



# Understanding the complexity of the digital divide in relation to the quality of House campaign websites in the United States

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## Abstract

This research considers the growing use of the internet by campaigns in the United States at the sub-presidential level and its relationship to the digital divide. The primary goal is to understand why candidates' websites have different levels of quality and whether this is somehow connected to the digital divide. Examining the quality of campaign websites reflects scholarly research concerning information technology, the digital divide and political campaigns and elections. I observe the relative quality of House campaign websites from the 2002 mid-term election in relation to demographic features of a congressional district including race, family income and education. The objective is to predict the quality of these candidate websites using these variables; and, subsequently, to discover whether campaign website quality has a relationship to the digital divide.

## Key words

candidate • congress • cyber-campaigning • digital divide • elections • House of Representatives • internet • media • online

## INTRODUCTION

The internet continues to be an important technological tool of the 21st century. Its rapid growth has had the residual effect of creating a technological divide between segments of the population. Known as the digital divide, this concept initially referred to the mere ownership of a computer, but later was expanded to include basic access to the internet (Davison and Cotton, 2003; Hargittai, 2002), online literacy and skills (Robinson et al., 2003; Wilson, 2000), socio-economic status (Attewell and Battle, 1999; McLaren and Zappala, 2002), education (Katz and Aspden, 1997; Robinson et al., 2003), race and ethnicity (Hoffman and Novak, 1998; Hoffman et al., 2000; Neu et al., 1999), culture (Drori and Jang, 2003), age (DiMaggio et al., 2004; Kraut et al., 1996), geography (Bertot and McClure, 1998; Strover, 1999), and international disparities (Guillen and Suarez, 2005; Morris, 2001).

The digital divide is a complex issue that reflects both political and demographic patterns. Much of the literature has focused on the relationship between political variables and the digital divide. Research concerning ongoing differences in technology use for political purposes has included political parties (Bimber and Davis, 2003; Greer and LaPointe, 2004), competitiveness of a race (Kamarck, 2003; Ward and Gibson, 2003), voting behavior (Bimber and Davis, 2003; Gibson et al., 2005), an international perspective (Kluver et al., 2007), and incumbency (Davis, 1999; Ward and Lusoli, 2005).

The literature fails to discuss the digital divide in relation to the gaps in technology usage by candidates, in relation to their congressional districts. This gap in the literature prevents systematic investigation. My analysis remedies this deficiency by examining the demographic variables present within the candidate's own district in relation to the quality of their political campaign websites.

The goal of this analysis is to provide a more systematic understanding of why variations in quality exist between congressional campaign websites and whether this disparity has a relationship to the digital divide. An analysis of this type involves a core assumption about campaigns and elections — whether members of Congress are motivated by their own concerns or act primarily with their constituents in mind.<sup>1</sup> If the former is true then an analysis of the digital divide should check if there is a predictable difference between candidates who have a site and those who do not. If the latter is true then an analysis would be best understood in terms of whether candidates in districts with particular demographic breakdowns have variable quality websites. My analysis focuses on the second level divide concerning district level constituencies. If the demographic features of a congressional district — race,

family income, education — influence the quality of a candidate's campaign website, then we will expand our understanding of the digital divide.

The normalization and equalization theories frame the theoretical questions presented by this analysis. The normalization theory (Bimber and Davis, 2003; Gibson et al, 2003; Margolis and Resnick, 2000; Ward and Gibson, 2003) suggests that the internet will not disturb established power structures. This theory is predicated on two principles, including the reliance on mainstream media to publicize and attract citizens to their 'websites' (Carlson and Djupsund, 2001; Gibson et al., 2003) and the importance of money to construct a more sophisticated website and provide technical expertise (Margolis et al., 2003).

The equalization theory (Barber, 2001; Corrado and Firestone, 1999; Hagen and Mayer, 2000) suggests that the internet may provide a leveling effect in the electoral process. This theory is premised on the relatively low cost of campaigning online, the potentially unlimited reach of the internet and the increased control one has over message. Given the continued and expanded use of the internet for political campaigning beyond 2002, understanding its relationship to the digital divide represents the groundwork for further study.

