



# Achieving E-Government for All: Highlights from a National Survey

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## Preface

*Achieving E-Government for All* provides the latest results on how governments are responding to the serious challenge of making their online services accessible and relevant to all people, regardless of their abilities, skills or economic situation.

The good news is that governments are beginning to take their constitutional and legal obligations seriously to provide services to the public without discrimination. The Benton Foundation and the New York State Forum applaud governments working seriously and creatively to make their online services relevant to the general public. In 2003, for example, a larger percentage of local, state and national government agencies complied with minimal Web accessibility standards.

The bad news is a great deal of room exists for improvement. Information on most government websites is skewed to the needs and abilities of highly educated English speakers. For low-literate populations, the Web remains an untapped resource. People with disabilities, such as those with visual impairments, continue to struggle with government websites that don't address their needs. And the emerging practice of fee-based online services penalizes the poor, who would reasonably expect essential information and services to be available at no cost. Tens of millions of Americans cannot avail themselves of essential services, since government information and services are not offered appropriately to accommodate their needs:

- ☞ 112 million Americans were not online in early 2002, according to the U.S. Department of Commerce's *A Nation Online* report;
- ☞ 90 million adult Americans are defined as low literate, based on the findings from the National Assessment of Adult Literacy (1992);
- ☞ 53 million Americans have some level of disability, says the U.S. Census Bureau (1997); many of whom (e.g., people with visual impairments) have trouble interfacing with most websites;
- ☞ 25 million adult residents speak a non-English language in the home, data also from the U.S. Census.

Clearly the gap between public need and government action is more than a mere subject for academic debate. Inaccessible, unreadable government websites affect real people -- those who often can no longer find what they need in the offline world, as governments migrate critical information and services to cyberspace. In some instances, brick-and-mortar government offices have closed their doors to cut costs, leaving behind a friendly message: "for further information or assistance, please visit our website." For folks who are offline or lack the skills or abilities to access e-government services, this message is not helpful.

As government officials transfer day-to-day responsibility of their websites to technicians and webmasters, there is often benign neglect of underserved citizens whose needs may be outside the realm of the experience of well-educated, high-tech professionals. This reality

reflects less on the webmaster and more on higher-level decision-makers who fail to give priority to social inclusion as a primary duty of government of, by and for the people.

The Benton Foundation and NYS Forum come to this issue based on a perceived dearth of leadership in the field. It appears websites are constructed and built out with little attention paid to how they might exclude millions of people from using them. When governments focus more on cost savings than on usability, often costs are not eliminated but shifted to vulnerable populations whose needs are neglected in the transfer from paper to electronic formats. At least this is the effect, if it is not the intention. We hope this report and the public discussion it generates will constitute a wake-up call issued to governments and their partners to move more quickly, prudently and creatively to broaden accessibility to critical online services.

In order to discover the extent of this challenge, and shed some light on what we should do to fix it, we commissioned e-government expert Darrell M. West, director of the Taubman Center for Public Policy at Brown University, to offer this report. Spearheading an exhaustive annual review of more than 1,600 government websites, Professor West provides credible evidence regarding the accessibility and readability of government websites. Rather than merely letting these facts speak for themselves, Professor West also offers insight into ways policymakers can act strategically to usher in what the Benton Foundation and the New York State Forum are calling “E-Government for All.”

The Benton Foundation and the New York State Forum are concerned that governments’ headlong embrace of the Web may present new barriers to the public’s ability to access government information and services. What surfaces through the survey results is a troubling, consistent pattern of government websites failing to address the needs of their audience, the general public. Based on data collected by Professor West, it would seem that the average government website is designed to address the needs of well-educated, relatively affluent, English-speaking citizens lacking disabilities, such as visual impairment.

At a basic level, governments still need to provide greater opportunities for people to access the Internet, not just in public venues but also in the home, since millions of Americans remain offline. They also need to help build people’s skills to use these tools to meet their personal needs, including finding better employment, supporting their families and accessing important social services. Fully funding libraries and community technology centers is a good point of departure to provide public access as well as personal assistance in developing a comfort level with Internet-based content. We hope this report sparks reflection and action on the part of those who can make a difference in ensuring the democratic flow of public information and services in the digital age.

