

## Assessing the Usability of Union Web Sites

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### ABSTRACT

*This study examines the usability of union websites. Unions have suffered steep declines in membership, and some see the internet as a potential ally in the attempt to reverse these declines. However, there are questions concerning unions' use of cyberspace to revitalize organizing. This study applies the Microsoft Usability Guidelines in a framework developed by Agarwal and Venkatesh (2002) to assess the usability of union websites. The union sites examined in this study scored high in terms of usability, when compared to previously assessed sites, indicating that unions are putting effort into creating useful web sites.*

### INTRODUCTION

Unions in the United States have suffered steep declines in membership over the past thirty-five years; in 1973, 24 percent of workers were union members while in 2006 that percentage has declined to 12 percent. While the decline is steep, the aggregate data mask an even steeper decline for private sector unions. In the same period of time the percentage of workers covered by unions in the private sector has moved from 24.2 % of workers covered to 7.4 percent of workers covered (Hirsch & Macpherson, 2007). This crisis for unions is further documented when one considers that the year 2004 was the worst on record for union organizing (Grossman, 2005).

In order to attract new members and reverse the declines in union membership, unions must be willing to change and to try new methods. Early research on organizing campaigns found that innovation is essential to organizing success (Fiorito, Jarley & Delaney, 1993). Relatively recently, unions have turned to the internet as a means to inform members and to reach out to the unorganized. Currently, all national unions now have web sites, and while some researchers see the internet as a potentially powerful means to reach out (Shostak, 1999), other researchers question the impact that unions' use of the internet can have on union organizing (Chaison, 2002; Troy, 2003). In any case, if unions are going to make effective use of the internet, one challenge they face is to develop web sites that are usable and that contain content that visitors to the sites will find useful. The purpose of this study is to evaluate the current usability of union websites.

### THE USE OF INFORMATION TECHNOLOGY BY UNIONS

The use of the internet has been hailed as a means to empower unions for many years to come (Shostak, 1999) and as a way for labor to reinvent itself (Shostak, 2005). Union leadership feels that an emphasis on information technology is critical for their success (Fiorito, Jarley, Delaney & Kolodinsky, 2000), and that web sites and email provide members with "voice" (a term referring to the role that unions play in giving employees a venue for expressing themselves) and that technology also aids in disseminating information to members and the public

(Stevens & Greer, 2005). Given this emphasis one would expect careful attention would be paid to the development of usable websites, but some analysts have characterized the use of information technology by unions as “slow and uneven” particularly when it comes to using the technology in organizing efforts (Pinnock, 2005). Troy (2003) argues that cyberspace has not improved union organizing efforts and will not reverse the downward trends in membership. Given that the target audience for organizing is non-union workers he thinks that the creation of “virtual unions” will have about as much success in influencing their target audience as the “union label” campaign did in persuading people to buy union-made goods.

Unions also face unique challenges posed by the web. Chaison (2005) notes three in particular: the use of employer intranets as a substitute for the traditional “voice” role of unions, the potential difficulties in organizing IT workers due to the physical and psychological distance of these employees from the workplace, and the possibility of changes in relationships with members caused by unions’ development of web pages. In other words, since unions have a function in “connecting” individuals in the workplace, moving this connectedness into a virtual world poses significant risks and new challenges for unions. Additionally, in the development of opportunities in cyberspace, unions may be diverting scarce resources to new technology initiatives that will not pan out or may undermine traditional methods of organizing (Chaison, 2002).

While Internet-savvy unions that are fully utilizing new technologies have been hailed as the labor movement’s best chance for reversing the downward trends in organizing (Shostak, 2002), unions that hope that an attractive website is all that is needed to mobilize workers could be left behind if they allow that hope to prevent them from effectively implementing other methods (Bennett & Taras, 2002). Problematically for unions, employers are also using technology to reorganize both the workplace and the global geography of work, so unions must step up their use of technology to merely to maintain pace (Nathan, 2005). Perhaps it is not that unions will gain much through the adoption of new technologies, but rather that they will have much to lose if they do not adopt them (Bennett & Taras, 2002). In either case, unions will have to insure that they pay attention to the usability of their websites or they will fall further behind.

