



Public life and the internet: if you build a better website, will citizens become engaged?

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Abstract

This study links uses and gratifications theory to a theory that addresses civic engagement and then applies it to create an electronic public sphere designed to encourage citizens to participate in civic life. An experimental website on the topic of the state budget was created and tested to assure maximum usability by citizens. It found that the site designed to conform to users' wants and needs in content, navigation and appearance did indeed foster positive attitudes toward civic engagement. Participants who saw the usable site were significantly more likely to have positive attitudes toward civic engagement than those who saw a site not designed for usability. The site features under the control of website creators, such as story content and site appearance, showed strong correlations with civic engagement attitudes.

Key words

civic engagement • citizenship • internet • new media • online usability • web

Much has been made of Americans' detachment from public life. Voting turnout was nearly 65 percent of the adult population in the 1960 presidential election but only 51 percent in 2000 and 39 percent in 2002 (Patterson, 2002). Fewer people are volunteering, contributing to charities, participating in community activities or even attending social events and visiting friends (Putnam, 2000). One target of criticism for this trend has been the internet; critics argue that users become increasingly removed from social life as they spend more time online (Davis, 1999). Others see new media as having the potential to enhance public communication and enrich democracy, creating a sort of civic commons in cyberspace (Blumler and Gurevitch, 2001; Papacharissi, 2004; Shah et al., 2005; Tambini, 1999). Some see both sides (Papacharissi, 2002). Indeed, studies have supported both viewpoints, that the internet either can hurt or help public life. One study was particularly insightful in explaining the discrepancies; it found that when technology services were correctly designed, they facilitated deliberative democracy, but that most existing services today had limited democratic deliberative potential (Wiklund, 2005). Still, there is no research that examines what features of a website actually enhance or impede civic engagement, despite calls for more such information (Dahlberg, 2001).

Today, almost anyone who wants to communicate with a wider audience has an online presence, including news organizations, civic networks, government agencies, political officials and candidates, non-governmental organizations (NGOs) and non-profit organizations. For communicators such as these who are interested in improving citizens' participation in public life, one fruitful area to explore is uses and gratifications theory, which helps to explain why people use the internet and related empirical research on web usability. Can a website that presents information in highly usable ways help people to engage actively in critical public issues? If that website also gives people information that meets their needs and provides the gratifications they seek, would they be more inclined to participate in public life? This study applies uses and gratifications theory and specifically, web usability findings, to create an electronic public sphere that encourages citizens' attitudes toward engagement in civic life. It is important to understand not just why people are disengaging from public life and what forms of media contribute to this, but also to discover ways to counteract this trend. Social science should strive not only to understand, explain and predict opinions, attitudes and behavior, but also to improve society by finding ways to promote social interaction and civic engagement. This study aims to help website creators discover how they can improve their online mission.

This study links two theories — Yankelovich's (1991) theory of public opinion and uses and gratifications theory (Rubin, 1993, 2002) - and employs their respective empirical evidence on civic engagement, civic journalism, social capital and website usability in order to examine whether a website that is high in usability can encourage citizens' attitudes toward civic engagement.

CIVIC ENGAGEMENT

Civic engagement is the coming together of interested groups and citizens to discuss and address issues of concern. This might include government entities, political leaders, community groups, non-profits, news organizations and individual citizens. A primary tenet of civic engagement is the opportunity for increasing citizen input on issues of public concern. It is not simply an agency or organization providing information to the public, it includes a real and meaningful opportunity for citizens to get involved in the process of discussing, deliberating and finding solutions to societal problems (Bimber, 1999, 2000; Shah et al., 2001b, 2002; Sirianni and Friedland, 2001). One prominent theory addressing civic engagement is Yankelovich's theory of public opinion, outlined in the book *Coming to Public Judgment* (1991). Here, he describes a process that attempts to restore a balance between citizens and experts. The process contains three distinct levels of public engagement in working toward the goal of developing meaningful solutions to public problems. The first is consciousness-raising, where 'the public learns about an issue and becomes aware of its existence and meaning' (Yankelovich, 1991: 63). The second is 'working through', where citizens 'confront the need for change' (Yankelovich, 1991: 64). At this stage information is actively engaged, conflicting facts are considered and trade-offs may be determined. It is the active work of weighing the options and possibilities. The third is 'resolution', where the decisions are made. Yankelovich (1991) described this level as the place where people seek greater clarity of thought on the issues, confront their own feelings and struggle to make a decision. Mass communication plays a central role in Yankelovich's theory; media organizations have the power to help people move from the first stage through the second to a successful resolution when they present examples of successes, suggest solutions and offer a range of alternatives. Usually, however, the media perform the job of consciousness-raising and then abandon the effort, leaving people to the second and third stages on their own. Typically, the process stalls and no working through or resolution that results in meaningful public judgment is ever achieved (Yankelovich, 1991). In this theory of public opinion, developed before internet use became widespread, Yankelovich only considers traditional print and broadcast media; the internet, with its greater abilities for interactivity, presents new and interesting opportunities for engaging citizens in the working through of public problems to resolution. Furthermore, with websites available to almost everyone, including non-profit watchdog

organizations and NGOs, not just traditional media organizations, this form of mass communication has even more potential and a wider audience to encourage civic engagement.

