	Cars.com	http://www.cars.com	+0.18	44
5	eBay	http://www.ebay.com	+0.11	56
6	Best Buy	http://www.bestbuy.com	+0.07	73
7	Buy.com	http://www.buy.com	-0.04	71
8	Dogwise	http://www.dogwise.com	-0.11	54
9	MTE Nutrition	http://www.mtenutrition.com/index.html	-0.52	54
10	ThymuSkin	http://www.thymuskin.com	-0.61	72

What average scores mean	+0.50 = judged as more credible in 75% of pairings 0.0 = judged as more credible in 50% of pairings -0.50 = judged as less credible in 75% of pairings

Table 2: Ranking and scores for e-commerce Web sites.

What's notable about e-commerce site rankings?

The scores and rankings for the e-commerce sites led to three observations from our team. First, big-name players Amazon and Barnes & Noble led the credibility rankings, in nearly a dead heat for the top spot (the difference in average scores is less than .01). The top placement of these two sites is not surprising, given the previous experience many people have had in dealing successfully with these companies (what has been called "earned credibility"). The surprise comes in seeing who landed in third place: McMaster-Carr—a relative unknown entity compared to others who ranked high in this category. The McMaster-Carr site has relied on its own merits—not on a public relations campaign or a big reputation—in conveying high levels of credibility. This should be good news for people who want to set up an e-commerce site, or any other kind of site, but are faced with competitors who own big brand names and wield significant marketing budgets. At least when it comes to evaluations of Web credibility, the high ranking of McMaster.com shows that a site can win credibility on its own merits.

The second notable result is the mediocre ranking of eBay, a bit of a puzzling outcome given that eBay is widely known and used.

Our third observation is that two e-commerce sites did quite poorly in the credibility rankings: MTE Nutrition and ThymuSkin. When it comes to establishing Web credibility, these sites might serve as models about what *not* to do.

Entertainment Web Sites: Credibility Results

This section presents what we learned about the credibility of entertainment Web sites, starting with our results about how the credibility comments for entertainment sites differed from the overall averages, and then presenting the final credibility rankings of the 10 entertainment sites.

Credibility comments about entertainment Web sites: What stands out?

The data tell quite a different story for entertainment sites than for e-commerce sites. In three areas entertainment sites differed substantially from the overall averages. First, when evaluating the credibility of entertainment sites, people commented on company motive relatively less frequently (9.4% vs. 15.5% overall). Next, people also commented much less often about the identity of site operator (2.6% vs. 8.8%). Finally, people never commented about the customer service of an entertainment site when evaluating credibility (0% vs. 6.4%).

These data do not say that motive, identity, and customer service do not contribute to the credibility assessment of entertainment sites. The data simply show that these things may matter less than for other types of Web sites. In general it could be that the credibility expectations for entertainment Web sites are lower than for other types of sites. This makes sense, since entertainment issues are rarely as important to people as issues involving their money or health.

Credibility rankings of entertainment Web sites

Table 3 shows the final ranking of entertainment sites in this study.

Entertainment Web Sites

Final Ranking	Web Site Name	URL	Average Score	# of Times Ranked
1	Citysearch	http://www.citysearch.com	+0.58	38
2	Entertainment Weekly	http://www.ew.com	+0.49	43
3	Internet Movie Database	http://www.imdb.com	+0.38	42
4	Yahoo! Entertainment	http://entertainment.yahoo.com	+0.18	44
5	Fandango	http://www.fandango.com	+0.17	48
6	E! Online	http://www.eonline.com	+0.06	47
7	Moviefone	http://www.moviefone.com	-0.21	48
8	ChristianAnswers.net	http://christiananswers.net/spotlight	-0.23	39
9	Ain't it Cool News	http://www.aint-it-cool-news.com	-0.50	44
10	Pazsaz.com	http://www.pazsaz.com	-0.76	49

What average scores mean	+0.50 = judged as more credible in 75% of pairings 0.0 = judged as more credible in 50% of pairings -0.50 = judged as less credible in 75% of pairings

Table 3: Ranking and scores for entertainment Web sites.

What's notable about entertainment-site rankings?

Three entertainment Web sites clustered at the top of the credibility rankings: Citysearch, Entertainment Weekly, and Internet Movie Database. While the comments reveal that Entertainment Weekly was rated as credible largely for its brand recognition (thanks to the magazine of the same name), the other two high-ranking entertainment sites were viewed as credible because of their functionality. Citysearch and Internet Movie Database provided study participants with reliable information about local events and movies.

The other notable finding in this category is the extremely low score for Pazsaz.com, ranking even lower than Ain't It Cool News, a site that we hypothesized would end up being evaluated as the least credible in the entire study. We were wrong: Pazsaz.com ranked even lower. And the comments from the participants tell the story: Often the Pazsaz.com site failed to load, giving users an error instead of content, making it easy for people to rank Pazsaz as less credible than the site it was paired against. This result indicates that Web users do not forgive this type of technical failure when evaluating credibility.

Finance Web Sites: Credibility Results

This section presents what we learned about the credibility of finance Web sites, starting with our results about how the credibility comments for finance sites differed from the overall averages, and then presenting the final credibility rankings of the 10 finance sites.

Credibility comments about finance Web sites: What stands out?

Five areas in the data suggest how people may evaluate the credibility of finance Web sites differently from other site categories in our study. When evaluating finance sites, people commented relatively less often on information focus (18.9% vs. 25.1% overall), information accuracy (8.0% vs. 14.3%), and advertising (8.3% vs. 13.8%). However, people commented more frequently in three areas: design look (54.6% vs. 46.1%), company motive (21.0% vs. 15.5%) and name recognition and reputation (21.8% vs. 14.1%).

Taken together, the credibility landscape for finance sites shows that people focused relatively more on issues of trustworthiness (motives and reputation) and focused relatively less on issues of expertise. It may be that people in our study did not have the expertise to evaluate issues of information focus or accuracy of finance sites, so they relied more heavily on other areas: perceived company motivation and reputation and design look.

Credibility rankings of finance Web sites

Table 4 shows the final ranking of finance sites in this study.

Finance Web Sites

Final Ranking	Web Site Name	URL	Average Score	# of Times Ranked
1	Schwab	http://www.schwab.com	+0.57	89
2	Fidelity	http://www.fidelity.com	+0.28	67
3	ShareBuilder	http://www.sharebuilder.com	+0.20	75
4	Merrill Lynch	http://www.ml.com	+0.15	75
5	Domini Social Investments	http://www.domini.com	+0.12	68
6	E-Trade	http://us.etrade.com/e/t/home	-0.16	76
7	Scottrade	http://www.scottrade.com/	-0.20	80
8	ChoicePicks	http://www.choicepicks.com	-0.22	64
9	Christian Brothers Investment Services	http://www.cbis-fsc.com/index.asp	-0.39	72
10	Stocks at Bottom	http://www.stocksatbottom.com/	-0.43	80

What average scores mean	+0.50 = judged as more credible in 75% of pairings 0.0 = judged as more credible in 50% of pairings -0.50 = judged as less credible in 75% of pairings

Table 4: Ranking and scores for finance Web sites.

What's notable about finance-site rankings?

Schwab emerged as the clear credibility leader in rankings of the finance category, with a final score significantly better than the #2 site, Fidelity.

In our view, however, the real story in the finance category is the site that came in at number three: ShareBuilder. What is ShareBuilder? And how did its Web site compete successfully against sites with big brand names? As in the case of McMaster-Carr in the e-commerce category, the success of ShareBuilder suggests that a Web site can be designed to win credibility on its own merits. While not the focus on this report, an analysis of the ShareBuilder.com site leads our research team to propose this site is doing many things right to build credibility, from disclosure issues to design details. At #3 in the rankings, the ShareBuilder Web site may represent the most significant credibility achievement in the finance category.