The sample includes 83 races for the House of Representatives or a total of 245 individual candidate websites. Using this sample, I observed the relative quality of campaign websites from the 2002 mid-term election in relation to the demographic features of a congressional district. The relative quality of the candidate websites is measured using a structured content analysis described in the methodology section.

## LITERATURE REVIEW

Scholars have focused on a number of demographic measures to better understand the digital divide. Using a national random survey of low-income neighborhoods, and multivariate regression, Mossberger et al. (2003) found that African-Americans, Hispanics, the poor, the elderly, and individuals with lower levels of education are all statistically less likely to have access to home computers, the internet, and email. This would tend to support the normalization theory, reflecting traditional patterns of disparity between the haves and have nots concerning technology.

### Race

Hoffman and Novak (1998) examined racial differences in internet access and use at a single time point and found in 1997 that, overall, Whites were significantly more likely than African-Americans to have a home computer in their household and also slightly more likely to have access at work. Whites were also significantly more likely to have ever used the internet at

home, whereas African-Americans were slightly more likely to have ever used the internet at school. They found that Whites were still more likely to own a home computer than were African-Americans despite controlling for differences in education. Among students without a computer in the home, White students were much more likely than African-American students to have used the internet, and also more likely to have used the internet at locations other than home", work or school. Similarly, Babb (1998) investigated home computer ownership and internet use among low-income individuals and minorities. She found that African-Americans and Hispanics were less likely to own computers, even after adjusting for income and education.

Neu et al. (1999) examined computer penetration in the United States from 1993 to 1997. In 1997, about 49 percent of Whites and 56 percent of Asians had a household computer while Hispanics and African-Americans reported a penetration rate of 22 percent. Controlling for education and household income, race continued to have a statistically independent and large impact on household computer access.

Hoffman et al. (2000) completed a comparative analysis of web usage and access across racial and ethnic groups in the United States, with a major focus on differences between Whites and African-Americans at three different points in time. Their analysis is based on primary data from three nationally representative surveys of internet use among Americans. Overall, Whites were more likely than African-Americans to have access to the internet, and to have ever used the web. Whites were also more likely to own a computer and have access at their place of employment. More recent surveys suggest that these trends are continuing (National Telecommunications and Information Administration, 2004).

### Family income

The scholarship examining family income often cites it as one of the primary factors for the digital divide and covers a number of related topics. Bucy (2000) examined internet use data from two statewide surveys, the Carolina Poll and the Indiana Poll conducted during spring 1998. Multivariate analysis revealed that income and family structure are important social determinants of access and that internet use is lowest among single mothers and lower income groups.

Attewell (2001) discovered that simply having access to computers does not guarantee success. His research concerning elementary and secondary schools illustrates how usage between higher and lower-income districts varies, with more sophisticated and intellectually challenging applications being employed in the more affluent districts. As a result, students in more

affluent school districts were more likely to retain the technical knowledge to use in the future.

An Australian study by McLaren and Zappala (2002) used data from administrative records of students and families on The Smith Family's (TSF) Learning for Life (LFL) program. The LFL program attempts to increase the participation of children from financially disadvantaged families in the educational process. All families on the LFL program are by definition low-income families. They found that households that were located in the most disadvantaged areas were less likely to have a home computer (52%) and home internet access (27%), compared to households situated in the least disadvantaged areas (67% and 35% respectively).

A household's main source of income was also associated with home computer ownership and internet access. Households whose main source of income was social security were far less likely to have a computer at home (58%) compared to those whose main source of income came from employment (72%). Similarly, home internet access was higher for households whose primary income was from employment (44%) compared to those on social security (31%).

Rice and Katz's (2003) national representative telephone survey of Americans in 2000 demonstrates that the digital divide exists with respect to both internet and mobile phone usage. Each divide is predicted by different variables, but their analysis determines that income is one of the factors associated with all types of divide. Mills and Whitacre (2003) examine the digital divide between metropolitan areas and non-metropolitan areas using a logit estimation approach with data from the 2001 US Current Population Survey Internet and Computer Use Supplement. They find that differences in household attributes, particularly education and income, account for 63 percent of the current metropolitan—non-metropolitan digital divide.