Empirical evidence of Yankelovich's theory of public opinion has been carried out under various rubrics, most notably the concepts of social capital and, specifically for news organizations, civic journalism. Putnam described social capital as the 'connections among individuals — social networks and the norms of reciprocity and trustworthiness that arise from them' (1995: 19). Putnam spent the better part of the last decade thinking about and researching civic engagement and social capital, and found evidence that both are in decline in America (Putnam, 2000). Others have responded that while some traditional forms of engagement have declined, others have actually grown in the same time period. Ladd (1998) noted the growth in involvement of Americans in religious organizations and soccer clubs. Sirianni and Friedland (2001) found numerous examples of meaningful work by civic groups. They argued that citizens displayed

a substantial capacity for civic innovation and the future of our democracy will depend on whether we can deepen and extend such innovation to solve major public problems and transform the way we do politics. (2001: 1).

The internet was not a primary focus for many of these studies because they looked at older forms of public participation. As the internet and all of its assorted connections emerged, Americans began thinking about the potential for democratic participation using this new medium. Cornfield (2000) noted several civic uses of the internet developed by entrepreneurs, including mobilizing political support, offering citizen feedback opportunities and developing discussion groups surrounding public affairs. The internet has properties that make increased participation possible, but currently it is not being used to promote increased deliberation among citizens or between citizens and politicians (Stromer-Galley, 2000); however, internet access has been shown to be a predictor of civic participation (Dutta-Bergman, 2005; Shah et al., 2005).

One concern is that internet users are younger, less engaged and more interested in entertainment than politics. Kaye and Johnson found evidence of 'a solid core of politically interested web users with a profound distrust of politicians' (2002: 132). They suggest that the internet may serve as a tool for re-engaging some citizens who otherwise might be missed. This concern of disengaged youth is particularly acute when considering heavy internet users. However, some scholars say that these fears may be overstated. Shah et al. found that: 'Time spent [on the internet] is significantly and positively related to both traditional civic participation and public attendance' (Shah et al., 2002: 976). It is important to keep in mind that though the age

range of internet users is growing, generational differences in media use still exist, with the internet being favored by younger, less civically active people. Bimber (1999, 2000) noted that this is already changing as the internet gains greater acceptance as an information source across generations. Shah et al.'s (2002) study did not find support for the idea that heavy internet use and the associated online connections developed in chatrooms and discussion groups might isolate citizens from traditional communities. This fits with other scholars' ideas that traditional and online civic engagement should not be considered separately. In fact, the opposite might be true. Bimber (1999) found that citizens who are less engaged in traditional civic life are a little more expressive in an online environment:

Information technology may entice **somewhat** less politically connected citizens across the threshold of communication and may also induce those over to express themselves more often. (Bimber, 1999: 425)

Opportunities for greater engagement and activity may lead to improved participation. Shah et al. found 'that internet use patterns more strongly influence trust in people and civic participation than do uses of traditional print and broadcast media, particularly among the youngest adult Americans (2001b: 491). This fits with the argument that web-based engagement should be considered simply as part of the greater civic engagement. Bimber (2000) argued for considering the 'integration of technologies' in understanding civic engagement, quality public deliberation and political processes and institutions. 'A good deal of what matters for civic engagement is not information technology per se, but rather the information conveyed by it' (Bimber, 2000: 331). A rather obvious extension of this — and the focus of this study — is the need for an understanding of how citizens engage and use information on websites and what might improve their efforts and experience — a civic usability test of sorts.

Throughout the literature on media and civic engagement there is an underlying assumption that a positive experience with media in some way translates into civic participation; this is particularly true of literature on the internet. There is some evidence that people who use the internet to become more educated on issues do vote more, write letters to representatives, join political organizations and engage in other forms of participation (Norris, 1998; Shah et al., 2001b). For example, people who use the internet to gather information and exchange ideas are more socially and politically engaged (Hasse et al., 2002; Jennings and Zeitner, 2003; Shah et al., 2001a). Several studies found that those who use the media for surveillance and voter guidance report high levels of political interest and political knowledge as well as a high likelihood of voting (Garramone, 1985). Much of the scholarly work tends to focus on interactions online, with no evidence of affinity for a

website leading to real-world participation. This is an area in need of empirical validation and Shah et al. (2005) provide a starting point. They found that information media use that encourages communication among citizens in fact does lead to small levels of civic participation:

Online information seeking and interactive civic messaging — uses of the web as a resource and a forum - both strongly influence civic engagement, often more so than do traditional print and broadcast media and face-to-face communication. (2005: 551)

Most of the evidence on the effects of a positive experience with a website has focused on other dependent variables than civic engagement. For example, there is a relationship between the perceived attractiveness of a website and usefulness, ease-of-use, enjoyment and actual usage (van der Heijden, 2003). Websites with multimedia features are rated more positively by users (McMillan et al., 2003). More often, theoretical scholarship makes the connection between civic participations and positive experiences such as enjoyment and actual usage. For example, Tambini (1999) states that the ability of users to seek the information that interests them and serves their interests without journalist gatekeepers removes potential barriers to participation. Indeed, it seems self-evident that websites that citizens are not using, for reasons such as difficulty in navigation or inability to find information, could not hope to foster civic participation. Only the websites that provide gratification for the uses sought will be the ones actually used by citizens; only the sites actually used by citizens will have the potential to encourage civic participation.

