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Digital Divide for Those with Disabilities to Support Presidential Event

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Fact Sheet on the Digital Divide for those with Disabilities

- The digital divide for those with disabilities includes the ability to physically operate a personal computer, information appliance, and telecommunications device; Internet access, and the ability to access on-line content to its fullest.
- Based on information collected from the U.S. Census Bureau's Survey of Income and Program Participation (SIPP) during 1997, the number of individuals 15 years and older with one or more disabilities considered likely to make the use of a personal computer (PC) difficult without assistive technology is 19.6 million. These conditions include such disabilities as impaired vision, cerebral palsy, and difficulty reaching or using hands and fingers to grasp.
- The SIPP data shows that the rate people experience these types of disabilities increases dramatically with age. For those in their prime years of employment, 21-64 years of age, over 10 million people have a condition which would likely cause them difficulties in operating a standard PC, with half of them being between 50 and 64 years of age. Currently, almost 9 million Americans over the age of 65 suffer from these types of disabilities.
- In the future, as the baby boom generation ages and life expectancies increase, the rate of people experiencing disabilities that would make it difficult to use a PC without assistive technology will increase.
- The employment rate for individuals 21-64 with these types of disabilities was 42 percent – slightly over half the employment rate of those in the same age group with no disabilities.
- The college graduation rate for those 21 years and older classified as having one of these conditions is only 10 percent – less than half of that of those with no condition with a college degree. Bureau of Labor Statistics data shows that the average wage of those graduating from college is significantly higher than for those who do not graduate from college.
- The family income of almost half of those aged 21-64 with these conditions is less than \$25,000. U.S. Households making less than \$25,000 represent only 9.6 percent of those on-line. It can be inferred that the vast majority of these households are not on-line.

Clinton – Gore Administration Accomplishments in Closing the Digital Divide for those With Disabilities

- **Ensuring that the Telecommunications Revolution Benefits All.** In 1999, the Federal Communications Commission (FCC) adopted rules on Section 255 of the Telecommunications Act of 1996, which requires that telecommunications equipment and services be accessible to individuals with disabilities if readily achievable. This provision is known as the “American Disability Act (ADA) for the Information Age”. These regulations, supported by the telecommunications industry, will ensure that people with disabilities have access to a broad range of products and services – such as telephones, cell phones, pagers, call waiting, and operator services – where they previously experienced barriers. Telecommunications carriers may not install network features, functions, or capabilities that do not comply with the regulations. The regulations also ensure that information, documentation, and customer service is conducted in accessible ways.
- **Ensuring the Federal Government Provides Accessible Technology and Information.** The Clinton-Gore Administration recommended, and Congress enacted, changes to the Rehabilitation Act strengthening the obligations of Federal agencies to provide accessible information technology to their employees and customers. This enables the Federal Government to use its considerable purchasing power to move private industry towards developing universally designed technology that is accessible to almost everyone. In August 1998, the President signed into law the Workforce Investment Act of 1998, which included in the Rehabilitation Act Amendments of 1998. The revised Section 508 requires that when Federal agencies develop, procure, maintain, or use electronic and information technology, they must ensure that it is accessible to people with disabilities, unless it would pose an undue burden to do so. Federal employees and members of the public who have disabilities must have access to and use of information and services that is comparable to the access and use available to non-disabled Federal employees and members of the public. Technology developed or acquired for a Federal agency by a contractor must also comply with the standards.
- **Signing the Assistive Technology Act.** With the support of the Clinton-Gore Administration, Congress passed the Assistive Technology Act of 1998 (ATA), which continues the work of the Technology-Related Assistance for Individuals with Disabilities Act of 1988. The ATA supports a program of grants to the 50 States, the District of Columbia, Puerto Rico, and the territories to examine and remove barriers to accessing assistive technology devices and services. This program uses a variety of strategies to examine State and federal policies and implements changes to improve the provision of assistive technology. Some of the initiatives States engage in include training, technical assistance, alternative loan programs, demonstration centers, information and referral hotlines, web sites, technology expos, and the development of informational materials. Statewide networks have been established that supports the technology-related needs of citizens with disabilities in each State and territory.