## Education

There are a few studies which demonstrate that education may be one of the best indicators for understanding the digital divide. Utilizing national random telephone surveys from 1995 to 1997 and 2000, Katz et al. (2001) uncovered a pattern for what they term the internet dropout phenomenon. They found that internet dropouts - people who have used the internet, but no longer did so at the time of their survey — were less affluent, and less well-educated users. They ultimately determined that educational achievement had the strongest relationship to the digital divide, even more than race or gender.

Shelley et al. (2004) analyzed data from a 2002 Midwest urban random sample survey of differential access to and uses of computer technology. Their analysis revealed that respondents with higher levels of education were more likely to use computers at home and work. A number of studies

connect education with other factors that demonstrate a relationship to the digital divide.

Demoussis and Giannakopoulos (2006) studied the ownership of home computers in Greece between 1997 and 2001. Utilizing a dynamic random effects probit model, they discovered that the probability of ownership is influenced by observed household characteristics such as education, family composition and income. Based on this previous research concerning the digital divide, we would expect a positive relationship between the quality of the candidate website and the district with a relatively higher percentage of Whites, higher average level of income and higher relative level of education.

There are several reasons why the internet is a problematic construct in the social sciences, especially understanding the relationship between the digital divide and demographic phenomena. The first concern involves the relative newness of the internet and its ability to evolve rapidly. As a result, few datasets have been available for empirical research. A few large-scale datasets have been obtained from online surveys, but respondents have been self-selected and non-random. As a result, it is more difficult to make any generalizations (Nei and Erbring, 2000). As the literature above demonstrates, there have also been several smaller surveys that were conducted in a limited time frame and were limited in scope.

The second concern about previous research has to do with the 'integration' of technologies. A number of technological acts are tightly connected: exchanging electronic mail, browsing for political information, making consumer transactions, and participating in chat rooms or multi-user environments. Time spent in a political 'chat room' is different from time spent sending emails to groups of neighbors about a weekend community project, and these are different from time spent viewing electronic diaries or blogs. Each area has its own distinctive culture and norms, which are not easily studied across systems or technologies. A blogger site is transient in nature, soliciting responses from all over the world on any given topic. To speak in simple one-dimensional terms regarding the internet can conceal important functional differences with distinct implications for understanding the digital divide. This further demonstrates the incredible differences across internet communication. The actual experience of a citizen with different modes of communication, such as the difference between dial-up and a cable modem, may on some occasions tend to blur the differences. This fact makes survey research concerning the internet difficult. Focusing purely on campaign websites diminishes these types of cross-analysis problems. Each of the candidate websites is self-contained and allows for surfing within an organized structure of the campaign.

## THE DEMOGRAPHIC DIGITAL DIVIDE

During the 2004 primary, Governor Howard Dean was dubbed the 'Napster' of online presidential politics.<sup>2</sup> The Dean case illustrates the use of the internet in a candidate-centered system, but also reveals that the internet may be limited by its contingent position in the political landscape. Dean developed an online community which decentralized his party campaign structure. As a result, the Dean campaign effectively removed the hierarchical structure and allowed the internet to spread his message and appeal throughout the country in part by using Meetup.com. Meetup.com is an online social networking portal that allows members to join groups unified by a common interest and facilitates offline meetings in various localities around the country. The campaign attracted 55,000 people to the Dean Meetup.com group, making it the largest of any on the website.

Governor Dean's democratic primary run for the White House in 2004, however, highlights one of the potential problems with relying heavily on the internet — *candidates may be leaving important groups behind*. In the process of relying on Meetup.com, Dean may have alienated a strong and historically Democratic constituency, namely the African-American vote.