Several studies have investigated the extent of the use of information technology (IT) by unions. Fiorito, Jarley, Delaney, and Kolodinsky (2000) in a survey of national unions, found that IT use of some nature is nearly universal, but that much variation exists in the forms of IT used (i.e. websites and email), and in the way in which these forms are applied (i.e., websites applied to either bargaining and/or organizing). On a positive note for unions, a large majority of the respondents believed that IT had improved the overall efficiency and service of their unions. Fiorito, Jarley, and Delaney (2002) combined survey data, government data, and other sources to conclude that IT use can have an important impact on organizing outcomes, but found that its impact on overall union effectiveness is mixed. In contrast, Stevens and Greer (2005) examined national union websites and found that over time there was an increase in members’ issues and members-only sections of web pages, perhaps indicating that the website usage tended to move inward toward union maintenance issues rather than outward toward organizing. Similarly, another study reported that about 70% of unions used their web sites to provide general information (Fiorito & Bass, 2002).

A review of the literature by Greer (2002) identified areas of union activity in which the Internet and email have been employed, including internal communications, external communications, bargaining activities, contract administration, and political action. Greer (2002) also examined the websites of all of the AFL-CIO’s national union affiliates with links on the federation’s website. The analysis revealed that 84% of the sites had information related to political issues while 70% had significant content that concerned members’ issues. A large number contained information about new contracts that had been signed (49% of the sites), benefits negotiated (57%), ongoing negotiations (48%), and work stoppages (44%).

While the content of union websites has been analyzed, the question of the usefulness of that content, and the overall usability of the websites, remains. In order for unions to fully utilize the internet and realize the potential benefits of cyberspace usage, they must provide websites that users find easy to use and that provide useful content.

## WEBSITE USABILITY

The concept of website usability may best be approached through a human-computer-interaction (HCI) framework, as usability is one of the key concepts that has emerged from HCI research. The Technology Acceptance Model (Davis, 1986; Davis, Bagozzi & Warshaw, 1989) suggests that the perceived usefulness and ease of use of a system will have a direct impact on intentions to use the system. Usefulness and ease of use are two aspects of usability of websites, and therefore affect the intent to use and, theoretically, the actual use of sites by the intended users. Thus, the usability of websites is of substantial interest to HCI researchers, and has been assessed in a variety of ways. Most approaches generally share two characteristics (Agarwal & Venkatesh, 2002): they employ subjective assessments by users, and they view usability as a multifaceted construct that should be measured in a variety of ways. Hassan and Li (2005) reviewed the literature to extract generic criteria of web usability and used expert review to confirm and refine the criteria, which were then classified into seven categories. Two evaluators then applied these criteria to political websites. Abinnour-Helm, Chaparro, and Farmer (2005) used the End-User Computing Satisfaction (EUCS) instrument to assess website satisfaction from a usability perspective. They found the EUCS, which measures five different dimensions of end-user satisfaction, to be valid and robust when used in a web environment, and then applied the EUCS to two types of end users, homeowners and contractors. Agarwal and Venkatesh (2002) developed a heuristic evaluation procedure to measure usability that is based on a comprehensive set of usability guidelines developed by Microsoft. Palmer (2002) reported on a series of three studies that developed and validated usability metrics; he concluded that website success is associated with download delay, navigation, content, interactivity, and responsiveness. Similarly, an analysis of 200 websites by Tarafdar and Zhang (2005) found that design characteristics, including content, navigation, and download delay, influenced usability. Finally, Sing (2004) describes a process for measuring the perceived usability of internet stores, focusing on how variations in the organization of information and processes in the stores affect usability.