Based on information collected from the U.S. Census Bureau's Survey of Income and Program Participation (SIPP) during 1997, the number of individuals 15 years and older with one or more disabilities considered likely to make the use of a personal computer (PC) difficult is 19.6 million. These conditions include such ailments as impaired vision, cerebral palsy, and difficulty reaching or using hands and fingers to grasp.

While the digital divide for those with disabilities goes beyond the ability to physically operate a personal computer, this capability is being used as a proxy until the Census Bureau comes up with a more details survey instrument as directed by the President this year.

The SIPP data shows that the rate people experience these types of disabilities increases with age. For those in their prime years of employment, 21-64 years of age, over 10 million people have a condition which would likely cause them difficulties in operating a standard PC, with half of them being between 50 and 64 years of age. Almost 9 million Americans over the age of 65 suffer from these types of disabilities.

The employment rate for individuals 21-64 with these types of disabilities was 42 percent – slightly over half the employment rate of those in the same age group with no disabilities.

The college graduation rate for those 21 years and older classified as having one of these conditions is only 10 percent – less than half of that of those with no condition with a college degree. Bureau of Labor Statistics data shows that the average wage of those graduating from college is significantly higher than for those who do not graduate from college.

The family income of almost half of those aged 21-64 with these conditions is less than \$25,000. U.S. Households making less than \$25,000 represent only 9.6 percent of those on-line. It can be inferred that the vast majority of these households are not on-line.

Projecting these trends out to the year 2025, it becomes evident that the aging of the baby boom generation will lead to many more individuals with disabilities which would make using a standard computer difficult. With the ever increasing importance of computers and other information technologies in work and in everyday life, if nothing is done these individuals will experience a digital divide we can't afford.

The digital divide for those with disabilities

The evolution of and increase in the ^{role} use of information and communications technologies ^{pls} ~~as~~ in employment, education, and commerce,

Preventing all its citizens the opportunity to take part in our

Blind people look to the Internet as a long-sought solution to the problem of communications that result from lack of sight. Problems that confront them are access to the printed word and not being able to drive.

Material typed into a computer can generate print for the sighted, Braille for the blind, or synthesized speech for either group. Because a user can travel from web site to web site without ever leaving his chair, the difficulty posed by transportation in the conduct of business is also significantly reduced. The vast majority of blind people are over age 65.

Instead of a mouse used to point and click, blind people use the tab and arrow keys to move from item to item on a screen. Therefore, our request of web site developers is that each item which can be accessed with a mouse also have provision for being accessed by the keyboard.

One of the biggest difficulties comes in trying to shop on-line using pages where the creator of the web site has failed to label the pictures he shows with a brief textual descriptions. Computer technology is not yet sufficiently advanced to recognize a picture and tell us what appears on the screen.

The presence of unlabeled graphics and the design of systems which rely only on graphics are what cause tremendous difficulties.

Designing accessibility in from the start is easier than trying to incorporate it after the fact.

Representatives from industry, government and the general public have collaborated through the Web Access Initiative of the World Wide Web Consortium which has developed and promulgated guidelines and recommendations to enhance and ensure accessibility to the World Wide Web.

Access: Whether we plan to use this technological revolution to include people who have all too often been excluded.

Make E-business friendly for blind users.

Since the Internet is only an extension of our personal computers, lessened access will mean fewer programs we can use and fewer employment opportunities. The line between the Internet and business opportunities is almost nonexistent. E-mail conducted via the Internet is the standard way to communicate.

The cost of isolating the blind, the disabled, and the senior citizens is far too high, and the benefits to all will be immense.

The evolution of and the increase in the use of the Internet as a mechanism for employment, education, communication, and commerce require us to consider the technology barriers encountered by users of the incredibly important and empowering communications medium.

Section 255 of the Act requires all manufacturers of telecommunications equipment and providers of telecommunications services to ensure that such equipment and services are designed and developed to be accessible to and usable by individuals with disabilities, if readily achievable. In 1999, the FCC released rules to implement this provision.

What are Assistive Technologies?

Assistive technologies include any item, piece of equipment or product system whether acquired commercially or off the shelf, modified or customized, that is used to increase, maintain, or improve the functional capabilities of individuals with disabilities. Assistive technologies are both "high-tech" and "low-tech".