Health Web Sites: Credibility Results

This section presents what we learned about the credibility of health Web sites, starting with our results about how the credibility comments for health sites differed from the overall averages, and then presenting the final credibility rankings of the 10 health sites.

Credibility comments about health Web Sites: What stands out?

When it comes to health Web sites, the data in our study show that this category stands out in four ways. First, when evaluating the credibility of health sites, people commented much more often on issues of information focus (33.0% vs. 25.1% overall) and information usefulness (20.5% vs. 14.8%). Looking more deeply at the data (not presented in this study), we find that these additional comments tended to be positive. In other words, there were a substantial number of comments saying that health Web sites won credibility by providing information that people found to be useful and to have a good focus. The data also show that people commented more often about advertising on health Web sites, compared to people who evaluated sites in other categories (21.3% vs. 13.8%). But customer service on health Web sites was rarely mentioned (0.4% vs. 6.4%).

When viewed as a whole, the data suggest that people evaluating the credibility of health Web sites pay relatively more attention to the focus and usefulness of the information. What people find in these areas apparently becomes a significant indicator of the site's credibility.

Credibility Rankings of Health Web sites

Table 5 shows the final ranking of health sites in this study.

Health Web Sites

Final Ranking	Web Site Name	URL	Average Score	# of Times Ranked
1	MayoClinic.com[vii]	http://www.mayohealth.org	+0.54	61
2	Intelihealth	http://www.intelihealth.com	+0.44	54
3	NIH	http://www.nih.gov	+0.43	42
4	MDChoice	http://www.mdchoice.com	+0.07	73
5	Dr. Koop	http://www.drkoop.com	+0.03	60
6	WebMD	http://www.webmd.com	0.00	50
7	HealthWorld Online	http://www.healthy.net	-0.36	47
8	Dr. Weil	http://www.drweil.com	-0.37	51
9	Health Bulletin	http://www.healthbulletin.org	-0.47	49
10	Oxygen.com Health and Fitness	http://www.oxygen.com/health	-0.51	45

What Average Scores Mean	+0.50 = judged as more credible in 75% of pairings 0.0 = judged as more credible in 50% of pairings -0.50 = judged as less credible in 75% of pairings

Table 5: Ranking and scores for health Web sites.

What's notable about health site rankings?

In the current study, three Web sites cluster at the top of the Web credibility rankings: MayoClinic.com, Intelihealth, and NIH—all highly credible sites. While there may be no practical difference in credibility among these three top health sites, the sites in this top cluster are clearly viewed as more credible by our participants than the other seven sites in our study. These three sites lead the rest of the Web sites by a significant margin.

On the other end of the credibility spectrum, four Web sites cluster at the bottom. However, what's more notable is how a third cluster of high-profile dot-com Web sites—MDChoice, Dr. Koop, and WebMD—landed squarely in the middle of the rankings, viewed as neither high nor low in credibility compared to the other sites in the study. From a credibility standpoint, the approach these three companies have taken is not working as well as the approach by Intelihealth.

[vii] To distinguish from MayoClinic.org, which is the Web site for the Mayo Foundation and its associated clinics and hospitals, we refer to MayoClinic.com with the .com succeeding its name throughout this document.

News Web Sites: Credibility Results

This section presents what we learned about the credibility of news Web sites, starting with our results about how the credibility comments for news sites differed from the overall averages, and then presenting the final credibility rankings of the 10 news sites.

Credibility comments about news Web sites: What stands out?

News is a Web site category that differed from the overall averages in many areas, suggesting that people evaluate the credibility of news sites quite differently than other types of sites. The data show that issues relating to information received relatively more attention when people evaluated sites in the news category, compared to the overall averages: <u>information focus</u> (31.9% vs. 25.1% overall), <u>information accuracy</u> (21.7% vs. 14.3%), and—most dramatic of all—<u>information bias</u> (30.2% vs. 11.6%). Other areas that figured more prominently in people's comments about news sites were issues relating to <u>name recognition and reputation</u> (19.1% vs. 14.1%) and <u>writing tone</u> (14.8% vs. 9.0%). Some areas received relatively less attention when people evaluated the credibility of news Web sites. <u>Design look</u> was mentioned less often (39.6% vs. 46.1%), and issues relating to <u>customer service</u> were rarely mentioned (0.8% vs. 6.4%). Interestingly enough, compared to the overall averages, news Web sites received far fewer comments about underlying <u>company motive</u> (5.9% vs. 15.5%) and fewer comments that conveyed <u>general suspicion</u> (4.3% vs. 9.4%).

Viewed as a whole, the credibility picture for news sites is intriguing—and perhaps contradictory. On one hand people evaluating news sites seem quite tuned in to issues of information bias. On the other hand, people tended not to comment on issues relating to underlying company motive, an area that would seem to be related to information bias. Perhaps in evaluating the credibility of these sites, people could have easily commented on information bias but found it harder to pinpoint or articulate the motives behind the information, leading to fewer comments of this type.

Credibility rankings of news Web sites

Table 6 shows the final ranking of news sites in this study.

News Web Sites

Final Ranking	Web Site Name	URL	Average Score	# of Times Ranked
1	The New York Times	http://www.nytimes.com	+0.53	59
2	Yahoo! News	http://news.yahoo.com	+0.44	50
3	CNN	http://www.cnn.com	+0.42	55
4	Time	http://www.time.com	+0.10	49
5	MSNBC	http://www.msnbc.com	-0.06	47
6	Crosswalk.com	http://news.crosswalk.com	-0.19	47
7	SF Gate	http://www.sfgate.com	-0.27	52
8	Drudge Report	http://www.drudgereport.com	-0.30	57
9	Telluride Gateway	http://www.telluridegateway.com	-0.36	47
10	Workers World	http://www.workers.org/ww	-0.45	47

What Average Scores Mean	
+0.50 =	judged as more credible in 75% of pairings
0.0 =	judged as more credible in 50% of pairings
-0.50 =	judged as less credible in 75% of pairings

Table 6: Ranking and scores for news Web sites.

What's notable about news site rankings?

In the news sites credibility rankings, three sites scored much higher than the rest: The New York Times on the Web, Yahoo! News, and CNN. The surprise here is Yahoo! News. In our opinion, people often consider The New York Times to be a leader in print news and CNN a leader in TV news. But Yahoo! is neither based in print nor on TV, and it's not primarily a news organization. For these reasons and more, it's remarkable how well Yahoo! scored, probably winning credibility points because of the strength of its online brand and the diversity of its news site offerings.

For our research team, another intriguing result is how poorly MSNBC fared—ending with a negative credibility score. The high-profile MSNBC is most closely ranked to Crosswalk.com, a small news site with a religious bias.

Nonprofit Web Sites: Credibility Results

This section presents what we learned about the credibility of nonprofit Web sites, starting with our results about how the credibility comments for nonprofit sites differed from the overall averages, and then presenting the final credibility rankings of the 10 nonprofit sites.

Credibility comments about nonprofit Web sites: What stands out?

The data tell an interesting story about nonprofit Web sites, since the comments about these sites differ from the overall comments in provocative ways. What did people focus on when evaluating the credibility of nonprofit Web sites? They focused more on the identity of the site operator (28.9% vs. 8.8% overall) and the underlying company motive (20.2% vs. 15.5%). In addition, more than for any other site category, people evaluating the credibility of nonprofit sites made comments that were coded as "general suspicion," suggesting that the level of suspicion for nonprofit sites was far above that of any other type of Web site (22.6% for nonprofit vs. 9.4% overall).

