

# Effective First Impressions Online: A Case Study of Working With Industry Professionals to Analyze Web Site Usability

Emily Rhoades, Katie Chodil, and Tracy Irani

## Abstract

The Internet has opened doors for communicators, giving them new ways to reach a variety of audiences in an unfiltered and timely fashion. However, good Web site design is complex, and an unfriendly or confusing site can easily intimidate or discourage users. This paper describes a recent partnership between researchers in academia and an agricultural organization whose aim is to educate the public about the agricultural industry. Together, they used current usability testing methodology to determine the effectiveness of the organization's Web site. This paper presents the results of the study as well as recommendations for individuals considering such a partnership.

## So What?

The majority of agricultural communicators now use the Internet to get their messages out to the world. As technology changes and communicators adapt, it is important to keep effective communication practices in mind. This study highlights how researchers and practitioners can work together to ensure that agricultural Web sites are both usable and effective.

Agriculture media and news media are constantly looking to the Internet to find information for their publications. In a study of broadcast and print media in Florida, Bisdorf-Rhoades, Irani, and Telg (2005) found that reporters made use of the Internet in 88.9% of their regular work. As more media professionals seek out information online, it is becoming increasingly important for agricultural advocacy organizations to have a strong and effective Web presence.

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Researchers like Esrock and Leichty (1999) and O'Donovan (2001) have called for communicators to consider the needs of their users and develop sites that are not only technologically efficient, but also visually appealing. Ihator (2001) emphasized the importance of professional communicators' use of the Internet in enhancing relationships with and delivering information to the public, especially when those communicators are in public relations. Organizations working with limited financial means often see the Internet as a unique opportunity to reach new audiences without the high costs of print publications (Kang & Norton, 2003). However, this can also mean that money is not spent on developing efficient sites that get the message across to users. In order to realize the Internet's vast potential, communicators must use this tool effectively.

Research has shown that some organizations' Web sites are not user-friendly; in fact, some drive users away, making these sites ineffective communication tools (Esrock & Leichty, 1999). Researchers connect a person's initial experience with a Web site to the theoretical idea of self-presentation. Goffman (1959) first described self-presentation by discussing how individuals present themselves in everyday life through information management. All people express who they are through verbal and nonverbal communication. Researchers have utilized this theory in Web site research because the nature of Web site design gives individuals a new type of control over the information they choose to divulge to the world (Papacharissi, 2002). As Papacharissi (2002) explained, the individuals managing sites can choose how to present their organizations through the use of design and content elements, such as banners and lists of suggested links. Theorists say self-presentations can lead others to perceive a person or organization as trustworthy, competent, and dynamic (Dominick, 1999) based on the "self" displayed online. When an organization fails to make a good first impression online, it may not be as successful in communicating its message. In a medium such as the Internet, the usability and perceived credibility of the site is as important as the information presented (Henika, 1999).

### *Usability*

Usability is a Web design concept that has been the focus of much investigation and discussion among researchers and communications practitioners. When used in reference to Web site design, "usability" refers to how easily someone can use the site to find information (Nielsen, 2000). As Krug (2000) stated, users are unique, and each is going to be looking for something different on a site.

According to Nielsen (2000), users will spend only 10 seconds on a Web site before they decide to either continue using the site or leave. When users

initially enter a site, they tend to scan for information; to help users find the information they seek, developers must design for better scanning (Krug, 2000; Spool, Scanlon, Schroeder, Snyder, & DeAngelo, 1999).

Research suggests that there are several things designers can do to make sites user-friendly. According to Nielsen (2000), the text on a Web page should be significantly briefer than the text of a comparable print document. Links should be well incorporated into the site to offer the user a deeper experience with the text (Hall, 2001). Other usability aids, such as chunking text into smaller sections and using subheads that help users move through information, are important as well (Hall, 2001; Nielsen, 2000).

It is also important for the navigational structure of the site to be clear and user-friendly. Navigation can be flawed in several different ways. For instance, it may use terminology that users do not understand, or it may take them to places they do not expect to go (Nielsen, 2000).

### **Purpose**

In 2004, Ruth, Bortree, Ford, Braun, and Flowers analyzed Florida commodity group Web sites and concluded that the majority of the sites were not created with the needs of the media in mind. Influenced by the findings of this study, the Agriculture Institute of Florida, an organization of agricultural communicators whose aim is to serve as a unified voice for the diverse agricultural industry in Florida, asked researchers at the University of Florida to help analyze the effectiveness of its Web presence. The group wanted to learn if the site's text, appearance, and navigational design were helping it effectively reach its audiences.