What is the World Wide Web Consortium's Web Accessibility Initiative (WAI)?

The members of the World Wide Web Consortium commitment to lead the Web to its full potential includes promoting a high degree of usability for people with disabilities. The Web Accessibility Initiative (WAI), in coordination with organizations around the world, is pursuing accessibility of the Web through five primary areas of work: technology, guidelines, tools, education & outreach, and research & development. Guidelines for web content and web authoring tools have been published.

What is the significance of Section 508 of the Rehabilitation Act of 1973?

On August 7, 1998, the President signed into law the Workforce Investment Act of 1998, which included in the Rehabilitation Act Amendments of 1998. The revised Section 508 requires that when Federal agencies develop, procure, maintain, or use electronic and information technology, they must ensure that it is accessible to people with disabilities, unless it would pose an undue burden to do so. Federal employees and members of the public who have disabilities must have access to and use of information and services that is comparable to the access and use available to non-disabled Federal employees and members of the public. Technology developed or acquired for a Federal agency by a contractor must also comply with the standards.

Won't accessible Web sites be less appealing?

On the contrary, accessible sites have several advantages. For one thing, some people turn off graphics so sites will load faster. Without "alt" tags, graphics-intensive sites may be unusable. Also, with the growth of PDAs, and even Web site content delivered to cell phones, having text-based content is becoming more important. Because the screens on such devices are so small, graphics will probably never be a viable option. So the busy executive, waiting in an airport, who wants to check her stock portfolio on her cell phone isn't going to turn to the graphics-only site. Furthermore, with the growth of voice technology the harried commuter can have the headlines from his favorite news site read to him, but only if there is a text-based content. Finally, if a digitized video has synchronized captions, the text can be searched. Did you ever try to find a particular scene from your favorite video? If you want to find the famous restaurant scene from the captioned version of "When Harry met Sally" search on "I'll have what she's having" and you're there.

What are some of the unique problems disabled individuals face when trying to use information and communications technologies?

What does an “accessible” information technology system mean?

In general, an information technology system is accessible to people with disabilities if it can be used in a variety of ways that do not depend on a single sense or ability. For example, a system that provides output only in audio format would not be accessible to people with hearing impairments, and a system that requires mouse actions to navigate would not be accessible to people who cannot use a mouse because of a dexterity or visual impairment. Even with an accessible system, individuals with disabilities may still need specific accessibility-related software or peripheral devices as an accommodation to be able to use it. For example, in order to use an accessible word-processing program, a person who is blind may need add-on software that reads text aloud; if the word-processing program could not be made compatible with a screen-reading program, it might not be accessible.

What is Universal Design?

"Universal design" is the concept of achieving accessibility of structures, products, and services by planning for the fullest range of human function at the blueprint stage. The dual goals of universal design are (1) accessibility to the widest range of individuals and (2) elimination of the need for retrofitting and reconstruction.

Some examples of universally-designed telecommunications products include televisions with closed-captioning decoder circuitry, telephones with volume control and built-in hearing aid compatibility, and public telephones which are lowered to heights accessible to people who use wheelchairs and which also feature built-in TTY keyboards.

What is Closed-Captioning?

Closed-captioning is the display of audio portions of television and video programming as printed words on the television screen. In addition to displaying spoken dialogue and music lyrics, captions may identify speakers, sound effects, background music, and laughter. "Open" captions always appear directly on the television screen; "closed" captions are hidden as encoded data within the television signal and are displayed only when activated by the viewer. Since 1992, all televisions with screens 13" or larger are required to be equipped with the technology to display captioning, and consumers may purchase set-top decoders for older TV models.

What is Video Description?

Video description is an auditory depiction of a television or video program's visual elements for persons who are blind or visually impaired. Video description is inserted in the natural pauses of a program's dialogue, and may be used to describe visual elements such as body language, settings, and actions. In order to receive video description, an audience member must have a stereo television or VCR that is capable of receiving the Second Audio Program (SAP) "channel." The SAP feature is available on most new TVs and VCRs, and consumers may also purchase receivers for converting TV sets to stereo with SAP.

What are the major provisions in the Telecommunications Act of 1996 with regard to disability access?