Dean was criticized during the campaign for failing to attract African-American and Hispanic voters to his Meetup events. One reporter noted, 'Without the internet, it was likely that Dean would find support among affluent, White, liberal professionals. With the internet, he attracted affluent, White, liberal professionals who spent a lot of time online' (Gownder, 2003). Dean admitted that the internet had cultivated strong support from mostly White and the middle-class demographics but failed to reach members of the Hispanic and the African-American communities. Despite its innovation, the Dean example represents the demographic digital divide and supports the normalization theory of internet politics.

## HYPOTHESES

My analysis adds to the debate concerning the digital divide by examining the relationship between the quality of campaign websites and demographic features of a district. If there are higher levels of website quality in districts with a larger percentage of college graduates versus high school graduates, then the disparity may reflect the digital divide as well as the normalization theory. The same may hold true for districts with distinctive racial components or districts populated with lower income families. Based on the digital divide, we would expect a positive relationship between quality of the candidate website and a district with a relatively higher percentage of Whites, higher average level of family income and higher relative level of education. The variables will be discussed in the following order:

H1: Districts with higher percentages of Whites will be positively related to the quality of their House candidate campaign websites.

H2: Districts with higher levels of education will be positively related to the quality of their House candidate campaign websites.

H3: Districts with higher family incomes will be positively related to the quality of their House candidate campaign websites.

## METHODOLOGY

### Sample

This analysis of the 2002 US election websites focused on the contests for the House of Representatives. The sample includes 83 political contests for the House or 245 individual candidate races. The sample population for the websites chosen excluded races in which only one candidate had a website, because such a scenario would not allow for a comparison across candidates within a given race. The sample population for the websites also excluded certain races if external phenomena would have had a significant impact on the quality of a candidate's website, such as an untimely death of a candidate or an appointment. There were 435 House seats up for election in the year 2002. Of those, 15 were excluded due to death, resignation, or expulsion. Another 83 races were excluded because the candidates ran unopposed. There were 85 races where candidates were facing opponents who had raised less than \$25,000, and, of those candidates, 72 did not have a campaign website. The remaining races selected included candidates from the two major parties and at least one third-party candidate.<sup>3</sup>

For each race, publicly available websites were used initially to identify the candidate and then to identify his/her website. A candidate website is defined as one that explicitly advances a named individual for a specific office and is not identified as being produced or sponsored by anyone other than that candidate or the candidate's proxy. The website a candidate constructs for his/her campaign may be the most widely accessible means available for many voters to interact with the candidate and this places a remarkable premium on its quality.

### Independent variables

The demographic variables of a district to be examined are race, family income and education. Race was the percentage of Whites and Blacks; family income included the average family income of a district; and education included the percentages of high school and college graduates in the district. Each of these independent variables was broken up into two equal groups representing the highest and lowest of each population. These breakdowns were used to compare the quality of the websites in relation to these high

and low end districts to see if a pattern develops supporting the normalization theory. The quality of the websites for a district was determined by adding the weighted scores from the campaign websites located in each district. The percentages for the demographic independent variables were taken from the census report provided by the Federal Government from the year 2000. These percentages were recorded at a congressional district level.

### Dependent variable

The dependent variable is represented by the quality of the candidate websites in a congressional district. Determining the 'quality' of a campaign website is a subjective task and one that is based on what a candidate is trying to accomplish. In this study, the concept of quality is based on a combination of literature addressing political campaigns and literature concerning the internet as a common medium.

The quality of a campaign website is based on best practices and previous research.<sup>4</sup> Reavy and Perlmutter (1996) suggest several key issues that can be used to evaluate the effectiveness of a website. These include content, audience, purpose, interactivity, timeliness, appearance, and linkage. Similarly, Ireland and Nash (1999) list 10 criteria which may be used to evaluate a campaign website: (a) online credit card contributions; (b) volunteer sign-up; (c) form to collect email addresses; (d) form to collect US postal addresses; (e) links to issues; (f) newsletter sign-up; (g) sign-up for alerts; (h) events calendar; (i) updating and providing date of last update; and (j) a download time of 15 seconds or less. However, these criteria fail to list a candidate's biographical information and issue standing. The measurements of the effectiveness depend on the purposes of the website providers and users; in the case of this analysis, the extent to which websites might facilitate participation needs to be assessed.