CIVIC JOURNALISM

Related research with a media focus has been conducted in the area of civic journalism, a 15-year-old effort to help newspapers and TV stations create contextual community coverage and provide engagement opportunities for citizens. Many of these experiments found success in improving public discussions, participation and deliberation. 'Taking Back Our Neighborhoods' at newspapers in Charlotte, NC and more than 10 years of continuing projects in Madison, WI, are just two examples of situations where civic journalism played an important role in revitalizing civic engagement. Toward the end of the 10-year existence of the Pew Center for Civic Journalism's funding of civic journalism projects, internet journalism projects were developed. Now J-Lab, an offshoot of the Pew Center for Civic Journalism, funds web-based projects that experiment with engaging people, providing opportunities for developing knowledge and considering trade-offs in their choices. Examples of this work range from games that help citizens to design and then vote for land-use projects to tax calculators that help citizens to understand better the intricacies of tax reform bills. One Pew Center publication (Harwood et al., 2000) helped journalists to put Yankelovich's process into action. This

included spending time exploring community structures, developing an understanding of the interconnectedness of residents and communities, and developing new reporting routines to capture more accurately the issues, aspirations and people in that community. The reporting focused on coverage of context, opportunities for regular citizens to be heard or get involved, and a chance for journalists to gather information valued by citizens on issues of interest to them and their communities.

For media as well as government, politicians, non-profits, public affairs groups and NGOs, an understanding of how citizens interact with online content seems as important as the content itself. Websites are 'often designed with simplistic and often unfounded assumptions about why individuals participate in politics, which may result in design flaws' (Tambini, 1999: 322). Achieving this goal requires at least three conditions: the basic equipment needed to access this network (Mason, 1994; Tambini, 1999); the essential information found on the network; and the capability to interface with, find and use the information (Mason, 1994). Mason (1994) says that any digital information service must be easy to use by ordinary citizens. This capability to find and use information is what the concept of usability is about.

USES AND GRATIFICATIONS

A significant component of media studies has been the understanding of how individuals use and respond to media differently (Egan, 1988; Miron et al., 2001). Understanding how users approach the internet brings together not only the more applied areas of usability and user-centered design, but also the more theoretical areas of uses and gratifications from communication research. Uses and gratifications theory also was developed to explain peoples use of traditional media, but it is well suited for studying the internet and, in fact, researchers increasingly have turned to a uses and gratifications approach to examine individuals' motives (Kaye and Johnson, 2002). However, little attention has been paid to how people use the internet for political information (Kaye and Johnson, 2002), and no studies could be found that specifically linked uses and gratifications to civic engagement theories such as Yankelovich's.

Uses and gratifications theory is used to understand how people use mass communication, what needs or wants they hope to satisfy, and what their motives are for the use. It is through this understanding of what the users bring to the media that researchers can understand better the outcomes of media use. This area of communication research assumes that the user is active and goal-driven in the selection and processing of media content. Communication choices are based on the hope of satisfying social and psychological needs and desires. Thus, to understand the potential effects of internet media on civic engagement, it is imperative to understand what the user is bringing to the situation (Rubin, 1993). Because the objective of this study is to understand how users approach the stimulus website, uses and

gratifications is an appropriate link between civic engagement and usability concepts.

Uses and gratifications theory has been used to study how people use the internet and what they get out of that use (Flaherty and Pearce, 1998; Kuehn, 1994; Papacharissi and Rubin, 2000). For example, Papacharissi and Rubin (2000) found that people's motives for using the internet centered on the need for information and entertainment. Weiser (2001) suggested that the effects of internet use are directly related to reasons for using the internet. He contrasted a social need with a utilitarian need for internet use and demonstrated that these needs produced different psychological effects. In one of the few studies of users' motivations for seeking political information on the web, Kaye and Johnson (2002) found the primary motives were guidance, information or surveillance, entertainment and social utility. The social utility factor parallels civic engagement behaviors, in that people motivated by this use the internet to reinforce decisions and arm themselves with information to use in discussions with others.

USABILITY

The concepts of usability and user-centered design also stress the importance of understanding what the user brings to the site. Usability has been heavily examined for the past 30 to 40 years, mostly in the computer science area. A definition of usability is the ease with which a system can be learned and used (Mills et al., 1986). This requires understanding who the users are and what they will be doing on the site (Shank, 2002). Usability is measured by how easy a website is to learn, how quickly a user can accomplish a task, how error-proof the site is, how satisfied the user is with the experience and how often users return to the site (Gould and Lewis, 1985; Hale et al., 1995; Nelson et al., 1999).