- **Facilitating Partnerships with the Information Technology Industry.** The Clinton-Gore Administration brought together key representatives of the Information technology industry which led to support of the Web Accessibility Initiative (WAI) within the World Wide Web Consortium (W₃C). WAI, which is supported by the National Science Foundation and the National Institute on Disability and Rehabilitation Research (NIDRR), brings together the industry, researchers, web designers, and consumers around the world to develop standards of operation and protocols for web accessibility.
- **Creating the Access America for People with Disabilities Website.** On the 10th anniversary of the Americans with Disabilities Act, the President announced a new website, Access America for People with Disabilities -- www.disAbility.gov -- which will serve as a “one-stop” electronic link to an enormous range of useful information available throughout the Federal government for people with disabilities and their families, including information on assistive technologies.
- **Proposing Over a Seventeen-Percent Increase in Assistive Technology Initiatives for FY 2001.** The Administration’s FY 2001 budget includes \$100 million (a \$13.5 million increase) for disability and technology research at the National Institute on Disability and Rehabilitation Research (NIDRR) and \$41 million (a \$7 million increase) for Assistive Technology Act funds to States. NIDRR would launch a comprehensive technology initiative including \$5 million to provide technical assistance and training to elementary and secondary schools; \$3.4 million to carry out research, training, and technical assistance to enhance the ability of individuals with disabilities to access and use information and communications technology; and \$5.1 million on using information and assistive technology to enhance community integration and participation by individuals with disabilities. The Administration’s request also includes \$15 million to support grants that establish or maintain alternative loan financing programs. Most people with disabilities do not have the private financial resources to purchase the assistive technologies they need. If approved, this increase would significantly enhance opportunities for individuals with disabilities to take advantage of assistive technology.
- **Developing a Strategy for the Development and Transfer of Assistive Technology and Universal Design.** In July 2000, the President directed the Interagency Committee on Disability Research (ICDR) to work with the disability and research communities in identifying priority area for the advancement of assistive technologies and universal design capabilities, and to publish this information within 120 days. Following issuance of the report, each agency that participates in the Small Business Innovative Research program (SBIR) shall develop a strategy for enhancing the transfer of technology that can contribute to the needs and requirements identified by the ICDR.

People with disabilities are in all professions. The number of people with disabilities needing computers to do their work or improve their lives is increasing.

Information and communications technologies play an increasingly important role

In particular, the evolution of and the increase in the use of the Internet as a mechanism for employment, education, communication, and commerce require us to consider the technology barriers encountered by users of the incredibly important and empowering communications medium.

knowledge & skills

In the new economy, jobs requiring ~~mental~~ skill. There is the potential of unlocking the talents of those with physical disabilities.

People with disabilities are in all professions. The number of people with disabilities needing computers to do their work or improve their lives is increasing.

In just about every country, a certain percentage of people has the best information technology that society has to offer. These people have the most powerful computers, the best telephone service and fastest Internet service, as well as a wealth of content and training relevant to their lives.

There is another group of people. They are the people who for one reason or another don't have access to the newest or best computers, the most reliable telephone service or the fastest or most convenient Internet services. The difference between these two groups of people is what we call the Digital Divide.

To be on the less fortunate side of the divide means that there is less opportunity to take part in our new information-based economy, in which many more jobs will be related to computers. It also means that there is less opportunity to take part in the education, training, shopping, entertainment and communications opportunities that are available on line. In general, those who are poor and live in rural areas are about 20 times more in danger of being left behind than wealthier residents of suburban areas.

June 15, 2000

MEMORANDUM FOR MARY BETH CAHILL

FROM: Jonathan Young, OPL Associate Director for Disability Outreach

CC: Maria Echaveste, Assistant to the President and
Deputy Chief of Staff

Gene Sperling, Assistant to the President and
Director, National Economic Council

Tom Kalil, Special Assistant to the President for Economic Policy

RE: President Clinton's Digital Divide Disability Trip

INTRODUCTION

On April 18, in Chicago, President Clinton made a public announcement: "in a couple of months we will have a part of this digital divide tour devoted solely to the potential that web accessibility offers to disabled Americans to participate more fully in the educational and economic life of the United States." Information Technology offers unprecedented potential to level the playing field for people with disabilities and offer greater participation in the education, economic, and social fabric of our nation. It also improves the likelihood of financial independence and economic self-sufficiency for people with disabilities.