In a study tracking the progress of 1680 state and federal websites, West (2005) found that e-government had made substantial progress in making information, services, and interactive features available online. In looking for material that would help an average citizen, the study examined the content of the websites for the presence of 32 different features, such as office phone numbers, online publications, video clips, subject index, email addresses, online contributions, and volunteer forms.

The Cyberspace Policy Research Group has developed a 'website attribute evaluation system' (WAES).<sup>5</sup> Their broad categories include transparency and interactivity. Transparency covers the organization's effort to furnish information to its users. It is subdivided into five categories: ownership, contacts/reachability, organizational information, issue information, and citizen consequences/responses. Interactivity relates to how easy it is for visitors to use the website's information. The term interactivity is defined

as 'the back-and-forth transactions between a website and the person using that site'.<sup>6</sup> It is subdivided into five categories: security and privacy, contact/reachability, organizational information, issue information, and citizen consequences/responses. This previous research informed my selection of the quality criteria used in the content analysis as well as the creation of the five dimensions.

A website's quality is based on the 'summation of 45 criteria and is listed under the following dimensions: content, interactivity, usability, transparency, and audience. The 45 criteria are coded as being either present on the website or absent. Based on previous research concerning the dimensions of campaign websites and online communities (Downes and McMillan, 2000; Preece, 2000; Stromer-Galley, 2000) and rationality, each of the criteria was placed under the dimension best associated with its purpose. This analysis assumes that campaign websites are developed and incorporated into a strategy to communicate information to the media and more importantly to the electorate.

These websites are also designed for interaction between the campaign and those possible supporters. The communication could include personal information regarding the candidate and his/her family, positions on important issues, overall campaign themes or messages, endorsements, or information that would enable an individual to contact the candidate. A candidate website's communication effectiveness may also be based on its design and function. As a result, usability is included as part of the overall quality. Language can also play an important role in the willingness to engage with a campaign website. Non-English capabilities are therefore included as part of the quality. Candidate websites were assembled based on five features or dimensions: content, interactivity, usability, transparency, and audience (Table 1).

The final quality score is the total of the 45 criteria and weighted based on the five dimensions.<sup>7</sup> The decision to weight the five dimensions differently is based in part on previous research. Content and interactivity are weighted more heavily than transparency, usability, and audience because we assume the major purpose of the campaign website is to disseminate information and interact with voters. The quality score was also weighted based on the number of criteria under each dimension. The weighted dimensions are content (25%), interactivity (25%), usability (20%), transparency (20%), and audience at (10%). Of the 245 individual level candidate websites in the sample, the average quality score was 21.9 with a minimum of 5.5 and a maximum of 38.3. For the district wide analysis, there were 83 races in the sample. The average quality score district wide was 64.93. The range was 93.8 with a low of 28 and a high of 121.9.

• Table 1 Quality criteria and five dimensions

CONTENT	INTERACTIVITY	USABILITY	TRANSPARENCY	AUDIENCE
Photos	Physical address	Non-English	Privacy policy	Citizens
Press releases	Phone number	Search engine	Reachability	Experts
Biography	Fax number	Site map	Site sponsorship	
Campaign news	Staff info	Frames	Counter	
Speeches	Events calendar	Clarity of function		
Policy statement	Toll free number	Ease of navigation		
Link to candidate	Email updates			
Link to party	Webmaster email			
Opponent info	Public forum			
Issues	Campaign store			
Endorsements	Polls			
Voting record	Tell a friend			
Multimedia	Volunteers			
Map of district	Contributions			
Links to FEC	Voter registration			
	Candidate/Staff email			
	Guestbook			
	Letters to editor			

## RESULTS

### Descriptive statistics for demographic independent variables at the district level

Table 2 shows the frequency of the dependent variable (quality of the candidate websites) in relation to race, education and family income on a district level.