While nonprofit sites are under a high level of scrutiny for trustworthiness, the data suggest they are not held to high standards in other areas. People evaluating the credibility of nonprofit sites commented less frequently on issues of design look (39.4% vs. 46.1%), information design/structure (18.2% vs. 28.5%), and information focus (17.8% vs. 25.1%).

Taken together, the data suggest that when people evaluate the credibility of nonprofit Web sites, they focus relatively more on issues of who is behind the site and relatively less on how competent the Web site is in terms of design or information. The data also suggest that despite having been recruited through nonprofit organizations, people in this study were rather suspicious of the Web sites they found in this category.

Credibility rankings of nonprofit Web sites

Table 7 shows the final ranking of nonprofit sites in this study.

Nonprofit Web Sites

Final Ranking	Web Site Name	URL	Average Score	# of Times Ranked
1	American Red Cross	http://www.redcross.org	+0.72	36
2	Aim High	http://www.aimhigh.org	+0.23	39
3	Liberty Unites	http://www.libertyunites.org	+0.17	58
4	MISS Foundation	http://www.missfoundation.org	+0.14	49
5	Compassion	http://www.compassion.com	+0.08	48
6	Save the Earth	http://www.savetheearth.org	+0.05	42
7	The Hunger Site	http://www.thehungersite.com	-0.06	47
8	Comic Book Legal Defense Fund	http://www.cbldf.org	-0.29	45
9	DogScouts	http://www.dogscouts.com	-0.32	44
10	World Peace Endowment	http://www.worldpeaceendowment.org	-0.70	40

What Average Scores Mean	
+0.50 =	judged as more credible in 75% of pairings
0.0 =	judged as more credible in 50% of pairings
-0.50 =	judged as less credible in 75% of pairings

Table 7: Ranking and scores for nonprofit Web sites.

What's notable about nonprofit site rankings?

The American Red Cross scored much higher on credibility than other Web sites in the nonprofit category, dominating its category more than any other site in the entire study. In retrospect, including the American Red Cross may have been a mistake, because its domination could have suppressed other interesting results. With the exception of how poorly the World Peace Endowment was rated on credibility (another example of what *not* to do), there is nothing particularly remarkable about the credibility scores of the remaining eight nonprofit Web sites.

Opinion or Review Web Sites: Credibility Results

This section presents what we learned about the credibility of opinion or review Web sites, starting with our results about how the credibility comments for opinion or review sites differed from the overall averages, and then presenting the final credibility rankings of the 10 opinion or review sites.

Credibility comments about opinion or review Web sites: What stands out?

Compared to the overall averages, people commented more frequently on three issues when evaluating the credibility of the opinion/review sites: information bias (23.8% vs. 11.6% overall), information accuracy (25.4% vs. 14.3%) and, to a lesser extent, underlying company motive (22.1% vs. 15.5%). People commented less frequently about the design look of opinion or review Web sites (38.1% vs. 46.1). Curiously enough, we found no comments about the name recognition and reputation of these sites (0% vs. 14.1%), even though we included at least one big brand name in this category: Epinions.com. This last finding is the most striking in this category.

Credibility rankings of opinion or review Web sites

Table 8 shows the final ranking of opinion or review sites in this study.

Opinion or Review Web Sites

Final Ranking	Web Site Name	URL	Average Score	# of Times Ranked
1	Consumer Search	http://www.consumersearch.com	+0.44	39
2	Epinions	http://www.epinions.com	+0.31	52
3	Students Review	http://www.studentsreview.com	+0.28	36
4	E-complaints	http://www.ecomplaints.com	+0.26	35
5	Opinion-Pages	http://www.opinion-pages.org	+0.16	38
6	BizRate	http://www.bizrate.com	-0.19	37
7	All Star Review	http://www.allstarreview.com	-0.20	40
8	Review Centre	http://www.reviewcentre.com	-0.29	45
9	The Opinionated Beer Page	http://www.tobp.com	-0.32	41
10	CardOffers.com	http://www.cardoffers.com	-0.41	41

What Average Scores Mean	
+0.50 =	judged as more credible in 75% of pairings
0.0 =	judged as more credible in 50% of pairings
-0.50 =	judged as less credible in 75% of pairings

Table 8: Ranking and scores for opinion or review Web sites.

What's notable about opinion or review site rankings?

While most of the other nine categories offer surprises, confirmations, or insights, the results of the opinion or review sites are largely unremarkable. Unlike the sites in other categories, the sites here are fairly evenly distributed along the credibility scale, with no notable standouts at the top or bottom of the heap. Other than having a big brand name Epinions—end up in second place rather than first, there is nothing particularly notable about the scores or rankings in this category.

Search Engine Web Sites: Credibility Results

This section presents what we learned about the credibility of search engine Web sites, starting with our results about how the credibility comments for search engine sites differed from the overall averages and then presenting the final credibility rankings of the 10 search engine sites.

Credibility comments about search engine Web sites: What stands out?

As with news sites, the results for search engine sites differed from the overall averages in many areas – eleven areas, to be precise. When evaluating the credibility of search engine Web sites, people commented relatively more often about <u>design look</u> (52.6% vs. 46.1% overall), <u>information design/structure</u> (42.6% vs. 28.5%), <u>performance on a test by user</u> (13.8% vs. 3.6%), <u>site functionality</u> (20.5% vs. 8.6%), <u>advertising</u> (24.6% vs. 13.8%), and <u>past experience</u> with the site (12.8% vs. 4.6%). On the low end of the scale, people evaluating search engine sites commented less often on <u>information bias</u> (3.8% vs. 11.6%), <u>information accuracy</u> (7.1% vs. 14.3%), <u>name recognition and reputation</u> (5.1% vs. 14.1%), and <u>customer service</u> (1.0% vs. 6.4%). A further point of distinction for search engine sites is that this category received the fewest comments coded as "<u>general suspicion</u>" (2.8% vs. 9.4%).

The overall picture for search engines is a complicated one, at least compared to the average findings for all the categories. For most issues, the percentage of comments differed by more than 5 percent with the average values. It seems clear that people are bringing different expectations to each Web site category, and that the search engine category seems to be the most unusual category of the 10.

Credibility rankings of search engine Web sites

Table 9 shows the final ranking of search engine sites in this study.

Search Engine Web Sites

Final Ranking	Web Site Name	URL	Average Score	# of Times Ranked
1	Google	http://www.google.com	+0.55	44
2	Yahoo!	http://www.yahoo.com	+0.24	45
3	About.com	http://www.about.com	+0.17	36
4	LookSmart	http://www.looksmart.com	+0.09	53
5	Vivisimo	http://www.vivisimo.com	+0.08	37
6	Ask.com	http://www.ask.com	+0.04	48
7	Insider.com	http://www.insider.com	-0.08	48
8	All the Web	http://www.alltheweb.com	-0.19	54
9	Overture	http://www.overture.com	-0.19	52
10	iWon.com	http://www.iwon.com	-0.63	43

What Average Scores Mean		
+0.50 =	judged as more credible in 75% of pairings	
0.0 =	judged as more credible in 50% of pairings	
-0.50 =	judged as less credible in 75% of pairings	

Table 9: Ranking and scores for search engine Web sites.

What's notable about search engine site rankings?

In the search engine category, the clear credibility leader was Google, followed by Yahoo! in a distant second place. It's peculiar that Yahoo!'s outcome in the search engines category is arguably worse than its outcomes in other categories in this study: travel, news, and sports.

In addition, we found it somewhat surprising how poorly Overture.com was viewed, given that this site readily discloses information about its corporate operations, including costs of advertising.