The purpose of this memo is to: 1) provide background information about the digital divide for people with disabilities; 2) suggest themes for framing the President's trip; 3) discuss possible destinations and deliverables for the trip; and, 4) suggest a strategy meeting to discuss next steps.

I. BACKGROUND

A. Employment of Adults with Disabilities

Administration Disability Policy currently centers on the need to increase employment opportunities for people with disabilities. Despite low overall unemployment rates, there is a staggering rate of unemployment for working-age people with "severe" disabilities -- in the range of 73.9% (according to data reported by the Census Bureau, based on the 1994-95 Survey of Income and Program Participation). The Administration has focused on how a *coordinated* and

holistic approach is necessary to successfully increase employment rates. The availability of a job, for example, may be practically meaningless if an individual does not have a place to live, or transportation to get to a job, or health care, or adequate education and training, or assistive technology, etc.

The framework for the President's New Markets Initiative dovetails with the employment challenges for people with disabilities. In fact, the language the President used to explain the need for the work incentives legislation closely paralleled the way he discussed New Markets. "Even as we celebrate more than 18 million new jobs and a nationwide unemployment rate of 4.2 percent, the lowest in a generation..., 75 percent of Americans with disabilities remain unemployed," the President said on June 4, 1999. "This is not just a missed opportunity for Americans with disabilities. It's a missed opportunity for America. This is an era now of labor shortages, where companies go begging for employees they need to stay competitive in the global economy. And we simply cannot afford to ignore the potential of millions of potential workers simply because they have a disability."

The difficulty with making a direct link between the New Markets Initiative and people with disabilities was that they (fortunately) do not constitute geographically-concentrated markets. People with disabilities instead are a sort of "cyber-community" spread throughout the nation, who cut across every race, ethnicity, gender, sexual orientation, and religion. The New Markets concept -- of being an untapped resource that could not only empower individuals but also help the economy -- was directly applicable to people with disabilities, but not concretely demonstrable. The President's Digital Divide initiative, however, makes a direct integration of people with disabilities possible.

B. OPL Activities Regarding Digital Divide for People with Disabilities

In January, following the President's State of the Union Address, OPL began facilitating conversations with disability advocates about the Digital Divide for people with disabilities, and solicited examples of efforts already taking place to bridge the divide. Community representatives joined an OPL-wide Digital Divide briefing on February 22, and noted the specific needs of people with disabilities. OPL subsequently began hosting weekly conference calls with individuals interested in digital opportunities for people with disabilities, to identify the nature of the challenges and generate suggestions for how they could be addressed.

On March 10, as part of its outreach efforts to multiple constituencies regarding the Digital Divide, OPL hosted a briefing for the disability community. The discussion underscored the real gaps in access to computers and the internet for people with disabilities, and highlighted the possibilities of accessible information technology. In particular, technology experts noted the importance of "usability." They explained that when we speak of "universal accessibility" we tend to mean universal *availability* -- carrying an assumption that the products made available could also be used by all purchasers. But the availability of a given type of technology does not mean it is necessarily *usable* (more discussion of this concept below).

In addition to weekly conference calls since the March 10 meeting, OPL has met individually with a variety of groups -- corporate as well as non-profit -- to discuss possibilities for the President's Digital Divide Tour. Although there was some disappointment that disability issues did not get more fully integrated into the original tour, the disability community is excited about the President's announcement of an additional disability-related trip.

On Thursday, June 1, OPL convened a meeting of representatives from federal agencies to review possible federal initiatives to bridge the Digital Divide for people with disabilities.

C. Overview of Digital Divide for People with Disabilities

Although the disability community has recognized the benefits and importance of technology for many years, the Department of Commerce's high-profile consideration of the Digital Divide, has devoted little attention to the importance of information technology for people with disabilities.