The race variable includes Whites and Blacks. The results for race suggest that the average quality is only marginally higher with a larger percentage of African-Americans. Even though a district with Whites comprising over 79 percent of the population has a higher level of quality, one district with the highest level of quality (121.9) included a White population of less than 79 percent. The expectation was that there would be a stronger correlation based on the underlying theory of the digital divide. This is an encouraging finding and one that seems to contradict the digital divide insofar as it suggests that the quality of the campaign websites may not depend on whether there is a large percentage of African-Americans or Whites in a district. This would also tend to support the equalization theory.

The next independent variable to be examined is education. The accessibility of the internet primarily through computers suggests that a certain level of technical skill is needed on the part of the user. Areas with more educated constituencies are more likely to have populations technically

• Table 2 Descriptive statistics for website quality by race, education and family income at the district level

QUALITY SCORE	MEAN	STD DEVIATION	N	RANGE
Race by district				
White (under 79%)	61.9	17.1	41	28.1–121.9
White (over 79%)	67.7	15.1	42	34.8–96.6
Black (under 5.4%)	64.4	13.9	42	34.8–96.6
Black (over 5.4%)	65.1	18.5	41	28.1–121.9
Education by district				
High school (under 83%)	61.3	15.4	41	28.1–94.1
High school (over 83%)	68.0	16.4	42	34.8–121.9
College (under 24%)	60.7	14.1	42	28.1–89.8
College (over 24%)	68.9	17.4	41	34.8–121.9
Family income by district				
Under \$51,000	62.8	15.7	42	28.1–96.6
Over \$51,000	66.7	16.5	41	34.8–121.9

capable of contacting candidates running for office via the internet. It appears that there are higher levels of candidate website quality in districts having higher numbers of individuals with a college education. Studies suggest that persons active on the internet are more educated. Therefore, the higher the education levels within constituencies the more likely that the candidate websites will have a stronger level of candidate website quality. The expectation is that as a district experiences an increase in high school and college graduates there will be a higher level of candidate website quality. This is based on the literature concerning the digital divide. The idea is that a higher level of education will be tied to one's ability not only to use a computer but also to navigate on the internet. These statistics seem to support the literature that discusses the strong presence of a digital divide by education and may also reinforce the normalization theory.

The next variable to be examined is family income. Wealthy constituencies are more likely to have the means to connect with candidates through the internet. Studies suggest that users of the internet come from households with higher income levels. Based on previous research concerning the digital divide, it is expected that there will be a higher level of candidate website quality in districts and states that have a higher level of family income. Districts with an average family income level over \$51,000 have campaign websites with higher levels of candidate website quality. This also seems to support the digital divide and the normalization theory. In order to further understand these descriptive statistics, a linear regression is performed for the demographic variables.

## Linear regression: demographic variables

A linear regression was performed to determine the relationship between race, family income and education and quality of the campaign websites. As with the descriptive statistics, a median split was used for the variables (Table 3).

The absolute value of the correlation coefficient is 0.34. A 0.3 there is a weak correlation. These statistics may partly support the equalization theory and conflict with the underlying principles of the digital divide. More likely, these variables may not represent the strongest link to online campaign sophistication of a district, in comparison to political phenomena such as incumbency. Taking the digital divide and the descriptive statistics into account, one would have expected a stronger correlation between the candidate website quality of a district and education or family income. It could be that campaigns are not influenced by the demographic makeup of their districts. The drive to win may supersede any such consideration.

## DISCUSSION

What do these findings reveal in terms of the digital divide as it relates to the normalization and equalization theories of internet politics? The short answer is that the quality of candidate websites may support the equalization theory concerning the demographic variables. However, more research needs to be conducted to determine whether a relationship exists on a district-wide level. There was a weak relationship between the demographic features of a district and candidate website quality. This result ran contrary to the expectation that there would be a stronger relationship due to the digital divide.

In relation to family income significance was not achieved. This is interesting because a number of recent studies have found that class has played a role in the digital divide. In these cases, individuals with a lower income have not been able to afford computers or if they have a computer they are not able to afford the cost of connecting to the internet. These families usually do not have access to public facilities such as libraries or schools.