This paper describes the steps taken to analyze the Florida Agriculture Institute's Web site and offers suggestions as to how university researchers can work with communicators to ensure successful Web site design. The study attempted to determine if the Agriculture Institute's site was effectively presenting information to its audiences (agriculturalists and media), if the organization effectively portrayed its objectives through the content and design of the site, and if site design features were effectively used in the communication process. The organization was not interested in adding to the technology of the site, but improving what was currently there.

### **Methods**

The research process began with a questionnaire that was placed on the institute's Web site to gauge users' perceptions. Researchers followed the questionnaire portion with laboratory usability testing and then conducted an analysis of the site's visibility online. This form of exploratory usability testing allows researchers to discover areas of user confusion that could

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cause communication disengagement (Levi & Conrad, 2002). Usability experts believe this type of usability testing to be effective at any point in the developmental life cycle of a site (Krug, 2000). Because this site had been online for several years and the organization was trying to decide whether the site should be redesigned, it was important to use such a methodology.

Previous Web site evaluation surveys aided the development of the 37-question Web survey used in the first stage of testing (Schubert, 2002). An expert panel examined the survey to ensure item validity. Researchers placed the form on the home page of the Agriculture Institute's Web site to gather data from site visitors. The instrument asked participants to report their feelings on the site's usefulness, usability, and relevance. Participants responded to questions about how they found the site, how often they visited, their perceptions of the site, and their knowledge of the Agriculture Institute. They also answered demographic questions. Agriculture Institute members received three e-mails encouraging them to participate in the survey. Since the study concerned the perceptions of current users, no other solicitation was conducted. A total of 10 surveys were completed.

The second part of the study consisted of laboratory usability testing. When testing for usability, researchers and practitioners use several methodologies. Techniques such as focus groups and card sorting are utilized in early stages to ensure that the structure and navigation of a site are clear and usable (Krug, 2000). Other methods used during and after site development include observations of site usage, task-based activities (such as answering a question using information on the site), and expert reviews. A task-based approach was taken with this study, meaning that study participants were asked to find specific information on the site to answer a question that was posed to them (Corry, Frick, & Hansen, 1997; Krug, 2000). Krug suggests that a minimum of three participants take part in the testing in order for this approach to be valid. Due to funding limitations and the short data collection period required by the institute, researchers solicited the minimum suggested number of participants (three) to participate in the 45-minute testing situation. One member of the media, one long-time agricultural professional, and a new Agriculture Institute member were recruited for the testing. Researchers felt that this was an adequate cross-section of the site's various audiences. The study's investigator trained an outside observer who was unfamiliar with the site and the agricultural organization to ensure that all participants received the same scripted instructions from an unbiased researcher. All sessions were videotaped for later analysis by the lead investigator.

Individual participants first explored the site and described to the observer what they saw, what they liked, and what they disliked. Participants were then given the task of locating information and statistics about the current state of the agricultural industry in Florida. Participants described their thinking processes as they worked through the site. Throughout the testing, the facilitator took additional notes on participants' use of the site. These notes supplemented the video analysis. The investigators analyzed all field notes and videotaped sessions in light of current research regarding Web site usability and design and made final recommendations for site improvement.

Lastly, the investigator used the Internet to determine the visibility of the site on major search engines, as this was a concern of the institute. The researcher entered the search terms "Florida agriculture" and "Florida Agriculture Institute" into the top three search engines (Google, MSN, and Yahoo!) (Burns, 2008) to determine how easily new users could locate the site.

## Results

### *Web Survey*

A total of 10 individuals completed the online survey that was posted on the Agriculture Institute Web site. While this sample of 10 participants cannot be generalized to the site's entire audience (at the time of the analysis, 703 unique users had visited the site during that year), it does give some insight into the users of the site during the 2 months that the survey was live. Seven out of 10 of the respondents were board members; one was a government policymaker, and one was an agricultural marketer and Web site designer. Six of the respondents were female, and the group's experience in the agricultural field ranged from 2 to 30 years. When asked if they would recommend this site, 8 would recommend the site and 2 would not.

Respondents were asked to indicate on a 5-point scale (1 = *strongly disagree* and 5 = *strongly agree*) whether they agreed or disagreed with a series of statements. The majority of respondents were neutral on the appeal of the site, the ease of navigation, the relevancy of the site, and the design of the site in helping locate information. Respondents' feelings regarding the ease of locating materials, the quantity of information available, the interactivity of the site, and the currency of the site's information were slightly negative (Table 1).