Some research on usability has examined successful websites in order to extract information on the characteristics that make them effective. For example, Tarafdar and Zhang (2005/2006) scrutinized the 40 most successful websites in five different categories—retail, financial services, news & information, search & portal, and entertainment—in an attempt to identify and analyze the characteristics that made them successful. They concluded that there are six critical characteristics and that the relative importance of these characteristics varies among the different categories. Scheffelmaier and Visonhaler (2002/2003) reviewed 59 studies that examine the properties characterizing successful commercial websites and found the most frequently occurring properties to include ease of understanding and use, exceptional customer service, efficiency and speed, and a common design applied to all pages. A study by Huang (2003) which collected data from 50 websites found that most corporate websites do not make good use of multimedia capabilities and concluded that, while some usability principles have been implemented, there is still much room for improvement.

The purpose of the current study is to assess the usability of union websites; in order to begin to address this question, we examined the sites of four different types of national unions. While the content of union websites has been examined, the usability of these sites has gone largely unexplored. Perhaps the failure of cyber space, as seen by some observers, to reinvigorate union membership, is due at least in part to problems concerning the usability of unions' web offerings.

## METHODS

To assess union web site usability, we employed an evaluation procedure developed by Agarwal and Venkatesh (2002). The Agarwal and Venkatesh framework was developed in a rigorous manner in which both content and construct validity were assessed; it is a comprehensive heuristic evaluation procedure that assesses multiple components of usability, and recognizes that the different components will not be equally important to different users. The framework is based upon the Microsoft Usability Guidelines, a set of usability guidelines generated by Microsoft which are organized on the basis of five major categories, four of which have several subcategories. *Content* measures the informational and transactional capabilities of web sites and has four subcategories: the relevance of the content to the core audience; the appropriate use of multimedia content; the depth and breadth, or range and detail, of the content; and the currency and timeliness of the content. *Ease of use* concerns the cognitive effort needed to use a particular website, and consists of three categories which assess the extent to which the site: offers clear and understandable goals or objectives; is well-structured and organized; and provides users with

feedback concerning progress. *Made for the medium* concerns the tailoring of web sites to fit users' needs and is comprised of three subcategories measuring the degree to which sites: provide users with the opportunity to be part of an online community; allow technology-oriented personalization or customization of sites; and reflect current trends. The fourth category, *Emotion*, relates to the affective reactions invoked by web sites and has four subcategories concerning the extent to which a site: offers an element of challenge in order to provide a sense of accomplishment; provides an interesting story line to pique users' interest; has credibility, via individuals with ties to the site; and allows users to control the pace, or flow of information. The fifth category, *promotion*, which assesses the advertising of web sites online and in other media, was deemed not relevant to the measurement of the usability of union websites for this study and thus was not measured.

The sample for the study consisted of 48 graduate and 34 undergraduate students enrolled in human resource management classes at a medium-sized university in the Southeastern United States. The subjects assessed four different web sites; they were instructed to go to a web site and browse the site for a minimum of 10 minutes, and, after browsing the site, to complete a questionnaire. Subsequently, they followed the same process for three other sites.

This process was applied to four different union websites. We chose one website in each of four different categories of unions. Unions in the United States can generally be divided into two primary types, industrial and craft. Industrial unions have traditionally concentrated on organizing along industry lines, while craft unions focus on organizing workers in a particular skilled trade. Among industrial unions, there are also those that were concentrated historically in manufacturing industries, while some later entries into the labor organizing field emphasized the organization of service workers. Finally, a distinction also can be drawn between private sector unions and those that organize public sector employees. Thus, we chose to analyze the websites of a manufacturing union, a service sector union, a craft union, and a public sector union.