• Table 3 Linear regression showing the importance of race, family income and education level on website quality

VARIABLES	BETA	SIG	(95% CONF INTERVAL)	
Race (White)	.245	.079*	-.798	17.02
Race (Black)	.252	.069*	-.925	16.67
Family income	-.156	.327	-13.53	9.06
Education (high school)	.109	.524	-8.48	13.69
Education (college)	.289	.086*	-3.32	19.22

Note:  $N = 85$ ,  $R^2 = .12$ ,  $P < .1$

Poor people are unable to benefit from the potential of the internet to inform and engage. The expectation was that candidates in districts with lower economic standing would be less likely to invest in a medium that in effect would not be able to reach the populace. My analysis shows that the relative quality of a website is not strongly tied to family income.

In terms of education, a moderate correlation was achieved for districts with a higher level of college graduates. The literature also suggests a connection between the digital divide and education. One aspect of the digital divide deals with the ability of an individual to use the computer and surf the internet. This deals with technological literacy or the skills learned to use the computer and connect and surf the internet. Studies have shown a correlation between the level of education an individual attains and their ability to effectively use information technologies. The relationship between the relative quality of the candidate websites and education demonstrates a limited correlation to this aspect of the digital divide and shows that we may have more to do in order to educate the citizenry. As candidates continue to innovate they may be leaving behind certain potential supporters who are unable to get to their website.

## CONCLUSION

This study has addressed a number of important questions concerning online campaigning, technology and the digital divide. We were attempting to find out whether there was a difference between the quality of websites in congressional districts where individuals might be less likely to access and surf the web. This analysis demonstrates in part that a district could be mostly White, have a higher percentage of college graduates or a higher average family income and yet candidates could still have quality scores almost equivalent to those in a district with a greater minority population, a lower percentage of high school graduates or a lower family income. This was an unexpected result because the digital divide is based on the premise that certain demographic groups are being left behind technologically.

This result could also be a reflection of campaign financing. While there might not be a significant relationship between the quality of the candidate websites and the demographic makeup of a district, this could be an indication of the increasing amount of money being spent on political campaigns. It is possible that a campaign is making a choice to use the internet because of its relative low cost and reach. If this is the case, it may not entirely reflect on the impact of the digital divide among the electorate. However, if candidates were motivated in part by their own constituency, one would assume that their communication style would reflect their district.

The trend appears to be that most if not all political campaigns will develop and maintain a presence on the internet in 2008. Just as a candidate attempts

to raise money to increase the chances of winning, this same candidate may also start to rely more heavily on the unique features of the internet to give him/her the slightest edge in an election year. When we move closer to a saturation point of online campaigning, it may become more difficult to differentiate the quality of the candidate websites. As information technology becomes increasingly ubiquitous, it is both displacing old forms of communication and becoming a seamless backdrop to other persistent, traditional forms of communication. Technologies change and evolve over time but the trend toward lower and lower marginal costs of information and communication will probably continue for the near future. More and more candidates will use the internet to communicate with as many potential supporters as possible in order to secure an election victory. Future research should continue to examine this relationship and whether the digital divide has an impact on internet campaigning. The digital divide as a concept should continue to be examined to figure out if any inroads have been made or whether there are still significant differences based on demographic features.

## Notes

- 1 For further reading on the motivations of Congress please consult David R. Mayhew (1974), Richard F. Fenno (1978), R. Douglas Arnold (1990) and Richard L. Hall (1996).
- 2 Napster is an online music file-sharing network that pioneered music swapping on the internet.
- 3 Third parties included Green, Reform, Libertarian, Constitution and Natural Law, and candidates labeled as Independents.
- 4 Readers interested in further research concerning criteria used for coding internet quality should consult the literature review.
- 5 Readers interested in their entire list can view the Cyberspace Policy Research Group, URL (consulted June 2004): <http://www.cyprg.arizona.edu/waes.html>
- 6 For more on the definition of interactivity see Reavy and Perlmutter (1996).
- 7 Quality criteria were rationally assigned to the five dimensions based on the studies discussed in the literature review.

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