To create usable sites, users need to be involved in the entire web design and implementation process since they do not always use a site in the way that designers and programmers anticipate they would, or in the way that designers and programmers would themselves (Nelson et al., 1999). One of the main reasons for including users in the design process is to understand their needs and goals for using a specific site — the philosophy behind uses and gratifications theory. In usability studies, this is accomplished by interviewing potential users before the site's creation and testing users at each stage of the site production process (Nielsen, 2000).

Usability has three components: in addition to content, organization or navigation, and presentation of the content are central issues for usability. A clear organization structure with an easy-to-use navigation system is essential. Navigation is defined as the user's ability to find information efficiently with few barriers. If users cannot figure out the nature or structure of the site and what they can find there, they become frustrated and quickly

leave. Good navigation makes users more likely to return to the site (Krug, 2000). The final dimension of web design is presentation, which refers to the appearance of a site and how visually appealing it is (Li, 2002).

Usability testing is conducted primarily on commercial websites; we could find no literature that discussed usability testing of websites for non-commercial sites such as those of news organizations, governments, candidates, non-profits or NGOs. These types of websites hold many similarities to commercial sites focused on selling products: both try to draw attention, develop knowledge and provide value to the user. However, this type of communication is different from sales. It places more emphasis on knowledge development and less effort on persuasion. Enticing people to participate in an event or issue may be viewed as a form of participation. One big difference is that sales-focused sites spend time and money testing the usability of their sites, in order to discover what might hinder the user from completing a transaction. News, government, non-profit, political and NGO sites may use surveys or focus groups to guide site development, but we could find no evidence indicating that they test their online editions for usability: Answering simple questions about why people stop using the site or where they became confused might lead to better sites that allow citizens to become more engaged in understanding the content, potentially leading to their taking advantage of opportunities in order to become more civically engaged or politically active.

HYPOTHESES

From these theories and the empirical evidence related to each, the following hypotheses were developed and an experimental website designed and created to foster attitudes toward civic engagement to test them. The first hypothesis forms the basic premise of this study:

H1: Participants who see the experimental website will have **significantly** more positive attitudes toward civic engagement than participants who see the control site not designed for usability.

The next three hypotheses are concerned with the structural features of a website — the content, navigation and appearance — that make up the three areas of usability. With these, it will be possible to determine the importance of specific structural features to civic engagement:

H2: Satisfaction with navigation of the experimental website will be significantly correlated with positive attitudes toward civic engagement.

H3: Liking for content of stories on the experimental website will be significantly correlated with positive attitudes toward civic engagement.

H4: Satisfaction with the appearance of the experimental website will be significantly correlated with positive attitudes toward civic engagement.

The fifth and sixth hypotheses build a case that posits that a positive experience with a website increases the likelihood of returning to the site, which should translate to increased civic engagement. Research has shown that online information-seeking — such as the kind manifested by returning to a site — strongly influences civic engagement, even more so than traditional print and broadcast media (Shah et al., 2005):

H5: Satisfaction with the structural features of the experimental site - the content, navigation, and appearance indices - will be significantly and positively correlated with likelihood of revisiting the site.

H6: Likelihood of revisiting the experimental site will be significantly correlated with positive attitudes toward civic engagement.

The last hypothesis is tested to help rule out the effects of websites in general and offer more confidence in the results of the usability-designed website, in order to foster more positive attitudes toward civic engagement:

H7: Greater use of online websites in general will be significantly correlated with attitudes toward civic engagement.

METHOD

This study used a post-test, control group experimental design. The experimental stimulus for this study was a website on the topic of the state budget created by mass communication students in a class in website development. The site included stories written in a nonlinear style and had a user-friendly, easy-to-navigate design. The content was written specifically to include information that diverse citizens said they wanted and needed to participate in democracy, in a format that was visually appealing and consistent with what they said made websites easy to use. The content, appearance and navigation of the site brought to bear the knowledge from research on usability and synthesized it with civic engagement findings in order to encourage citizens to get involved in the issues about state government spending of citizens' tax money.

Usability testing throughout the design phase guided the site-building and gauged its success in these areas. The usability testing included in-depth interviews with citizens about their web use, interest in state government and budget issues before the site was created. The purpose of the interviews was to provide insight so that stories could be written that would be interesting and useful to people, and the design and navigation would be appealing and easy to use, making the information that would facilitate civic engagement easy to find. The participants were recruited by the students who created the experimental website. Each student in the class that created the experimental website was instructed to find two people, one between the age of 18 and 25 and another over 25; at least one person could not have any connection with

the university. This was done to facilitate diversity in the participants' use of websites, educational and socioeconomic demographics, rather than the common use of students as participants. Since this was experimental research, it was not meant to generalize to a larger population, but to discover if effects were present at all (Courtright, 1996). The participants were split equally between people aged 18 to 25 and over age 25.