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**Table 1.** Means of Respondents' Perceptions of the Florida Agriculture Institute Web Site ( $n = 10$ )

Question	M	SD
The information is trustworthy.	4.44	.73
The Web site is easily accessible.	4.22	.97
The information is credible.	4.22	1.30
The materials are easy to use.	3.89	1.05
The materials are of good quality.	3.67	.87
It is easy to find information on the site.	3.67	.87
It is easy to contact the organization.	3.56	1.33
It is easy to locate information I need.	3.44	1.01
The navigation structure is easy to understand.	3.33	1.00
The design of the site is helpful in finding information.	3.33	1.00
The site is visually appealing.	3.22	.97
The materials are relevant.	3.22	1.20
I benefit from the content available on the site.	3.22	.67
The information is up to date.	2.89	1.27
There is a large quantity of information.	2.89	1.17
I am satisfied with the amount of interactivity.	2.78	1.40
The materials on the site were useful.	2.38	.52

Note. Based on a 5-point scale (1 = strongly disagree and 5 = strongly agree).

In response to open-ended questions, respondents commented that the site was not up to date and did not contain enough information. The questionnaire also asked participants whom they felt to be the audience of the site, and one respondent answered by asking if anyone other than members of the organization knew the site existed.

## Usability Testing

Findings from the usability testing offered further insight into the site's strengths and weaknesses. The following are a few examples of comments and experiences during the usability testing.

### News writer.

- The user felt that the story on the home page would not interest nonmembers.

- On the “membership” page, the user thought the page would pull up information on how to become a member; once on the page, the user said it would be nice if the site explained how and why a person would become a member.
- The user thought that the “newsletter” page would feature a “no-frills, 1-2 page newsletter”; when the page opened, the user said it was the most impressive newsletter he or she had seen so far. The user indicated a preference for skimming the first paragraph of every story, only printing something when the article seemed particularly useful or relevant. For the newsletter, the user felt a HTML format would be better than the PDF that was used.
- The user expected the “newsroom” page to feature press releases, contact information for media, and white papers, rather than the newsletters that were present. The user noted that the “Fact Sheets” were in a good spot, but felt that the link to the agricultural industry calendar on this page was strangely placed.

*Individual in industry (also a communicator).*

- This user entered the site and went immediately to “Ag Links,” saying he/she planned to leave the site, browse one of the listed sites, and use the “back” button to get back to the Agriculture Institute “Ag Links” page. The user felt the logos and links provided sufficient information to choose which links to select, but only because of his/her experience in the industry. The user felt that users not in the agricultural field would benefit from more descriptive links.
- The user had a hard time pinpointing anything that stood out about the site, but did say that the photos on the home page were eye-catching. The user had a positive reaction to the color logos on the “Ag Links” page.
- The user repeatedly mentioned the lack of color on the site and thought black and white was “boring.”
- The user felt the site did not provide a memorable experience, but said he/she would use it as a portal to other agricultural Web sites if searching for information about Florida agriculture.

*New board member.*

- The user’s first impression of the site was that it was excessively copy-heavy. The user reported looking for something to “pop

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out" from the home page, but said nothing did. The user stated that there was too much text in the main story on the home page, and that a teaser with a link to the full story would be more effective. While the user liked the photo that accompanied the story, he/she stated that the story itself was not attention-getting, and noted that it was from 2005. (The usability testing took place in mid-2006.)

- The user liked the newsletter, but felt that listing the months and years that the newsletters were published (rather than the volume and issue numbers) would have been preferable. The user was surprised that the newsletters were in PDF format, and would have preferred HTML versions.
- According to this user, nothing about the site's colors or logo said "agriculture."
- The user did not notice any of the links (on the left-hand side of the pages) until asked about them.
- The user entered the "press release" page and said, "Is that it?", expressing that there should be more information. The user said that the issue papers looked "boring" and "busy," and reported that he/she would never go looking for them.
- While trying to look through the site, the user got lost and confused as to his/her location, and was not sure how to get back to previously visited pages.

### *Internet Analysis*

When the researcher entered the search terms "Florida agriculture" and "Florida Agriculture Institute" into the top three search engines (Google, MSN, and Yahoo!), it was discovered that the site was not visible on all search engines. On Google and Yahoo!, the Agriculture Institute site was not in the top 50 sites returned by the search term "Florida agriculture." On MSN, it showed up at number 33. However, when the search term "Florida Agriculture Institute" was used, the site was the number one result on Yahoo!, the number three result on Google, and the number one result on MSN.

### **Discussion**

This study of the Florida Agriculture Institute Web site revealed a clearer picture of the site's usability and shed light on the possible effectiveness of a joint venture between industry and academia. While the findings showed

that the site was effective in some areas, several major areas could use improvement.

Based on the data collected through the online survey, it may be the case that the majority of current users are members of the institute and are fairly happy with the site. The responding users felt the site needed to be updated more frequently, and they had questions about the site's intended audience. Users of the site felt the quantity and usefulness of the information presented could be improved, a finding echoed in the usability testing. It is important to note that the response rate was very low for the online survey, as compared to the total number of visitors to the site; as such, findings from the survey cannot be taken alone in the site analysis. The length of the questionnaire, as well as the fact that only organization members were solicited, could have hindered the response rate. No user statistics were available for the months the survey was online, so it is hard to ascertain how many of the 703 unique site visitors from that year visited during the 2-month testing period. Further survey testing is warranted with other audiences and during different months.