On the bottom of the ranking list in search engines is iWon.com, which scored far below any other site. Besides lagging so far behind the rest of the pack, iWon's low ranking is notable because this site is also reported to be popular,[5] demonstrating how in some situations popularity may not always correlate with high credibility (in other media, the distinction between popularity and perceived credibility is notable in properties like the *National Enquirer* and the *Jerry Springer Show*).

Sports Web Sites: Credibility Results

This section presents what we learned about the credibility of sports Web sites, starting with our results about how the credibility comments for sports sites differed from the overall averages, and then presenting the final credibility rankings of the 10 sports sites.

Credibility comments about sports Web sites: What stands out?

When it comes to sports Web sites in this study, two issues emerged as relatively more prominent when evaluating credibility: information focus (30.8% vs. 25.1%) and advertising (22.7% vs. 13.8%). Information design was mentioned less often than average (22.3% vs. 28.5%), while customer service was never mentioned when people evaluated the credibility of sports Web sites (0% vs. 6.4%).

In general, these findings suggest that compared to other categories, sports Web sites win credibility by focusing their site in ways people find pleasing and by not overloading the site with advertising. Oddly enough, issues of information accuracy or bias were not particularly prominent, perhaps because these topics are not perceived as key issues in sports information.

Credibility rankings of sports Web sites

Table 10 shows the final ranking of sports sites in this study.

Sports Web Sites

Final Ranking	Web Site Name	URL	Average Score	# of Times Ranked
1	ESPN	http://www.espn.com	+0.53	51
2	Yahoo! Sports	http://sports.yahoo.com	+0.43	42
3	CNN Sports Illustrated	http://sportsillustrated.cnn.com	+0.30	46
4	Sports Network	http://www.sportsnetwork.com	+0.22	49
5	All Sports	http://www.allsports.com	+0.08	52
6	SportsJones	http://www.sportsjones.com	-0.06	49
7	iWon Sports	http://sports.iwon.com	-0.14	44
8	Stand-Up Sports	http://www.standupsports.com	-0.45	47
9	Xslant	http://www.xslant.com	-0.46	41
10	Sports.com	http://www.sports.com/en	-0.49	51

What Average Scores Mean	+0.50 = judged as more credible in 75% of pairings 0.0 = judged as more credible in 50% of pairings -0.50 = judged as less credible in 75% of pairings

Table 10: Ranking and scores for sports Web sites.

What's notable about sports site rankings?

The ranking list for sports Web sites shows two clusters, one at the top and one at the bottom.

Two sites are in the top cluster of credibility: ESPN and Yahoo! Sports. The surprise here—as with news sites—is how well Yahoo! fared in the rankings. Neither a specialist in news nor sports, Yahoo! has succeeded in creating an online sports offering that people find to be highly credible, perhaps even more so than CNN Sports Illustrated.

On the bottom of the rankings are three Web sites—Stand-Up Sports, Xslant, and Sports.com— all of which fared poorly in comparison to the credibility of other sites. Something about these sites, perhaps their visual design or their lack of a name brand, is causing people to not view them as credible sources of information.

Travel Web Sites: Credibility Results

This section presents what we learned about the credibility of travel Web sites, starting with our results about how the credibility comments for travel sites differed from the overall averages, and then presenting the final credibility rankings of the 10 travel sites.

Credibility comments about travel Web sites: What stands out?

What makes travel Web sites different from other sites when it comes to credibility evaluations? The answer seems clear from the data: <u>customer service</u>. People who evaluated the credibility of travel sites commented on customer service issues far more frequently than the overall average (18.1% vs. 6.4% overall). On the other end of the spectrum, people evaluating the credibility of travel sites commented least often on <u>information bias</u> (1.9% vs. 11.6%). Also below average were the number of comments addressing issues of <u>name recognition and reputation</u> (8.8% vs. 14.1%).

Taken together, these findings show that a category such as travel can be at the extreme for one quality (customer service) while being at the opposite extreme for another issue (information bias). Although these differences are in part a result of the Web sites chosen for this study, we also believe that when people evaluate the credibility of a Web site, they look for different things in different types of sites. When it comes to travel, people focus relatively more on customer service as an indicator of credibility, but as the previous section showed, when it comes to sports, not a single person commented on customer service.

Credibility rankings of travel Web sites

Table 11 shows the final ranking of travel sites in this study.

Travel Web Sites

Final Ranking	Web Site Name	URL	Average Score	# of Times Ranked
1	Yahoo! Travel	http://travel.yahoo.com	+0.43	67
2	Expedia	http://www.expedia.com	+0.32	56
3	Trip.com	http://www.trip.com	+0.24	63
4	GoNomad	http://www.gonomad.com	+0.10	58
5	Travel Zone	http://www.thetravelzone.com	+0.04	52
6	Hotwire	http://www.hotwire.com	+0.03	64
7	Orbitz	http://www.orbitz.com	-0.05	61
8	Getaway.com	http://www.getaway.com	-0.28	69
9	Priceline	http://www.priceline.com	-0.32	76
10	United Tours & Travel	http://www.uttravel.com	-0.37	70

What Average Scores Mean	+0.50 = judged as more credible in 75% of pairings 0.0 = judged as more credible in 50% of pairings -0.50 = judged as less credible in 75% of pairings

Table 11: Ranking and scores for travel Web sites.

What's notable about travel site rankings?

Our research team found three surprises in the credibility rankings for travel sites. First of all, Yahoo! Travel received the highest credibility score in this category. This top placement and high rankings for Yahoo! in other categories suggests that this brand-name company excels at establishing credibility online.

The next surprise is the mediocre ranking of Orbitz, a Web offering backed by major airlines. This site ended up being arguably less credible than GoNomad, a site focusing on alternative travel. The takeaway message here is that an unknown yet well executed Web site can win more credibility points than a site by established players in the industry.

The third outcome of interest is how poorly Priceline scored in this study, ranking almost at the bottom. Although Priceline has lots of name recognition and a celebrity personality, the site failed to convey credibility to people in this study, suggesting that something significant is damaging Priceline's credibility.

Concluding Discussion Focusing on Web Site Categories

We conclude this final part of the Results & Discussion section by addressing two issues. First, we take a critical look at the rankings presented above. Next, we draw a general conclusion about how site purpose affects credibility evaluations.

Concluding discussion about Web site rankings

Because the research methodology we use in this study is new, one question to ask when viewing the site rankings is this: Do the Web credibility rankings produced by this study make sense? Our answer is yes. As a research team we find that the rankings portray a believable picture of how people view the credibility of the Web sites under study. Of course, there are surprises in the data, which make a study like this interesting. But for the most part, the ranking results are in line with what our team (experienced Web users and researchers) would expect to find.

The next question to ask is: How much would these credibility rankings change if our participant demographics were different? As described earlier, our participants were mostly female (58% compared to the U.S. average of about 51%[6]) and older than the U.S. average (39.9 years compared to U.S. average of 35.5[7]). Yet the most unusual difference about our participants was their reported use of the Internet, which averaged almost 20 hours per week. This is more than five times the weekly average reported by Nielsen/NetRatings in August of 2002.[8]

So how would the credibility rankings differ if our demographics were not skewed toward slightly older females with considerable Web experience? The answer is impossible to determine exactly. However, one can get a sense for the impact of our demographic skew— skewed toward experienced older females—by imagining this study as having the opposite skew —younger males with little Web experience. Which type of participant is likely to give better credibility evaluations and contribute quality comments? For our research team, this is an easy choice: We'd opt for the demographic we have in this study—slightly older females with considerable Web experience. While the rankings may change with a younger, more male, or less experienced set of participants, we believe the rankings produced in this study are likely to be more accurate.

One could ask other questions about these rankings, but our last one focuses on a practical issue: What good are these rankings?