Using the questionnaire developed by Agarwal and Venkatesh (2002), subjects were asked to assess the relative importance of the four different components of usability (content, ease of use, made for the medium, and emotion) by distributing a total of 100 points across the four categories. The more important that subjects perceived a category to be for union web sites, the more points they allocated to it, with the total number of points allocated to the categories summing to 100. For each of the four categories, respectively, they then distributed the points allocated to a particular category across the subcategories of that category. Subjects were then asked to browse each web site and, after spending a minimum of 10 minutes on the site, to rate the site on a scale of 1 (extremely poor) to 10 (extremely good). Ratings were provided for each of the 14 subcategories. A weighted average of the subcategory ratings, based upon the points allocated to the subcategories, was then calculated, which provided one measure of web site usability for this study. The Agarwal and Venkatesh (2002) instrument also included a second measure of usability. Subjects were also asked to complete a three-item scale for each of the sites; the items pertained to the overall usability of the site, the overall design of the site, and the overall experience at the site. The Cronbach's alpha reliability estimate for the three-item scale was .89, and a principal components factor analysis with a varimax rotation revealed that the items loaded on a single factor.

## RESULTS

Means and standard deviations for the weightings of the four components of usability, the calculated usability measures for each of the unions, and the usability ratings—based on the three-item scale—for each of the unions are given in Table 1. Table 1 also lists the correlations between the calculated usability measure and the usability rating for each of the unions. The high correlations—ranging from .75 to .84—provide at least some evidence of convergent validity for the calculated usability measure, which, by nature, must be multidimensional in order to capture or reflect the multiple facets of usability.

The mean weightings of the components of usability indicate the importance attached to each of these categories by the users when evaluating union websites. Users placed the most importance on the content of the site, followed by the ease of using the site. Less importance was placed upon the ability to tailor a site to fit users' needs, and the least important component was the ability of the site to invoke emotion on the part of the user. Dependent samples tests indicated statistically significant differences among all of these components.

The mean scores for the usability measures ranged from a low of 6.9 to high of 8.0, on a scale of 1 to 10, with 10 signifying a high degree of usability, indicating that all of the union websites were perceived to be relatively good in this regard. Again, dependent samples tests were conducted, indicating significant differences in the mean usability scores of the web sites, with the exception of the public sector and manufacturing unions’ sites. Thus, relative to one another, the service sector union had the most usable website, followed by the public sector and manufacturing union sites—which were not significantly different from one another—with the craft union having the lowest usability scores.

We also conducted t-tests to determine if there were differences between graduate and undergraduate students in their perceptions of the relative importance of the components of usability, or in the calculated and rated usability scores of the union web sites, and found no significant differences. We performed the same tests to look for differences between males and females, and again found no significant differences, with one exception, the calculated usability score for the craft union. Thus, education level and gender had mostly no effect on the perceived importance of the components of usability or on the opinions of the usability of the sites.

**DISCUSSION**

The general purpose of a union is to represent the interests of its members by improving working conditions. In order to do this the union must gain recognition through organizing activities and maintain its recognized status by retaining its members. The use of information technology and the internet in particular has been deemed critical to the future success of unions (Fiorito et al., 2000). As mentioned earlier, all national unions have websites but simply having a presence on the web does not necessarily mean that it will be an effective tool to attract and retain members. One of the primary ways to measure a website’s effectiveness is its degree of usability. This study sought to measure the usability of four different types of union websites. The results suggest that the target unions in this study have done an effective job making their websites usable.

**Table 1: Means, Standard Deviations, and Correlations.**

	Mean	Std. Deviation	Correlation
<b>Usability Category Weightings</b>			
Content	37.9	11.4	
Ease of Use	28.8	8.13	
Made for the Medium	19.7	7.3	
Emotion	13.4	7.2	
<b>Union Website Usability Measures</b>			
<b>Service Union</b>			
Calculated	7.9	1.1	.84**
Rated	8.0	1.3	

Manufacturing Union				
Calculated	7.5	1.2		.80**
Rated	7.3	1.5		
Craft Union				
Calculated	7.0	1.3		.77**
Rated	6.9	1.4		
Public Sector Union				
Calculated	7.5	1.2		.75**
Rated	7.7	1.2		