After the usability testing was complete, the site was refined so this study could be conducted, using it as the experimental manipulation site. The goal was to have an experimental site that was constructed via usability testing to ensure that it provided users with the content, appearance and navigation they said they wanted, and that would maximize their attitudes toward civic engagement on the topic of state spending. The control group website was the official state government website on the state budget. It was created without usability tests or knowledge of any of the issues described above, which guided the creation of the experimental website. It was important that the control site was on the same topic as the experimental site in order to rule out the possibility of effects due to the subject matter rather than content, appearance or navigation. The state government's budget site came the closest to fulfilling this goal. Websites by news organizations and non-profit citizens' organizations for better government were also considered, but contained information on a myriad of topics in addition to the state budget, so they were not used as the control site.

A post-test when the site was complete involved asking some of the same participants to participate in usability testing of the experimental and control sites. The participants lost to follow-up were replaced and approximately 30 new participants recruited by the researchers using the same demographics and university affiliation requirements; this was done so that there would be approximately 30 participants who viewed the experimental site and approximately 30 participants who viewed the control site. Participants received \$10 gift cards to local restaurants as incentives. Again, random sampling was not necessary because as experimental research, it was not meant to generalize to a larger population, rather to discover whether effects were present at all (Courtright, 1996).

The participants were given a brief introduction to the purpose of the site and the usability testing and then logged onto the test site. They were instructed to surf the site freely, looking at whatever interested them most or skip over stories that were of little or no interest for 15 minutes. Next, participants were given three 'Key Task Testing' assignments to complete in five minutes (Krug, 2000). The participants' use of the site was recorded by web tracking software and they were asked to 'think aloud' as they used the site, so that the site designers could see how people were navigating the site, what they thought about its usability as they surfed, and what features users found confusing or difficult. Think-aloud protocols are the principal means

for gathering observations of the knowledge activated by people during message processing (Cacioppo and Petty, 1981; Shapiro, 1994). Cognitive processing researchers discovered that many, if not most, mental processes are not available for conscious inspection. Think-aloud protocols have been particularly useful in studies that involve problem-solving, such as the web searching tasks posed in this study, because they allow researchers to infer participants' mental strategies. These protocols show how people actually behave instead of how others would logically assume they ought to behave (Zimbardo, 1985).

The 60 participants were randomly assigned to view either the control website or the experimental website. The study was conducted in May and June 2003. After browsing the site for 15 minutes, they completed a questionnaire that asked them to evaluate the site.

The primary dependent variable in this analysis was the civic engagement index (Cronbach's $\alpha = .86$). It was operationalized with three questions, measured on a seven-point Likert scale (where 1 = 'No, not at all' to 7 = 'Yes, very much'): 'Did this site encourage you to become more interested in how tax dollars are spent?'; 'Did this site encourage you to be more involved in a social issue such as education?'; and 'Did this site help you to learn how to contact a congressman or other official?'

It should be noted that civic engagement has been treated rather broadly in research to include both behaviors and attitudes (Jennings and Zeitner, 2003). This study was interested in gauging the potential effects of viewing a specially designed website; therefore, participants' past behaviors regarding civic participation were not appropriate. Thus, only questions designed to measure participants' attitudes regarding likely future behavior were asked. We were specifically interested in the ability of a specially designed website to promote positive attitudes toward and by extension, behaviors of, civic engagement.

The independent variables include the navigation index, content index and appearance index, operationalized as follows. The navigation index (Cronbach's $\alpha = .77$) was made up of seven questions (1 = 'Not at all' to 7 = 'Extremely'): 'How easy to use was this site?'; 'How frustrated did you get trying to use this site?' (reverse coded); 'How satisfied were you with the download time of this website?'; 'How satisfied were you with the number of clicks it took to get what you wanted?'; 'How satisfied were you with the search engine on this site?'; 'How satisfied were you with the navigation bar and menus?'; and 'How satisfied were you with the links and the way they worked?'

The four-question story content index (Cronbach's $\alpha = .73$), measured on the same seven-point Likert scale as above, asked: 'How useful did you find the stories on this website?'; 'How interesting did you find the stories on this website?'; 'How believable did you find the stories on this website?'; and 'How important was the information in the stories on this website?'

The three-question appearance index (Cronbach's $\alpha = .85$) asked: 'How pleasing was the appearance of this site?' (1 = 'Not at all pleasing' to 7 = 'Extremely pleasing'); 'How much did the appearance of this site distract from the information?' (1 = 'Not at all' to 7 = 'Extremely'; reverse coded); and 'How easy would you say the appearance of this site made it to use?' (1 = 'Very hard' to 7 = 'Very easy').