In our view, the best practical use of these rankings—at least for Web site designers—is to compare the sites with the highest credibility to the sites with lowest credibility. These extreme credibility differences seem undeniable, regardless of shortcomings in the study method or participants. From a credibility standpoint, the user experience of the sites that ranked #1 or #2 in a category is different from the user experience of sites that ranked at the bottom. As the comments make clear, sometimes these differences have to do with established reputation, such as in the case of MayoClinic.com or Schwab. But in other cases, most notably with

McMaster.com and ShareBuilder.com, the credibility was apparently won by Web site performance alone. In sum, a practical use of the rankings is to examine the Web sites at the extreme ends of the rankings to determine how the highly credible sites differ from sites ranked at the bottom. This approach can lead to insights about what to do—and what not to do—when designing for credibility.

While the rankings are interesting to view, we have downplayed their importance in this report because our other data type—the comments gathered during this research—provide richer insight as to how people evaluate the credibility of Web sites today.

How Web site topic influences credibility assessments

One overall conclusion from this study, something that has been hypothesized but never clearly shown, is that people assess credibility differently for different types of Web sites. For example, our data showed that at times the identity of the site operator mattered very much in determining credibility (such as with nonprofit sites), and at other times identity mattered very little (as with entertainment sites). Our data also showed that at times information bias figured prominently into the credibility evaluations (as with news sites), but it didn't seem to be prominent in evaluations of other types of sites (such as travel). Although universal factors that affect Web site credibility exist—such as design look and information design/structure—people in this study showed that differences exist as well.

We need more research to understand these differences, as well as research to fully understand the range of credibility variables that relates to a single category, such as travel Web sites or search engine sites. The findings from these new studies will have implications not only for people who design Web sites, but also for the mission of Consumer WebWatch, as it sets forth additional guidelines for improving people's experiences on the Web.

The fact that people notice different issues when evaluating site credibility, depending on the type of site, leads into the next section of the report, which aims to provide readers with a deeper understanding of how people evaluate credibility.

How to View This Study & Other Web Credibility Research

To better understand the contributions of the research described in this paper and how these findings complement previous work in this area, one must have a basic understanding of Prominence-Interpretation Theory (P-I Theory) (Fogg 2002a).

In brief, P-I Theory posits that two things happen when people assess credibility: a person (1) notices something (Prominence) and (2) makes a judgment about it (Interpretation). If one or the other does not happen, then there is no credibility assessment. The process of noticing prominent elements and interpreting them will typically happen more than once when a person evaluates a Web site, with new aspects of the site being noticed and interpreted until the person reaches satisfaction with an overall credibility assessment or reaches a constraint, such as running out of time.[viii]

A summary of P-I Theory can be described as follows:

Prominence	X	*Interpretation*	=	*Credibility Impact*
An element's likelihood of being noticed when people evaluate credibility.		**What value or meaning people assign to element, good or bad.**		**The impact that element has on credibility assessment.**
Affected by involvement (motivation & ability), content, task, experience, individual differences & more.		*Affected by user's assumptions (culture, experience, & heuristics), skill, knowledge, goals & more.*		

Figure 24: A summary of Prominence-Interpretation Theory.

Previous research on Web credibility has investigated the Interpretation component of this theory (Finberg, Stone & Lynch, 2001; Fogg, 2000b; Fogg & Tseng, 1999; Fogg et al., 2002; Fogg, Lee, & Marshall, 2002; Fogg, Marshall, Kameda et al., 2001; Fogg et al, 2000; Fogg et al. 2001; Kim & Moon, 1998; Princeton, 2002). For example, the study conducted by Princeton Survey Research Associates and published by Consumer WebWatch (Princeton, 2002) is a study about Interpretation. In this study, researchers contacted people via the phone and asked them to assess the importance (their "interpretations") of various elements of a Web site, such as knowing who owns the Web site and having a privacy policy. Participants responded to each item, making a value judgment of those items. The Stanford Persuasive Technology Lab has also done research that addresses the Interpretation component in P-I Theory, using online questionnaires (Fogg et al., 2001; Fogg et al. 2002). In these studies, conducted in 1999 and 2002, people were asked how

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[viii]Presented in more detail elsewhere (Fogg, 2002a), the theory suggests that various factors affect both Prominence and Interpretation.

different aspects of a Web site would affect the credibility of the site. The questions probed how people viewed sites that "looked professionally designed," that had "a broken link," that "gave a quick response to a customer service question," and over 50 other items. These previous studies were about Interpretation. None of these studies examined the Prominence part of the equation.

In contrast to previous work, the study described in this paper focuses on Prominence. It investigates what people notice when asked to evaluate the credibility of a Web site.[ix] And what do people notice? What is prominent? This research has given us some preliminary answers. For all 10 categories of Web sites, people noticed the design look. After that, people noticed different things most often, depending on the content category. For news Web sites, people noticed bias of information. For nonprofit Web sites, people noticed who was behind the site – the identity of the site operator. As Prominence-Interpretation Theory suggests, the content and purpose of a Web site affects what people notice when they evaluate the site's credibility.

The release of this report is a step forward in the study of Web credibility, because to gain a rich understanding of credibility impact, one must have information about both Prominence and Interpretation. Studies that focus on these separate components can be woven together to create a rich warp-and-woof understanding of Web credibility, an approach that is far richer and—in our view—more compelling than previous explanations of how people assess the credibility of Web sites.

Consider how having a privacy-policy statement affects the perceived credibility of a Web site. Previous research (the various studies that focused on Interpretation) found that people claim to assign more credibility to sites that have a privacy policy. This makes sense. But what if people don't notice the privacy policy? Prominence-Interpretation Theory suggests that if people don't notice an element, such as a privacy policy, then it will not have any impact on the overall credibility assessment. Again, this makes sense: Any site with a privacy policy that does not get noticed gets no credibility boost from having the privacy policy. Our research shows how this plays out in real Web sites: Fewer than 1 percent of the comments about the 100 Web sites mentioned anything about a privacy policy. This element was rarely noticed and, as a result, had almost no real impact on the credibility assessments people made. The same is true for any other element, such as a broken link buried deep inside the site. Although previous studies show that a single broken link will hurt the credibility of a Web site—at least that's what people reported— the broken link will have no effect on the credibility assessment if people *don't* notice it.

An additional example helps show how previous studies and the current research work together in understanding Web site credibility evaluations. The Stanford studies on Web credibility elements found, both in 1999 and 2002, that people claim to assign more credibility to a site that "looks professionally designed" —that's an issue of Interpretation. Our current study suggests that

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[ix]What people notice on a Web site and what they make comments about are not exactly the same things, but we propose that the comments people made in this study reflect to a substantial degree the things people found most noticeable.

people frequently notice the design look of the site—which is an issue of Prominence. As P-I Theory suggests, the combination of high Prominence and favorable Interpretation make "professional-looking design" a Web site quality that will significantly boost a site's overall perceived credibility. An appealing visual design is a pivotal issue in assessing Web site credibility, since this aspect of a site is likely to be both noticed and interpreted positively.

Even though our current study makes significant steps forward in understanding Prominence, our research has shortcomings. Because the specific percentages in this study are the result of variables that can change—the coding categories, the study context, the users who chose to participate, the 100 Web sites selected for this study—we caution readers against becoming too attached to these particular values. Although we performed our calculations with care, readers should view the resulting percentages as approximations, since this study is an early attempt to measure Prominence. We hope future studies can draw on what we have done in order to enhance the research method and the data analysis. For example, creating a more precise coding system will be an ongoing process that will require multiple studies and many debates. Perhaps the biggest contribution from our study will be to provide an initial set of results that future research can refine or refute. In other words, we view our study as the opening statement in a new conversation, not as the final word.