This report also serves as a focal point for our “E-Government for All” virtual conference ([www.egov4all.org](http://www.egov4all.org)), a unique online gathering of policymakers, researchers and community leaders running the first two weeks of November 2003. Our report is certainly not the last word on the topic, and the conference offers a venue to gather a diversity of perspectives, including international ones, to enrich this much-needed dialogue and spur policymakers to action.

There are those who might say we are ignoring our own advice regarding accessibility in locating these conversations in the remote reaches of cyberspace. Yet, the audience for this particular event is expressly the policymakers and other leaders whose choices and actions have profound consequences on marginalized people. That said, we can all try harder and rededicate our organizations to becoming more inclusive, drawing strength from the profound expression of American diversity that will only intensify in the years to come.

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*October 2003*

## Introduction

City, state and national governments in the United States have made considerable progress at getting services online. According to recently released Brown University studies, 68 percent of federal sites, 44 percent of state ones and 48 percent of city government websites offer online services. These numbers are up over recent years and demonstrate the success officials have achieved in bringing the advantages of technology to businesses and slices of the general public.

Despite the extensive progress made in upgrading government offerings, several pressing policy issues remain for government officials. For example, not all Americans are sharing in the fruits of technology: there remain well-documented differences in access and digital literacy, with poorer people and communities of color being less likely to have Internet access or to make use of electronic information and services. Reports such as the Benton Foundation's *Bringing a Nation Online* and the Pew Internet and American Life project's *The Ever-Shifting Internet Population* demonstrate that there is still much work to be done when it comes to bridging the digital divide.

In addition, there are challenges concerning the accessibility of digital government for people with disabilities. Individuals who have a visual disability, a hearing impairment or who face other physical challenges do not have the same access to online content as the non-disabled. Many government agencies are not designing their pages in accessible ways or are not taking advantage of technologies that facilitate usage. With the U.S. Department of Education's National Adult Literacy Survey revealing that half of Americans are reading at the eighth-grade level or lower, many websites are also inaccessible because they are written at too high a level for many visitors to comprehend. Complex words and sentences limit the utility of digital government and deny the advantages of e-government to large populations of American society.

In this report, we use data presented in this year's Brown University e-government studies of city, state and national government to highlight six policy issues facing the public sector. In particular, we look at (1) disability access, (2) readability, (3) non-English language accessibility, (4) interactivity, (5) equity of access across agencies and (6) user fees and premium sites. For each topic, we discuss problems of equity and accessibility in e-government and offer ways officials can think about dealing with these issues. The report concludes by presenting several guidelines to be considered when formulating e-government policy and identifying other helpful resources related to these topics.

### 1. Disability Access

Since all people have the right to benefit from new opportunities that information and communications technologies offer, it is incumbent on government agencies and their vendors to integrate all users into the digital age. While many tools and technologies are made to favor certain groups over others, by intention or omission (such as a rotary dial phone or the numeric pad on a computer keyboard made to favor right-handers), others are increasingly submitting to the principles of universal design. With considerable forethought and extensive testing of people with disabilities, universal design means that many biases are "wrung out" of a flexible, adaptive tool or technology. The design of mainstream products

built to avert segregating and stigmatizing users avoids having to make costly retrofits as a result of market choice or legal sanction. There are a number of guides to universal design, usability and accessibility, some of which are listed in the resources section at the end of this paper.

In this year's studies, we examined the accessibility of government websites by employing the automated online *Bobby* service at [bobby.watchfire.com](http://bobby.watchfire.com) to test them. For each test, we entered the website address of the particular agency being evaluated and used this software to measure agency compliance. We relied on two different indicators of website accessibility: compliance with the priority one guidelines recommended by the World Wide Web Consortium (W3C); and compliance with the legal requirements of Section 508 of the Rehabilitation Act. Many of the standards in Section 508 are consistent with priority one guidelines, while five of the standards (§1194.22 [l], [m], [n] and [p]) are different. Sites were judged to be either in compliance or not in compliance based on the results of these tests.