A recent DoED-funded report, "Computer and Internet Use Among People with Disabilities," helps fill the disability void in *Falling Through the Net*. The study "demonstrates that gaps in computer and Internet use based on disability status are *just as large as those based on race and ethnicity* [emphasis added]." Its principle findings, based on Current Population Survey data include:

- 32.6% of people aged 15-64 with a work disability have a computer in their home (compared with 55.6% in same age range of the general population);
- 15.8% of people aged 15-64 with a work disability have Internet access at home (compared with 33.9% in same age range of the general population);
- 15.1% of people aged 15-64 with a work disability use the Internet either at home or elsewhere (compared with 42.3% in same age range of the general population);
- Disparities in computer ownership and Internet access among seniors with work disabilities parallel the 15-64 population.

The report also explains that, beyond the general gaps between people with disabilities and the general population, the disability community is similarly affected by general socio-economic factors:

- Disparities regarding computers and the Internet according to level of **education** among people with disabilities parallel the general population;
- Disparities regarding computers and the Internet according to level of **income** among people with disabilities parallel the general population.

The study also indicates similar usage patterns of the Internet for people with disabilities and the general population:

- Reasons for Internet use among people with disabilities are similar to the general

population (e-mail and searching for information the two most common reasons);

- 17.0% of people with disabilities use the Internet to shop, pay bills, or for other commercial activity.

D. Current Projects and Initiatives for Bridging the Disability Digital Divide

Examples of projects and programs across the country currently attempting to bridge the Digital Divide for people with disabilities include the following:

- **ABLE-NET Internet Service** specializes in offering affordable, accessible Internet Access for People with Disabilities in 31 States and Canada;
- The **CPB/WGBH National Center for Accessible Media (NCAM)** is collaborating with the Massachusetts Institute of Technology's Center for Advanced Educational Services to make an on-line interactive physics course accessible to students with disabilities;
- The **Web Accessibility Initiative** of the World Wide Web Consortium is developing standards for accessible web design;
- **Bancroft e-Solutions** seeks to identify job openings conducive to telecommuting and match with individuals working out of their home over the Internet.
- **CAST** is a leader in the development of the Universal Design for Learning educational paradigm, working to make the general educational curriculum accessible and educationally relevant for everyone;
- **DPI (Disabled Programmers, Inc.)** is a nonprofit agency working in partnership with Silicon Valley businesses and the community to prepare people with disabilities for competitive employment. Through adaptive computer access technology and career transition services, DPI creates opportunities for significant advances in universal access, social integration, and employment for people with disabilities;
- **Edapta**, a for-profit company, is developing third-party Internet solutions that would enable customization of Internet information according to one's visual and input preferences.
- **e-Transcribe**, started by Goodwill Industries of Hawaii, trains individuals with disabilities to become medical transcriptionists and provide them contract work to perform from their homes using an array of technology, including computers with voice activated software, the Internet, and Dictaphone equipment.
- **High School High Tech**, a program of the President's Committee on Employment of People with Disabilities, seeks to provide high school students with internships with high-tech companies and agencies, including Goddard Space Flight Center in the Washington, DC area. The program currently has projects in 10 states.
- The **Merze Tate Center for Technology and Educational Reform** at Western Michigan University is leading a public-private initiative to develop a national on-line support center to help facilitate the training of people with disabilities for employment in the fast growing computer industry.

- The **Motion Picture Access Project**, with initial funding from NIDRR, has developed digital technology that allows people who are deaf or blind to access closed-captioning or video descriptions in movie theaters.
- **Virtual Buddies** takes donated computers, and donated Internet accounts, and places them in the homes of low-income people with different disabilities. The program gives individuals largely isolated in their homes a way to communicate with others and enhance their education through distance learning.

II. THEMATIC FRAMEWORK

A. Suggested Themes for POTUS Disability Trip

The President's Disability Digital Divide trip will meet with the greatest success if it is situated in the broader context of employment of *people* with disabilities, not merely on the specific *technologies* that enable many people with disabilities to participate in the digital economy. Moreover, even the issues of technology access can be presented in the broader context of *usability* for all Americans. This framework will help ensure greater collaboration from the business community, which is in many respects fearful of a regulatory approach, and has even mobilized efforts against internet accessibility (for example, a February 9, 2000 congressional hearing on the subject). Two main themes are suggested for the framework for the trip:

Maintaining Economic Growth. The United States has reached its lowest unemployment in decades by dipping under 3.9%. While this is a great achievement, it also presents challenges for meeting labor shortages. Congress has issued visas for high technology workers because so many positions have gone unfulfilled. With unemployment among people with "severe" disabilities exceeding 70%, not to mention underemployment of people with disabilities generally, people with disabilities represent an under-utilized reserve of American labor. Finding ways to encourage companies to hire and to mentor people with disabilities, and to work with the non-profit disability community to build awareness of job opportunities, is essential. One of the best ways of reducing the digital divide for people with disabilities is to increase employment, since income-level, as with the general population, is a strong determinant of access.