While various questions remain unanswered, one thing is clear: Our collective understanding of Web credibility assessments will become richer as research continues to give insight in two areas: (1) what people notice when evaluating Web site credibility, and (2) how people evaluate different Web site elements or features. Both paths are worthy directions for future research.

Implications for Consumer WebWatch

One purpose of this study was to help Consumer WebWatch fulfill its mission of making the World Wide Web a place where ordinary people can safely and efficiently find information and make transactions. Consumer WebWatch has outlined five guidelines involving transparency and fairness. In brief, these guidelines are as follows (see http://consumerwebwatch.org or Appendix C for the wording of these guidelines):

1.   **Identity**: Making clear who owns the site and how people can contact them

2.   **Advertising and Sponsorships**: Distinguishing between ads and content and disclosing relevant business relationships

3.   **Customer Service**: Disclosing costs and policies relevant to consumers

4.   **Corrections**: Correcting past information that was false or misleading

5.   **Privacy**: Disclosing how personal information will be used

The results of our study suggest that ordinary people do not often use the above criteria in evaluating the credibility of a Web site. None of these categories appeared in more than 15 percent of the comments from our participants; some of them appeared rarely, if ever. Our results do not mean that the five guidelines are irrelevant to consumers. When asked whether these issues matter, people say yes (Princeton, 2002). Indeed, if people looked for these features on the Web sites they visit, they would get a clearer picture about what they can and cannot trust online. But our data suggest that when actually using the Web, people likely don't think about these five key issues. They don't probe very deeply into issues of identity, sponsorship, corrections, customer service, or privacy.

The disconnect between what people *actually* do and what they *should* do creates two important opportunities for Consumer WebWatch, one dealing with education, the other with evaluation.

The Need for Education

One role Consumer WebWatch can play in the future is that of an educator about what people should be looking for as they assess how safe it is to believe information or transact business with a Web site. If consumers knew they should look for the five markers of transparency and fairness, they would be more likely to seek and notice those things. And as people start looking for those things, Web site designers will be under pressure to provide them. Right now there is no standard way to inspect a site to figure out whether what the site says or does is worthwhile. Consumer WebWatch is in a good position to create this standard.

The Need for Evaluation Assistance

The second role Consumer WebWatch is perhaps more realistic than the previous role. (Yes, changing the way people evaluate Web sites is a worthy goal, but this may be too ambitious a task.) A more tractable endeavor would be to provide people with assistance in evaluating Web sites—i.e., to do most of the work in identifying which Web sites are worthy of people's time and attention and which sites are not.

This is not a new role for Consumers Union. In fact, it's the core-value proposition of its leading publication, *Consumer Reports*. Ordinary people turn to this publication to find out which products and services are most reliable and which products and services they should probably avoid. It's the trusted guide for people buying washing machines, insurance policies, and mobile-phone plans. This established role for Consumers Union could—and probably should—be extended into the online world.

The consumer need for evaluation assistance in the online world may be greater than that need in the physical world. At least in the physical world, people have years of experience to draw on; in addition, hundreds of regulations have developed over the years to weed out the worst players. This is not so in the online world. When we use the Web today, all of us are entering territory that's new and constantly changing (consider how dramatically online ads have changed in the last six months, for example). Because the Web is new and dynamic, even those of us who make a profession of studying the Web would benefit from the evaluation assistance that Consumer WebWatch could provide. An organization dedicated to this purpose not only could save people time and energy, but it also could do the job better than virtually any individual working alone.

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Appendix A: Web Sites Selected for this Study

We selected 100 sites for this study, 10 in each of 10 categories. The categories and sites are listed below in alphabetical order:

E-Commerce

Amazon	http://www.amazon.com
Barnes & Noble	http://www.bn.com
Best Buy	http://www.bestbuy.com
Buy.com	http://www.buy.com
Cars.com	http://www.cars.com
Dogwise	http://www.dogwise.com
eBay	http://www.ebay.com
McMaster-Carr	http://www.mcmaster.com
MTE Nutrition	http://www.mtenutrition.com/index.html
ThymuSkin	http://www.thymuskin.com

Entertainment

Ain't It Cool News	http://www.aint-it-cool-news.com
ChristianAnswers.net	http://christiananswers.net/spotlight
Citysearch	http://www.citysearch.com
E! Online	http://www.eonline.com
Entertainment Weekly	http://www.ew.com
Fandango	http://www.fandango.com
Internet Movie Database	http://www.imdb.com
Moviefone	http://www.moviefone.com
Pazsaz.com	http://www.pazsaz.com
Yahoo! Entertainment	http://entertainment.yahoo.com

Finance

ChoicePicks	http://www.choicepicks.com
Christian Brothers Investment Services	http://www.cbis-fsc.com/index.asp
Domini Social Investments	http://www.domini.com

E-Trade	http://us.etrade.com/e/t/home
Fidelity Investments	http://www.fidelity.com
Merrill Lynch	http://www.ml.com
Charles Schwab	http://www.schwab.com
Scottrade	http://www.scottrade.com
ShareBuilder	http://www.sharebuilder.com
Stocks at Bottom	http://www.stocksatbottom.com

Health

Dr. Koop	http://www.drkoop.com
Dr. Weil	http://www.drweil.com
Health Bulletin	http://www.healthbulletin.org
HealthWorld Online	http://www.healthy.net
Intelihealth	http://www.intelihealth.com
MayoClinic.com	http://www.mayohealth.org*
MDChoice	http://www.mdchoice.com
National Institutes of Health	http://www.nih.gov
Oxygen.com Health and Fitness	http://www.oxygen.com/health
WebMD	http://www.webmd.com

*Note that the Web address we used for MayoClinic.com, www.mayohealth.org, automatically redirects to www.mayoclinic.com. We refer to this site as MayoClinic.com throughout this paper to distinguish from MayoClinic.org, which is the Web site for the Mayo Foundation and its associated clinics and hospitals.

News

CNN	http://www.cnn.com
Crosswalk.com	http://news.crosswalk.com/
Drudge Report	http://www.drudgereport.com
MSNBC	http://www.msnbc.com
The New York Times on the Web	http://www.nytimes.com
SF Gate	http://www.sfgate.com
Telluride Gateway	http://www.telluridegateway.com
Time	http://www.time.com
Workers World	http://www.workers.org/ww
Yahoo! News	http://news.yahoo.com

Nonprofit

Aim High	http://www.aimhigh.org
Comic Book Legal Defense Fund	http://www.cbldf.org
Compassion	http://www.compassion.com
DogScouts	http://www.dogscouts.com
Liberty Unites	http://www.libertyunites.org
MISS Foundation	http://www.missfoundation.org
American Red Cross	http://www.redcross.org
Save the Earth	http://www.savetheearth.org
The Hunger Site	http://www.thehungersite.com
World Peace Endowment	http://www.worldpeaceendowment.org

Opinion or Review

All Star Review	http://www.allstarreview.com
BizRate	http://www.bizrate.com
CardOffers.com	http://www.cardoffers.com
Consumer Search	http://www.consumersearch.com
E-complaints	http://www.ecomplaints.com
Epinions	http://www.epinions.com
Opinion-Pages	http://www.opinion-pages.org
Review Centre	http://www.reviewcentre.com
Students Review	http://www.studentsreview.com
The Opinionated Beer Page	http://www.tobp.com

Search Engines

About.com	http://www.about.com
All the Web	http://www.alltheweb.com
Ask.com	http://www.ask.com
Google	http://www.google.com
Insider.com	http://www.insider.com
iWon.com	http://www.iwon.com
LookSmart	http://www.looksmart.com
Overture	http://www.overture.com
Vivisimo	http://www.vivisimo.com

Yahoo!   http://www.yahoo.com

Sports

All Sports   http://www.allsports.com
ESPN   http://www.espn.com
iWon Sports   http://sports.iwon.com
CNN Sports Illustrated   http://sportsillustrated.cnn.com
Sports Network   http://www.sportsnetwork.com
Sports.com   http://www.sports.com/en
SportsJones   http://www.sportsjones.com
Stand-Up Sports   http://www.standupsports.com
Xslant   http://www.xslant.com
Yahoo! Sports   http://sports.yahoo.com

Travel

Expedia   http://www.expedia.com
Getaway.com   http://www.getaway.com
GoNomad   http://www.gonomad.com
Hotwire   http://www.hotwire.com
Orbitz   http://www.orbitz.com
Priceline   http://www.priceline.com
Travel Zone   http://www.thetravelzone.com
Trip.com   http://www.trip.com
United Tours and Travel   http://www.uttravel.com
Yahoo! Travel   http://travel.yahoo.com

Appendix B: Coding Categories

The following table shows the coding categories we used in this study, along with examples taken from the data.