In this year's study, 47 percent of federal sites satisfied the W3C standard of accessibility, 33 percent of state sites did and 20 percent of city government sites met the test. With the Section 508 guidelines, 22 percent of federal sites were in compliance, compared to 24 percent of state sites and 13 percent of city websites.

The wide variance in compliance across levels of governments suggests the need for education and stronger enforcement action in e-government. City governments run considerably behind state and federal sites in making their sites compliant with disability standards. The federal government needs to provide resources for this policy area so that all levels of government can provide disability access. There has been a federal push in recent decades to improve accessibility for traditional "bricks and mortar" government, but not the same kind of effort for digital government. This interferes with the ability of the disabled to take full advantage of the e-government progress that has been made in recent years.

Beyond the governmental area, nonprofit groups can play a constructive role by publicizing "best practices" in terms of website accessibility, such as the CPB/WGBH National Center for Accessible Media. Agencies that do an exemplary job should be officially recognized for their accomplishments. They deserve financial incentives that encourage them to keep working hard in this area and give lower-performing sites incentives to do better at providing disability access. Indeed, in these trying fiscal times for government at all levels, the need for direct, categorical support for making e-government accessible to all is highly apparent and underscored by the findings of this study.

## 2. Readability

Literacy is defined by the U.S. Department of Education as "using printed and written information to function in society, to achieve one's goals, and to develop one's knowledge and potential." As noted earlier, about half of the American population reads at the eighth-grade level or lower. A number of writers have evaluated text from health warning labels to government documents to see if they are written at a level that can be understood by citizens. The fear, of course, is that too many government documents and information sources are written at too high a level for citizens to comprehend.

Since government websites are text based, clearly readability is a basic consideration if users are to comprehend what's online. To see how government websites fare, we used the Flesch-Kincaid test of the grade-level readability of the front page of each government website that we studied. The Flesch-Kincaid test is a standard reading tool evaluator and is the one used by the U.S. Department of Defense. It is computed by dividing the average sentence length (number of words divided by number of sentences) by the average number of syllables per word (number of syllables divided by the number of words).

The average grade readability level of American government websites is at the eleventh grade, which is well above the comprehension of many Americans. Sixty-three percent of federal sites read at the twelfth-grade level, while 68 percent of state sites are at that level, and 70 percent of city sites are legible at the twelfth-grade level. Only 12 percent of state and federal sites and eight percent of municipal sites fell at the eighth-grade level or below, which is the reading level of a major segment of the American public.

Inattention to readability limits the usefulness of government websites for visitors who cannot comprehend online information. In particular, reports, databases and online services need a level of readability that matches the skills of the target audience. Officials must recognize the importance of communicating with a broad range of visitors with different levels of educational attainment and literacy. Those who are responsible for authoring and editing government documents must integrate content readability into their editorial processes. It will require a program of training, skill building and incentives to equip and encourage agency staff to write and edit in a simple and readable style. Agencies must realize that achieving readability will not come without financial cost.

At a minimum, government agencies should conduct their own self-tests of documents, websites and service procedures to make sure they are comprehensible to a reasonable range of citizens. Agencies, of course, vary in their clienteles. Content producers and writers should gauge their target audience and write to be intelligible to these groups while government agencies should set a ceiling on the readability level for generalized content. There are a variety of commonly available software packages that can help officials determine the readability level of information they place online. Agencies could also develop online materials accessible to all federal employees that give concrete examples of documents written at various grade levels in order to help federal copywriters to recognize the difference between documents written for the twelfth grade versus the eighth grade, for example.

In our research, we found little correlation between agency type and readability level. Agencies that served individuals who were generally less educated paradoxically often had higher grade-level readability than those whose content might attract more highly educated users. So clearly much more attention needs to be paid to readability as an important accessibility barrier for government websites. Much like disability access, readability should be considered an integral aspect of website accessibility and not an add-on.

### **3. Non-English Language Accessibility**

Some people who visit government websites do not speak or read English or speak/read it poorly -- over 25 million people in the U.S., for example, prefer to speak a language other

than English at home. To see how well agencies serve non-English speakers, we tabulated the extent to which sites provide bilingual content access, either through translation of relevant information or by incorporating translation software that would allow people to undertake their own translation.