One question asked participants: 'How likely would you be to use this site again?' (1 = 'Not at all' to 7 = 'Extremely'). The online use index (Cronbach's $\alpha = .77$) asked: 'How often do you go online?' (daily, two to three times a week, once a week, once every two weeks, once a month, less than once a month, never); 'How competent do you feel at using online sites?' (1 = 'Not at all' to 7 = 'Very competent'); and 'How much of your news do you get from online sources?' (1 = 'None' to 7 = 'All').

Data also were collected on whether participants owned a computer at home, the type of internet connection they had (modem or high speed internet), age and gender.

RESULTS

Sixty participants were randomly assigned to websites; 27 viewed the experimental website, 33 viewed the control site. Men made up 40 percent of the participants. The participants ranged in age from 18 to 56, the mean age was 28. Approximately half ($N = 29$) were students.

In terms of internet use, the time online per week ranged from 0 to 60 hours, with an average of 12 hours per week. Of the 60, 53 said that they go online daily, five participants said two to three times a week, and two responded that they rarely access the internet. Of the participants, 63 percent had a high-speed connection from home; 18 percent had dial-up and 4 had no home internet connection. Three had no home computer, but used one at work; 78 percent of the participants said they often have a specific purpose in mind when going online, while 22 percent preferred to surf leisurely.

Before accessing the state budget websites, 82 percent of the participants said they had little or no interest in state spending; 63 percent expressed little or no interest in state government and/or seeking out any information online on this topic.

First a manipulation check was performed to see that the experimental website was significantly different from the control site on the structural variables of navigation, appearance and content. If the experimental site was not significantly better than the control site, then any differences in the civic engagement dependent variable would not be valid. The three structural variables were entered together as dependent variables in a multivariate analysis of variance, in order to correct for chance findings of significance when multiple tests are performed. Using Wilks' Lambda, the analysis showed a significant effect for the dependent variables considered together ($F = 14.81$,

$df = 3, 55, p < .001, \text{Eta}^2 = .972$). When the dependent measures' univariate analyses were examined, significant effects were obtained for two of the three variables. The participants who viewed the experimental site liked the stories ($F = 8.01, df = 1, 58, p < .01, \text{Eta}^2 = .12$) and the site's appearance ($F = 27.95, df = 1, 58, p < .001, \text{Eta}^2 = .33$) significantly more than participants who viewed the control site. There was no difference in navigation between the control site and the experimental site ($F = .59, df = 1, 58, p = .44, \text{observed power} = .12$), so that hypothesis, H2, was dropped from the analysis.

H1 was supported: the participants who viewed the site designed for usability were significantly more likely to say that the site encouraged them to be more interested in how tax dollars were spent, become involved in a social issue and learn how to contact a government official ($F = 7.68, df = 1, 59, p < .01, \text{Eta}^2 = 1.2$). The mean civic engagement score for the test site was 8.7 (SD = 4.1), while the control site mean was 6.1 (SD = 3.3).

H3 was supported: there was a significant positive correlation between the participants' liking of stories on the experimental website and civic engagement ($r = .811, p < .001, r^2 = .66$). Greater liking of story content corresponded with the participants being more inclined to participate in civic life.

H4 was supported: there was a significant positive correlation between participant ratings of the experimental website's appearance and civic engagement ($r = .516, p < .01, r^2 = .27$). The more highly the participants rated the site's appearance, the more positive their attitudes toward civic engagement.

H5 was supported: there were significant positive correlations among the likelihood of revisiting the site and the two structural indices that were significantly different from the control site (content $r = .76, p < .001, r^2 = .58$; appearance $r = .461, p < .05, r^2 = .21$).

H6 was supported: there was a significant positive correlation between the likelihood of revisiting the experimental site and civic engagement ($r = .845, p > .001, r^2 = .71$). The participants who said that they would return to the website designed for greater usability also held more positive attitudes toward civic engagement.

H7 was not supported: there was no significant relationship between greater use of online sites of all kinds and attitudes toward civic engagement ($r = -.049, p = .809, r^2 = .002$).

DISCUSSION

This study confirmed the idea that websites designed for maximum usability that conform to users' wants and needs in content and appearance can foster positive attitudes toward civic engagement in citizens. The first hypothesis was supported, with participants who saw the experimental site saying they were significantly more interested in finding out how tax dollars were spent, becoming involved in a social issue and learning how to contact a government official than those who saw the control site. There was more than a

two-and-a-half point difference in civic engagement scores between the two sites. The finding that usable information on a well-designed site can foster civic engagement were obtained with an acid test — a topic that most citizens find uninteresting and unfathomable, the state budget. The findings showed that there was very little interest in the topic of the test site; 82 percent of participants said they had little or no interest in government spending and 63 percent expressed little or no interest in state government or seeking out any information on this topic. Despite this abysmal self-reported interest in political topics, the participants were enthusiastic about the stories and information on the experimental site, and after spending 15 minutes there, they said it encouraged them to become more interested in how tax dollars were spent, get involved in social issues and figure out how to contact a congressman or other government official. This was not the case for the site on the same topic that had not been informed by usability studies.