Issue & Explanation	Codes Used	Examples from the consumer data (Note: For some comments we've corrected typos and punctuation.)
Identity Comments relating to Consumer WebWatch Guideline #1, which addresses identity issues.	**IP** Identity positive	• *This Web site has clear information about its company and policies.* • *I could easily find contact information, a physical address, and phone number, which would help me to verify their legitimacy.* • *Very transparent and informative, not only about investment possibilities but also about philosophy.*
	IN Identity negative	• *I do not know enough about them to feel safe giving them my money.* • *There was no phone number to call.* • *They weren't really specific about what they do, other than some broad generalities.*
Sponsorship Comments relating to Consumer WebWatch Guideline #2, which addresses issues of sponsorship.	**SP** Sponsorship positive	• *Tells who the sponsoring organizations are.* • *This search engine makes it clear what is paid advertising and what is not.*
	SN Sponsorship negative	• *The "sponsors" and ads made me a bit skeptical.* • *Too difficult to tell sponsored ads from other hits retrieved!*
Customer Service Comments relating to Consumer WebWatch Guideline #3, which addresses issues of customer service. Also, comments relating to how an organization operated were coded in this category.	**CSP** Customer service positive	• *They take pains to let you know how their service works.* • *I like the business being up-front about costs, etc.* • *Useful to the point of defining customer service issues. And consumer complaints.*
	CSN Customer service negative	• *This site seemed to have less accountability to its customers on the items that can be purchased.* • *I don't like sites where you can't see exactly what you are paying for.* • *I would like to find something that will tell me that the quality of services is high.*
Corrections Comments relating to Consumer WebWatch Guideline #4, which addresses issues of correcting false information.	**COR**	[There were no comments on this issue.]

Privacy Comments relating to Consumer WebWatch Guideline #5, which addresses issues of privacy.	**PP** Privacy positive	• *Had a privacy statement.* • *Liked the Privacy Policy.* • *I liked the large "Security" button with info re: shared user data.*
	PN Privacy negative	• *No privacy policy evident.* • *Various cookies materialized.* • *I hate having to log in and give information when I'm searching for tickets.*
Design Look Comments relating to the look of the site.	**DLP** Design look positive	• *I like the look of the Web site. Looks professional.* • *The layout is cleaner.* • *At first I thought that this was going to be the more credible site, with its layout and design, but after reading a few reviews I discovered that it is not.*
	DLN Design look negative	• *Looks very unprofessional.* • *Seems flashy, like a used-car salesman.* • *Graphics are of an earlier generation of e-commerce UI [User Interface].*
Information Design Comments relating to how the information is structured or organized on the site.	**IDP** Info design positive	• *It is well organized and has a straightforward design—you understand it within seconds.* • *This is more organized.* • *Everything the Web site visitor needed was right on the front page.*
	IDN Info design negative	• *Core information (such as contact details) can take a little while to find.* • *Too difficult to navigate.* • *Information badly presented. They try to put everything on the front page.*
Information Focus Comments relating to the scope or focus of the site.	**IFP** Info focus positive	• *Somehow looks as if more information is being offered at this site.* • *Well focused.* • *This site was totally devoted to news and the dissemination of information.*
	IFN Info focus negative	• *This site was interesting, but too broad.* • *There was not a whole lot of information on these pages.* • *Too much at a glance.*

Information Accuracy Comments relating to the accuracy of the information on the site that do not mention information source.	**IAP** Info accuracy positive	• *Information sounds credible and corroborates what little I know about this area of work.* • *This site listed more facts.* • *The information is generally solid.*
	IAN Info accuracy negative	• *Not necessarily providing me with the most accurate or best information.* • *The data is harder to verify.* • *I don't believe in market timing that is advocated on this site.*
Information Bias Comments relating to the perceived bias of information on the site.	**IB** Information biased	• *I feel their view is colored by their desire to boost their advertising revenue.* • *Obvious slant in types of stories covered as well as headlines.* • *Sentimentalist jingoistic crap.*
	IU Information unbiased	• *It is credible because the opinions contained therein are based on unbiased research.* • *Students speaking in an uncensored forum.* • *Heavily political, represents the left point of view, but reports fairly and opinion is reasonable.*
Information Usefulness Comments relating to the usefulness of the information on the site.	**IUP** Info usefulness positive	• *This Web site provided useful and interesting knowledge about events in sports.* • *I found this site very helpful and informative. I will visit it again to get information I need for myself and my young son.* • *This site is great if you're going to travel. You can get the "lay of the land."*
	IUN Info usefulness negative	• *There appears to be no useful information on this Web site.* • *I didn't see what sense the page was unless it was purely for fun.* • *This site was not very useful other than the bulletin board.*
Information Clarity Comments relatin g to how the site's content is (or is not) clear and understandable.	**ICP** Info clarity positive	• *Clear, concise information on home page.* • *This Web site is great! It really spells things out for a rookie investor. Everything was easy to find and understand.* • *Presents information clearly and cleanly.*
	ICN Info clarity negative	• *I found this site unclear and confusing.* • *Nothing on the site but computer language.* • *The Web site talks about making things easy for investors but then speaks over most people's heads.*

Readability Comments relating to the site's readability--how easy or hard it was to read what on the pages.	**ETR** Easy to read	• *The layout and the graphics are easy to read.* • *The format was easier for me to read and follow along with the stories.* • *Easy to read.*
	HTR Hard to read	• *First blush rates it better on credibility, but hard-to-find and hard-to-read critics ratings make it appear a poor use of my time.* • *Type too small. Ad smack in the middle of page, with editorial material, was repugnant. Headline over picture of Tiger Woods should have extended over type, too, or type should have been moved up.* • *The page is not easily readable. The font "Courier" contributed to this.*
Currency of Information Comments relating to how current (up to date) the information is on the site.	**CRP** Currency positive	• *Their information seems to be more up-to-date.* • *This one would appear to be updated more often and kept current.* • *Contains date of update.*
	CRN Currency negative	• *The photos of the children were from the mid '90s; they should be more up to date.* • *No update date.* • *Somewhat dated material, it seems, which gives more time for spinning news and event reports.*
Writing Tone Comments relating to the tone or attitude conveyed by the site's content.	**TWP** Tone of writing positive	• *The headlines were dry and to the point. The Web site had so much to it that it felt "trustworthy."* • *They have a friendly, no-nonsense, straightforward tone to their page and their letter.* • *Restrained language and lack of buzz and flash make this a more credible site.*
	TWN Tone of writing negative	• *There was too much sarcasm when it came to headlines.* • *"Holy Crap" and other slang or poor language harms credibility. Credible people tend to understate.* • *Seems more optimistically oriented, more like advertising than actual review.*
Site Functionality Comments relating to how the site functions, both technical performance and the services the site offers.	**FP** Functionality positive	• *Downloads quickly.* • *Always uses Inktomi, therefore more consistent, therefore more credible.* • *It was the most believable because of the little movie blip they had on the site.*