Our results indicate that governments in the United States are making slow progress in providing foreign-language accessibility. In 2003, 40 percent of federal sites, 12 percent of state sites and 16 percent of city sites offered some type of foreign-language translation. These numbers are up from previous years for state and federal sites. In 2000, only four percent of these sites featured foreign-language translation. This rose to six percent in 2001, seven percent in 2002 and 13 percent in 2003.

It is especially perplexing why more progress has not been made in this area. Providing access to languages other than English does not require a high-tech solution. It could be as simple as adding links to free document translation tools, such as Babel Fish or Systran, along with instructions so that users can obtain their own translations. While these tools are hardly a panacea for content translation, they are certainly better than nothing. Of course, it could become costly for agencies to translate entire websites, but there is content on many websites that must be made available in non-English languages. It is up to agencies to identify these essential documents and services and prioritize their translation among other agency commitments. This should be a priority for government officials. This issue is related to the readability issue, since documents will be easier to translate if they are written with readability principles in mind.

#### **4. Interactivity**

One of the most promising aspects of e-government is its ability to bring citizens closer to their governments. In our examination of government websites, we looked for several key features that would facilitate this connection between government and citizen: email contact information, comment or feedback sections, automatic email updates and the ability to personalize websites to the visitor's particular area of interest.

We found mixed results, depending on the particular kind of outreach. Most sites provide email contact information (93 percent of federal sites, 90 percent of state sites and 71 percent of city sites). These numbers are up over preceding years. In terms of areas to post comments or provide feedback through surveys or chat rooms (other than through email), 52 percent of federal sites, 23 percent of state sites and 35 percent of city sites provide some means for visitors to offer reactions, suggestions or criticisms.

Automatic updates and website personalization still are relatively infrequent. Only 32 percent of federal sites, 11 percent of state sites and eight percent of city sites have a means to send automatic updates on specific issues. This information can be in the form of a monthly e-newsletter highlighting new information or email alerts notifying citizens when something relevant to their area of interest has become available. Some states allow visitors to designate themselves as students, tourists or businesses and customize the website to their particular interest. This gives visitors more power over website content and allows them to use the technology in a nonlinear manner. They can search and manipulate information in a manner

that serves their particular needs. However, very few sites -- five percent of federal sites, two percent of state sites, and four percent of city sites -- offer any type of personalization feature, whereby website visitors can register preferences that allow them to customize the site to their particular interests. This may not be a deficiency on the part of government websites, as the technology behind personalization of websites is highly controversial. Often, personalization is accomplished through “cookies,” which are used to identify users and store information about them. Many privacy advocates, though, view cookies as an unwarranted intrusion into civil liberties.

Feedback mechanisms are important for websites because most agencies do not have budget resources to conduct surveys or focus groups. Some government officials have told us their only feedback mechanism is their telephone complaint line. When complaints rise, they know they have a problem, and they seek to address it.

Unfortunately, this puts government in a reactive mode. Officials cannot respond to problems until specific issues have been highlighted. Rather than merely reacting to complaints, it would be more useful to be proactive and develop feedback devices such as online surveys and satisfaction forms that provide regular, ongoing, and systematic feedback on website materials. Volunteer citizen advisory boards could be formed to solicit participation and feedback from concerned stakeholders. Such efforts serve to put government officials in a stronger position to direct future e-government efforts.

## **5. Access Across Agencies**

Accessibility varies considerably by agency type. At the state and federal levels, there are interesting differences across agencies in terms of disability, data, online services and readability. Economic development sites were the least likely to be accessible to people with disabilities. Health and housing agencies were the most likely to offer non-English language translation. Health departments were the most likely to have databases, while budget departments were the least likely. Economic development sites were the most likely to offer online services, while budget departments were the least likely.