It is important to point out that this study did not test Yankelovich's 'working through' conception of opinion formation, which entails a rigorous and highly-structured process of deliberation involving citizen interactions over an extended time. Controlled experiments such as this one cannot duplicate faithfully the stages that Yankelovich describes in the process of coming to judgment. However, the strength of such studies is that they can determine causal relationships between specific variables while controlling for extraneous influences. Ideally, a program of research would involve research in natural settings as well as controlled experiments such as this.

Once we determined that a usability designed website could indeed foster attitudes of civic engagement, we sought to understand what structural features may be responsible. Because there were no significant differences between the navigation of the experimental and control sites, the navigation could not have had a valid effect on users' attitudes toward civic engagement. However, the hypotheses about two of the site features that are under control of website creators - story content and site appearance — showed strong correlations between users' satisfaction and more positive attitudes toward civic engagement. Story content mattered the most: nearly two-thirds of the variance in civic engagement was explained by content ($r^2 = .66$), whereas appearance explained a little more than one-fourth of the variance ($r^2 = .27$).

All accumulated knowledge from previous research on website design and nonlinear storytelling was brought to bear in the creation of the experimental site and it apparently paid off. The students who wrote the stories on this site had to put aside their training in writing ledes, nut grafs and the inverted pyramid to concentrate on developing stand-alone 'chunks' so that website users could pick and choose which to read and in what order, rather than follow the cues of writers and editors. Similarly, the site creators had to relearn the principles of design as they apply to the web medium, rather than print. Gone were the large, beautiful photos designed to attract attention; in

their place were substituted informative but smaller photos, charts and graphics. Numerous subheads were embedded in the text to help users find the information they were looking for quickly. The fact that navigation did not make a difference was somewhat surprising; however, the control site that was used was remarkably well organized and the hyperlink and menu structure extremely easy to navigate. Apparently, the usability component of navigation has been mastered more quickly by real-world web designers than the components of content and appearance. Besides allowing us to separate the three components of usability to determine which ones matter most, our use of a 'real life' website as the control, rather than one we created, allowed us to see which components to focus on in training future web creators.

H5 and H6 worked in tandem: a positive experience with the experimental site encouraged revisiting the website, which was correlated with civic engagement. Again, story content mattered most when users considered whether to visit the site again; content explained a little more than half the variance in the likelihood of revisiting ($r^2 = .58$); and appearance explained a little less than a quarter ($r^2 = .21$). Previous research shows that online information-seeking, such as the kind manifested by returning to a site, strongly influences civic engagement (Shah et al., 2005). The current study confirms that connection with these participants (see Table 1).

The last hypothesis helped to rule out the effects of websites in general, giving us more confidence in the finding that a usability-designed website encourages civic engagement. Unlike others' findings that greater use of online media in general had the ability to foster civic participation (Shah et al., 2002), this study found that mere use of any kind of online media did not have that effect; however, online media specifically tailored to

• Table 1. Means and Pearson's correlations for civic engagement, three usability variables, and likelihood of site revisit

	EXPERIMENTAL SITE <i>M</i> (SD)	CONTROL SITE <i>M</i> (SD)	EXPERIMENTAL SITE CORRELATION WITH CIVIC ENGAGEMENT (<i>r</i>)
Civic engagement	8.7 (4.1)**	6.1 (3.3)	–
Navigation	31.01 (5.6)	32.3 (7.07)	.56**
Content	15.03 (3.5)**	12.5 (3.3)	.81**
Appearance	12.04 (3.1)***	8.18 (2.5)	.516**
Revisit	3.63 (2)	3 (1.9)	.845***

$N = 60$ * $p < .05$ ** $p < .01$ *** $p < .001$

Note: Significant differences between the experimental and control site groups are reported in the first column; significant correlations for the experimental site group with civic engagement are in the third column.

satisfy people's uses and gratify their needs did foster attitudes of civic participation. Most political information online and the sites that host it are not tested to assure the creators that it meets users' needs. Instead, much of what is out there succeeds only by chance and its success is never confirmed by empirical evidence such as the kind obtained through usability testing. Surveys and focus groups about a site have value, but usability testing with real people adds a dimension these other methods cannot begin to capture. It is the difference between conscious inspection, captured by self-report measures and cognitions that are unavailable to the average and can only be person, uncovered by think-aloud techniques. If online media in general have the capacity to increase civic engagement, imagine how much more effective they can be if they are tested and then redesigned to maximize their ability to encourage people to take a more active role in public life.

This study shows that usability testing does work, and we hope that these findings encourage more website creators to employ it. This study is even more important when taking into consideration the studies (Bimber, 1999) which have found that citizens who are less engaged in traditional civic life are somewhat more expressive in an online environment. If it is indeed the case that technology entices the less politically connected to express themselves more, then these findings may be applied to reach the technologically comfortable citizens who are averse to face-to-face communication. Websites about political issues that maximize usability may be just the thing to engage these citizens. This also applies to younger people, who represented half the sample in this study; given the fact that the internet is most widely used by young people, its ability to encourage civic engagement is promising for the future of democracy.