\*\*p-value<.01

All four unions in this study scored above a 7.0 on the 10 point scale developed by Agarwal and Venkatesh (2002) ranging from 7.0 for the craft union to a 7.9 for the service union. These results compare favorably to the websites analyzed in the Agarwal and Venkatesh (2002) study. Twenty-one company websites from four different industries were analyzed in the study from two different perspectives. Subjects were asked to evaluate an airline, bookstore, auto manufacturer, or car rental website from either the perspective of a customer or a potential investor. The customer perspective matches fairly well with this study since the union websites are trying to get people to “buy” into the concept of joining the union rather than invest in a money-making venture. The customer ratings ranged from a low of 4.08 for one of the bookstores to an 8.12 for another bookstore. Only three of the 21 company websites had a usability rating higher than the service union while more than half scored below the craft union. In addition, if an average is taken for the union usability scores in this study and for each industry in the Agarwal and Venkatesh (2002) study, unions come out on top with a 7.5 average. In the Agarwal and Venkatesh (2002) study auto manufacturers average 7.20, airlines 6.73, car rental agencies 6.62, and bookstores trail with a 5.91. In isolation, the high usability scores seem to bode well for the unions, but the scores look even better when compared to the scores from the previous study. The results suggest that unions are doing an effective job at making their websites usable and accessible to those they are trying to reach, apparently even more effective than some for-profit businesses.

Despite these positive findings, future research could provide more insight into the effectiveness of union websites. The first step would be to use a sample of current union members and/or workers who might be interested in forming or joining a union. A sample made up of these individuals would better assess the target market for union websites. One limitation of this study is that some of the measured characteristics may possibly be accessible to union members but not to non-member visitors of the sites (i.e., online community, customization, some content). Including current union members in the sample would overcome this limitation and provide a more thorough analysis of the usability of the website. The purpose of the websites is to provide information to current members on union activity and to act as a recruiting tool for new members. Assessing the usability from the perspective of the people the unions are trying to reach would be valuable in determining the effectiveness of the website’s design.

The results of this study as well as future studies could provide valuable information to unions that could improve website design. This study followed the framework set out in a study by Agarwal and Venkatesh (2002) using two separate measures of usability. One is a general measure with three-items (“Rated” in Table 1) which provides very basic information on whether or not the website is perceived to be usable. The second, more detailed instrument (“Calculated” in Table 1) provides specific information relating to important dimensions of the website that

measure, among other things, the content and emotional response elicited by the website. The two scales are highly correlated, ranging from .77 to .84, suggesting that they are both capturing the degree of usability for each website. The more detailed instrument could be very valuable for unions as it can provide insight into what component of the website needs to be improved.

Future research could improve upon our results by determining which of the areas captured in the measure are most important to achieving the goals of the union. In our results, the emotional component of the website was the lowest weighted of the four dimensions and, yet, it may be one of the most important components in reaching those who are considering voting for a union or who are considering whether to become a member of a union (in a Right-to-Work state an employee, although represented by a union, may or may not choose to be a dues paying member of the union). Making an emotional connect is likely to be important when people are considering an emotionally charged issue like joining a union. If this is the case, unions should focus considerable efforts on this facet of their websites in order to improve the chances of recruiting new members to an already existing union or gaining recognition for a new local union.

A limitation of our study is the use of undergraduate and graduate students as subjects. The targeted users of union sites may differ substantially in many characteristics from these students. While many of the students, especially the graduate students, were employed at the time or had been previously employed, other types of workers may be more likely targets of union, and the results therefore could differ if these types of workers were to assess the sites.

In conclusion, this study suggests that unions are doing a pretty good job of designing their websites. This study should be seen as the first step in offering practical suggestions to improve the usability of union websites and ultimately increase the ability of unions to attract and retain members.

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