Readability also varied by the type of agency. For example, corrections departments had the highest percentage (83 percent) of websites written at the twelfth-grade level. Other agencies that have a high percentage of sites written at the twelfth-grade level are budget (81 percent), economic development (79 percent), elementary education (74 percent), housing (69 percent), health (69 percent), human services (67 percent) and taxation (46 percent). For more details, see the full e-government report at [www.insidepolitics.org/egovt03us.pdf](http://www.insidepolitics.org/egovt03us.pdf) (Adobe Acrobat version) or [www.insidepolitics.org/egovt03us.html](http://www.insidepolitics.org/egovt03us.html) (accessible HTML version).

The mismatch between agency type and accessibility and readability suggests the need for government officials to recognize their mission and tailor their e-government activities to the nature of their clientele. Readability levels should match the bulk of the visitors who make use of the agency’s website. Disability access should be part and parcel of universal design, and should be unvarying by agency type. Government offices should seek to be comprehensive in posting information, reports and data online; however, this should not

preclude other means of accessing information, such as printed materials and automated telephone systems.

## **6. User Fees and Premium Sections**

The final aspect of equity and accessibility concerns financial barriers to e-government use. With governments at all levels facing fiscal difficulties, we have been charting the extent to which public-sector websites have started to move toward user fees or premium sections requiring payment for entry. A user fee is an extra fee tacked on to the ordering of an electronic report or service, while a premium section fee is a payment or subscription required for entry into particular areas of a website, such as business services, access to databases or viewing up-to-the-minute information.

In general, we have not found that American governments at any level are relying very much on user fees or premium section charges. None of the federal sites, three percent of state sites and seven percent of city sites employed user fees. Less than one percent of the national, state or city sites had premium sections requiring payment for entry or access to a portion of the website. This is encouraging because user fees and premium sections create the possibility of a two-tier society based on those who can afford information and those who cannot. E-government should not contain barriers to usage based on the ability to pay. Bricks-and-mortar agencies have developed a variety of ways to serve different members of the population. Libraries provide books to diffuse knowledge through public access. Public areas in agencies allow access by those who do not have computers.

It should be noted that online financial transactions, whether government-related or not, may pose challenges to low-income people who do not possess a credit card or those who more generally may not feel comfortable providing financial information online. It is known that comfort levels with electronic transactions is a function of the length of time a user has been online, such that new Internet users are less likely to reveal personal information than those for whom the Internet is now second nature. Alternative methods of payment and face-to-face transactions are still paramount for a large segment of the population.

User fees and premium sites compromise the principles of equal access to government by making it more difficult for the poor and needy to use public resources. Government agencies should continue their general avoidance of these fees. In an era of fiscal tightness, it is tempting to expand user fees and premium sites as a way to finance e-government. This temptation should be resisted because it undermines equity of access and the ability of governments to attract new users to their websites. Anything that constrains public access compromises the ultimate goals of e-government.

## **Policy Context**

The Bush Administration's 2003 E-Government Strategy and the E-Government Act of 2002 are of particular interest in light of the issues discussed in this paper. An analysis of these and other documents and legislation shows that in general concerns such as accessibility and readability are sparsely addressed.

The implementation plan for the Administration's Management Agenda for E-Government is focused on strategies to address productivity, IT costs, security and implementation of the E-Government Act of 2002. A key goal is that users of government websites be able to access services and information within "three clicks." As this paper has shown, such a goal is too limited to address the needs of a diverse array of Internet users. E-government projects are organized into four portfolios: *Government to Citizen*, *Government to Business*, *Government to Government* and *Internal Efficiency and Effectiveness*. Equity and accessibility in government websites (were it to become a priority) would likely fall under the Government-to-Citizen portfolio. It is worth noting, however, that achieving equity and accessibility may be at odds with the overriding drive for Internal Efficiency and Effectiveness.

There should be an opportunity in the next series of federal e-government initiatives to get "E-Government for All" on the federal government's agenda for improving the formation and monitoring of IT investments. Adding accessibility and readability requirements to the Office of Management and Budget's established goals and performance criteria for e-government would help ensure that agencies focus on meeting the needs of all citizens. Additionally, accessibility and readability goals should be added to the E-Government Scorecard, which is a set of criteria used to determine how well an agency is performing.