CONCLUSION

This study has concentrated on the way that online political information is structured through usability testing of navigation and appearance issues; one index of story liking focused on the information itself. These findings concur with Bimber (2000), that what matters for civic engagement is not the technology so much as the information conveyed by it. To that we add that appearance is important. We join Bimber in calling for more studies that focus specifically on the content of the information and add to that its design. Yet this study also shows that technology does matter. The way the information in this study was structured and organized could have been accomplished only because of the unique capabilities of the web. Besides the appearance, the content on this site was written in a nonlinear style so that users could access it in the order they chose, not one chosen for them, as in traditional media. It was structured in separate, self-contained 'chunks' and made heavy use of lists, charts and graphics rather than relying on an inverted pyramid narrative. The

information was presented with entry points and clear, no-nonsense headlines to help guide readers to the information they were seeking.

Although participants' feelings of self-efficacy were not measured, it is suggested that the way this information was structured, as well as the pleasing appearance of the site, may have contributed to users feeling more self-confident about their ability to find, understand and use complicated political information. These feelings of greater self-efficacy may have contributed to more positive attitudes of civic engagement (Bandura, 1986; Kaye and Johnson, 2002). If people can find what they want and need to know quickly and efficiently, they may feel more self-confident about getting involved. If users' gratifications for specific information are obtained by websites that offer quick and easy access — that is, usability — it could lead to greater feelings of self-efficacy and thus civic engagement.

For web designers we have shown that usability testing can be employed to foster civic engagement by improving the quality and structure of online political information as well as the appearance of a site. Usability testing offers web communicators insights into how active audiences really use information and online media; no longer do they have to guess. We encourage online professionals to learn the simple techniques of usability testing that their commercial counterparts have long known and profitably employed.

As for theory, this study has made a link between uses and gratifications theory and Yankelovich's theory of public opinion. This application of two theories has resulted in new ways to improve citizens' attitudes toward civic engagement. Yankelovich's (1991) theory describes the process that results in whether or not people become engaged in issues of civic life. It specifies the steps of that process - learning of the existence and meaning of an issue, considering the facts and trade-offs and making a decision. It does not include theoretical or practical help for how media can make the process proceed from one stage to another. The theory criticizes news media for raising people's consciousness about issues in step one, but then abandoning the effort. The proscriptive advice that the theory gives to creators of media is to offer solutions, success stories and alternatives as part of step one. This is a good start, but clearly not enough. People are no more engaged in civic life today than 15 years ago when Yankelovich first offered his theory.

Today, a new form of media shows promise for encouraging civic participation. The internet has properties that make increased participation possible, but currently it is not being used to promote increased deliberation among citizens or between citizens and politicians (Stromer-Galley, 2000), yet internet access has been shown to be a predictor of civic participation (Dutta-Bergman, 2005; Shah et al., 2005).

It is proposed that uses and gratifications offers the theoretical perspective that is lacking in Yaneklovich's theory; it is the missing element that can determine the success or failure of the process. Linking uses and gratifications theory with Yaneklovich's theory would mean incorporating another step between steps one and two. After awareness had been raised of a specific issue in step one, a new step would be incorporated, designed to determine what people want and need on that topic, their motives for using websites with information on the topic and what they bring to the issue, so that the content and structure of the websites created would better meet those needs. The new step would be devoted to understanding the uses and gratifications of the audience through usability testing. It would be conducted from the beginning of any newly-created website or redesign and addition of significant new content on an existing site, proceeding through to the launching of the new or overhauled site. User testing would focus on what users want and need in the content, how the content is structured, the appearance of the site, ease of finding information, lack of errors resulting in frustration and other features that users need to have a successful experience. The result should be a website that users visit often because it gives them the information they want and need in a format they find appealing. This step after awareness would be key to determining the success of the next step of 'working through'.

This study is empirical verification of this theoretical addition; it shows that such testing can result in a website that users find more appealing and useful and that they say they would visit again. More importantly, they were significantly more likely to say they would become more active in civic life after using the site.

Practically, it may seem like a lot to expect journalists and other web creators to incorporate another set of steps into their routines. Yet what is proposed here is simple to learn and put into practice. We envision user testing becoming seamlessly integrated into the norms and routines of those who create web information on topics of civic issues, just as it has been in business and sales ventures. If web creators who sell products and services see their mission as important enough to go the extra step, then should not those engaged in the very workings of democracy — the creation of informed public opinion — also view their mission as similarly important?

This new step, as it has been conceived here, applies specifically to web-based media, but we see no reason why it could not be reconceptualized to apply to older forms of media also. We note that this is not meant to apply to breaking news or daily beat reporting, but is better used with longer projects on specialized topics such as those tackled by public or civic journalism in print and broadcast. Creators of mass media, especially journalists, are

criticized frequently for what they produce, but seldom are they given practical guidance on how to go about doing it better. This study helps to fill that void, in addition to providing theoretical additions necessary to successfully encourage citizen's engagement in public life.

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