The usability testing showed that information presented about the various agricultural groups in the state was useful, as was some of the other information presented about what the institute was doing. However, there may be clearer, more visually attractive ways to effectively present the information. Some of the navigation, while clear to those close to the organization, may be confusing to outside users or new users of the site. Overall, a list of over 21 specific recommendations for improvement to the Web site was given to the organization based on the research literature and the findings of the study.

It is interesting to note that all three participants in the usability testing stated that the Web site they visit most is Google or another search engine. It is therefore important to ensure that users seeking information about Florida agriculture via a search engine will be quickly directed to the Florida Agriculture Institute. Yet researchers found that the organization did not always rank high in search engine results. The designers of the site should be able to change this easily, since the Florida Ag Calendar (a site also supported by the organization) ranks high on these same engines.

### **Recommendations**

The number of respondents to the Web survey was quite low, making it difficult for the researchers to draw any firm conclusions. The study's narrow population sample—current members of the organization and users of the site—could have affected the results. In retrospect, the study researchers believe that more action should have been taken to engage a

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more diverse sample of users of the site and encourage them to complete the survey. Future solicitation could include media members, as the lab testing did. The researchers and the institute found it very beneficial that all of the organization's defined audiences were represented in the usability testing, allowing for outside perspectives on the site. While including more participants would have added value, (three participants being the minimum suggested by Krug in 2000), researchers were satisfied by the fact that the three users gave many of the same comments.

This study used a laboratory method to test Web site usability. While this is not the only method described in the research, it is one of the most frequently used methods. Through this method, the researchers were able to observe many nuances of site usability in a recorded environment. Some researchers encourage participants to visit the site in question before the testing process begins. The investigators in this study did not do so. The Florida Agriculture Institute Web site is relatively small, and the investigators wanted to observe users' initial reactions. Further research could continue to explore the effectiveness of various site-testing methodologies.

The researchers strongly recommend videotaping usability testing, since it is difficult for the tester to write down all that the participant is doing and saying. The researcher can complete a deeper analysis by reviewing the tapes. The researchers also recommend providing the tester with print-outs of all the pages of the Web site so that the tester can take more efficient notes as to what users clicked on and commented on.

The literature on usability testing emphasizes the benefits of using a tester who is not directly tied to or familiar with the site in question (Corry, Frick, & Hansen, 1997; Krug, 2000), a conclusion supported by participant comments. This practice allowed for more open dialogue from the participants, since the users were not afraid to be candid when commenting on the site. It is recommended that researchers doing similar studies follow this practice.

The study's investigators recommend that researchers fully explore the literature before conducting usability testing. Krug (2000), Corry, Frick, and Hansen (1997), Nielsen (2000), Rubin (1994), and Spool, Scanlon, Schroeder, Snyder, and DeAngelo (1999) have explored usability methodology in depth and describe the process comprehensively for new practitioners. Organizations like the Usability Professionals' Association (<http://www.upassoc.org>) are also a helpful resource.

This study offered a unique opportunity for researchers to collaborate with professional agricultural communicators to help ensure that the agricultural industry is communicating effectively. The partnership

was successful for both parties. It allowed the researchers to use a new methodology to study an emerging area of communications while giving the industry partners a usable product. In order for organizations like the Florida Agriculture Institute to effectively engage visitors in their Web sites, marketing and usability research is crucial; this partnership allowed the institute to access this information easily and inexpensively. This study not only built on the strong relationship between state agricultural communicators and the University of Florida, but also helped the organization take action to effectively improve and redesign its Web site.

When entering into a partnership like the one in this study, it is important for both parties to have clear expectations. The institute provided a small stipend for the research in return for an executive summary and presentation to the organization's board describing the findings. It is recommended that researchers seek out such partnerships. Industry professionals may not be aware of the resources and skills that academics can provide with regard to Web site analysis and testing. Participation in industry communication organizations by researchers is vital in starting up such partnerships. These partnership opportunities not only strengthen relationships between the industry and academia, but they can offer great opportunities for graduate students to learn methodology while networking. However, in such situations it is still important that advisors be fully involved to ensure that both parties receive the best experience and to foster future relationships.

### **About the Authors**

ACE member Emily Rhoades is an assistant professor in agricultural communication at Ohio State University. Katie Chodil is a doctoral student in agricultural communication at the University of Florida. ACE member Tracy Irani is an associate professor in the University of Florida's Department of Agricultural Education and Communication. This article is based on a paper presented at the 2007 Southern Association of Agricultural Scientists Conference.

### **Keywords**

Internet usability testing, Web site usability, professional collaboration, Web site design, Internet research

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