A major point of the E-Government Act of 2002 is to sponsor ongoing dialogue among the public, private and nonprofit sectors to find innovative ways to use information technology to improve the delivery of government information and services. Unfortunately, it is not clear that the concerns of marginalized citizens have been raised and addressed. In "Accessibility, Usability and Preservation of Government Information" (Section 207 of the Act), there is no mention of the issues discussed in this paper. However, the Interagency Committee on Government Information provides a forum for public consultation and the adoptions of standards. This is likely the place to take advocacy efforts and policy recommendations. In "Disparities in Access to the Internet" (Section 215), a study will be commissioned to investigate a) how disparities in Internet access influence the effectiveness of online government services, b) how the increase in online government services is influencing the disparities in Internet access and how technology development or diffusion trends may offset such adverse influences, and c) related societal effects arising from the interplay of disparities in Internet access and the increase in online government services. This is a positive step and it will be critical that any recommendations coming out of the report are fully implemented. Focus on this matter by concerned parties and advocates can help make this happen.

## Conclusion

Government officials should recognize equity and accessibility as important principles of government, principles that adhere in the physical and virtual worlds. It is not sufficient to place information and services online if there are barriers to their usage among various sectors of society. People who are poor, disabled, not highly literate or non-English speakers are entitled to an equal opportunity to access essential information and services to improve their lives.

The Internet is a tool with the potential to help all Americans become more efficient, effective, and productive members of society. Officials should redouble their efforts to make sure e-government is open to all and that vulnerable populations are not further marginalized from the benefits of technology.

## Guiding Principles for Policy Formation and E-Government Development

- ☞ No services or information should be removed or dramatically cut back from traditional means of dissemination in favor of electronic dissemination until and unless all members of the community have access to that electronic means as easily as they have to the traditional means. To borrow a phrase, there should be no net loss of information access due to e-government.
- ☞ E-Government initiatives must begin with the assumption that development and execution of fully accessible applications at the federal, state and local levels will require supplemental funding.
- ☞ Federal, state and local policy and information technology government leadership must articulate the understanding and enforce compliance with the principle that full and easy access to traditional government services is no less a requirement for all e-government offerings.
- ☞ Prior to public release, the e-government development cycle should include testing by all appropriate means to validate accessibility for all constituents.
- ☞ All federal, state and local government procurement efforts for technology and communications systems development and program applications should include provisions for full compliance with access and usability requirements appropriate to all who will use the system/application.

## Resources

The following are recommended reading for more background and guidance on the issues addressed in this policy paper.

Bobby Accessibility Test  
[bobby.watchfire.com](http://bobby.watchfire.com)

CPB/WGBH National Center for Accessible Media  
[ncam.wgbh.org](http://ncam.wgbh.org)

New York State Forum. *Government Information Focus. The Digital Divide: Understanding and Addressing the Challenge.*  
[www.nysfirm.org/documents/pdf/nysfirm\\_digital\\_divide.pdf](http://www.nysfirm.org/documents/pdf/nysfirm_digital_divide.pdf)

Pew Internet and American Life Project. *The Ever-Shifting Internet Population.*  
[www.pewinternet.org/reports/toc.asp?Report=88](http://www.pewinternet.org/reports/toc.asp?Report=88)

Universal Design Principles  
[www.design.ncsu.edu/cud/univ\\_design/princ\\_overview.htm](http://www.design.ncsu.edu/cud/univ_design/princ_overview.htm)

Universal Usability in Practice  
[www.otal.umd.edu/uupractice/](http://www.otal.umd.edu/uupractice/)

University of Newcastle. Making Accessible Webpages  
[www.newcastle.edu.au/oldsite/services/iesd/webteam/access/web/index.html](http://www.newcastle.edu.au/oldsite/services/iesd/webteam/access/web/index.html)

World Wide Web Consortium (W3C) Web Accessibility Initiative (WAI)  
[www.w3.org/WAI](http://www.w3.org/WAI)

W3C/WAI Web Content Accessibility Guidelines  
[www.w3.org/TR/WCAG10/](http://www.w3.org/TR/WCAG10/)