	FN Functionality negative	• *I find the site more credible in theory but it's awfully buggy. When I entered the city of Rome, Italy it gave me hotel info about Nice, France.* • *The site was down for site maintenance.* • *The news stories section did not show any stories even though I tried it twice.*
Performance on Test by User Comments that tell about a test the user performed to evaluate the site's credibility.	**PTP** Performed test positive	• *I searched for MRI and was able to view images and relevant Web pages.* • *Did 2 searches. Both yielded most relevant sites for the subject at top of list.* • *This site is interesting, I found a fare on this site that was actually cheaper than what I found on the Web site of the airline itself! I bookmarked this one and will use it again.*
	PTN Performed test negative	• *I attempted to access information on shingles at this site and no information was available.* • *I looked for Anaplastic Astrocytoma. The site had only a couple sites to look at, and they didn't give a whole lot of info.* • *It was the least believable because it could not find a coat of armor for my last name.*
Past Experience with Site Comments relating to previous experiences people had with the site under evaluation	**PEP** Past experience positive	• *I've used it so much that I know and trust this organization.* • *I can ALWAYS find anything I need at this site! Have never had difficulties here.* • *I have used this Web site in the past and have found it to have sound information.*
	PEN Past experience negative	• *I am familiar with them and usually find their critiques to be accurate but not portrayed in the best way.* • *I've used this site before and it did not meet my expectations.*
Name Recognition and Reputation Comments relating to name recognition of the site or the reputation of the operator.	**NRP/RP** Name recognition positive/ Reputation positive	• *Maybe because it is a well-known outfit it looks to me to be more credible.* • *This is a more credible site. Not because of simple name recognition but because having a local branch gives this company an image of being more real.* • *Name recognition gives this site the edge. Otherwise my appraisal was almost equal.*
	NRN/RN Name recognition negative/ Reputation negative	• *This site is less credible because the name is unfamiliar.* • *Both look credible, but this isn't a brand name, the other is.* • *I simply don't know anything about this company. I would have to do more research on the company before I trusted it with my business.*

Advertising Comments relating to how users perceive advertising on the site.	**AP/AV** Advertising positive	• *Site did not have pop-ups.* • *Banner ads on the side are more discreet and help make the site feel independent.* • *There are ads along the page but they don't all jump out at you and if you are really interested in them you can go check them out, but you don't lose track of why you came to the site.*
	AN Advertising negative	• *Site had pop-ups and spam in my face. This makes it less appealing and less credible.* • *This site is full of ads, the home page is dominated by the Need Cash promo. Advertising is bound to affect objectivity.* • *Sold out their site to advertising.*
Motive of Organization Comments relating to the perceived motive—good or bad—of the organization behind the site.	**CMP** Company motive positive	• *501C3 status makes this organization appear more credible.* • *This site is just about opinions and isn't trying to sell anything. Much more of a chance that people are giving honest opinions here since money isn't involved.* • *I would trust this site because it's run by a religious denomination whose aim is socially responsible investing.*
	CMN Company motive negative	• *Doesn't seem credible when they give a product a good review and give you a link to order it, too.* • *This is an entertainment Web site? More like an ad-dollar driven method of driving people into lame venues. Not likely.* • *The fact that this one is done by an insurance company makes it seem less credible.*
Affiliations Comments relating to the site's affiliates, supporters, or partners.	**ASP** Association positive	• *Affiliation with a prestigious university adds to a sense of objectivity.* • *Backed by CNN* • *Links to other major sites. Amazon, Honda. Would these sites lend their credibility to a scam site? Not likely.*
	ASN Association negative	• *Lately, anything related to religion and money sends up a red flag.* • *I tend to distrust anyone or thing that brags about any awards right off the get-go. The J.D. Powers awards seem to be passed out like Halloween candy.* • *I don't believe much that GW Bush says, so his presence on the Web site detracts from its credibility.*
General Suspicion General comments about being suspicious of the site or its operators.	**JPS** Just plain suspicious	• *Sounds almost too good to be true.* • *I wouldn't put either in the "credible" category. . . . I would be suspect of both.* • *Because it involves buying and selling I tend to believe that their system is bound to have faults.*

General Dislike	JPD	
General comments about not liking the site or its operators.	Just plain dislike	• *About as cheap and nasty as any form of publication in any media can be, crass and corporate, avoid like the plague.* • *I don't like Web sites that exploit women's bodies.* • *The American "entertainment industry" generally fails to entertain me.*

Appendix C: Consumer WebWatch Guidelines

These guidelines were retrieved from http://consumerWebWatch.org on August 17, 2002.

CONSUMER WEBWATCH GUIDELINES

1   **Identity**:
Web sites should clearly disclose the physical location where they are produced, including an address, a telephone number or e-mail address.

Sites should clearly disclose their ownership, private or public, naming their parent company.

Sites should clearly disclose their purpose and mission.

2   **Advertising and Sponsorships:**
Sites should clearly distinguish advertising from news and information, using labels or other visual means. This includes "in-house" advertising or cross-corporate ad sponsorships. Search engines, shopping tools and portals should clearly disclose paid result-placement advertising, so consumers may distinguish between objective search results and paid ads.

Sites should clearly disclose relevant business relationships, including sponsored links to other sites. For example: A site that directs a reader to another site to buy a book should clearly disclose any financial relationship between the two sites.

Sites should identify sponsors. The site's sponsorship policies should be clearly noted in accompanying text or on an "About Us" or "Site Center" page.

3   **Customer Service:**
Sites engaged in consumer transactions should clearly disclose relevant financial relationships with other sites, particularly when these relationships affect the cost to a consumer.

Sites should clearly disclose all fees charged, including service, transaction and handling fees, and shipping costs. This information should be disclosed before the ordering process begins.

Sites should clearly state and enforce policies for returning unwanted items or canceling transactions or reservations.

4   **Corrections:**

Sites should diligently seek to correct false, misleading or incorrect information.

Sites should prominently display a page or section of the site where incorrect information is corrected or clarified.

Sites should strive to mark content with its published date when failing to do so could mislead consumers.

Sites should clearly state their policy on a consumer's rights if a purchase is made based on incorrect information on the site.

5   **Privacy:**

Site privacy policies should be easy to find and clearly, simply stated.

Sites should clearly disclose how personal data from site visitors and customers will be used. Personal data includes name, address, phone number and credit card number.

Sites should disclose whether they use browser-tracking mechanisms such as "cookies," and other technologies such as Web beacons, bugs and robots.

Sites should explain how data collected from them will be used.

Sites should notify customers of changes to privacy policies, and provide an easy opt-out alternative.

Endnotes

[1] While the most basic question about Web credibility is difficult to answer in brief, two recent studies have examined this issue in different ways and reached somewhat different conclusions. See:

> Princeton Survey Research Associates (2002). *A Matter of Trust: What Users Want From Web Sites*. Results of a National Survey of Internet Users for Consumer WebWatch. Available online at http://www.consumerwebwatch.org/news/report1.pdf.

> Finberg, H., Stone, H., and Lynch, D. (2001). *Digital Journalism Credibility Study*. Available at http://www.journalists.org/Programs/credibility_study.pdf

[2] For statistics on Internet access in many countries, see http://cyberatlas.internet.com/big_picture/geographics/article/0,1323,5911_151151,00.html

[3] Some of the research examin ing issues relating to Web credibility include the following:

> Cheskin Research (2000). *Trust in the Wired Americas*. Available at http://cheskin.com/think/studies/trustIIrpt.pdf.

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