Availability & Usability. "Access" is generally discussed in terms of the availability of computers and the internet. Equally important is "usability," which applies to everyone. Individuals of all ages, backgrounds, and abilities have a variety of ways of accessing electronic information. Language, visual, motion, and hearing impairments have all been barriers that have presented substantial challenges. Some of the technologies originally designed to make electronic information usable to people with disabilities have wide applicability in the general population. The tools that have helped people with disabilities will make it easier for all Americans; developing more of them is the challenge and opportunity. Examples of "usability" include:

- Language translation software for documents;
- Speech Recognition software that eliminates the need to use a keyboard;

- “Audiotext” where the content of a document is verbally articulated for user to listen to;
- "Sticky keys" that make it easier for users who have difficulty using regular keyboards input information.

B. Conceptual Possibilities for Deliverables

Ideally, a powerful package of announcements could focus on private-sector hiring commitments in collaborative partnerships with government and non-profit entities. Such an announcement would include:

- commitments to provide all necessary reasonable accommodations, including assistive technologies;
- commitments to accessible web design;
- mentoring/internship programs;
- design stage R&D for accessible products and software;
- new efforts at data collection and reporting regarding people with disabilities and information technology;
- education and training; and,
- efforts to provide hardware and software to people with disabilities.

This announcement could also be linked with implementation of the Ticket to Work and Work Incentives Improvement Act. Business and government entities could emphasize they want to make the legislation a reality by providing employment opportunities, and disability organizations could help by identifying people with disabilities who are able and ready to work.

III. DESTINATIONS AND DELIVERABLES

A. Possible Destinations for a Trip

Willow CyberCenter Networks (Miami, FL). Willow is a web-based Network for telecommuting customer service operations, which is reaching out to people with disabilities to become an integrated component of its pool of CyberAgents representing people of all ages and backgrounds.

Web Accessibility Initiative, MIT, and WGBH (Boston, MA). WAI is working to help make websites more accessible; MIT is developing innovative internet-based, cross-disability instruction; and WGBH is creating captioning technologies in partnership with MIT and others.

Georgia Tools for Life and Georgia High School High Tech (Atlanta, GA). Georgia Tools for Life sponsors ReBoot, a computer recycling program for people with disabilities. Georgia's High School High Tech program is one of the most extensive in the country, providing high tech internship opportunities for disabled high school students.

Western Michigan University in (Kalamazoo, MI). Western Michigan University in cooperation with IBM, Smartforce.com and Monster.com along with the Association of Rehabilitation Programs in Computer Technology (ARPCT) are about to launch a national on-line support center for preparing people with disabilities for IT careers.

* More detailed information on each of these possibilities is available as requested.

B. Possible Deliverables

OPL has been discussing a variety of deliverables with for-profit and not-for-profit entities. Most of the potential deliverables are still in planning stage, in part because people do not have a solid grasp of when the President's trip will take place; some lack certainty that the trip will in fact take place. Likely deliverables, however, include the following entities.

- **Procurement Central, Inc.** wants to announce a major commitment to hire thousands of people with disabilities for its web-based procurement data management centers (the CEO is a person with a disability);
- **Willow CyberCenter Networks** is exploring possible ways to build on their commitment to hiring people with disabilities as CyberAgents;
- Members of the **Able to Work Consortium**, a network of corporate business leaders, are exploring the possibility of hiring commitments;
- **NCR Corporation** submitted a proposal for the initial trip and is now putting together a new proposal (OPL met with NCR representatives on Friday, May 26);
- **The National Rehabilitation Hospital** is developing an initiative to provide low-end computers or web devices to patients with disabilities leaving the hospital and provide training in information technology;
- The President's Committee on Employment of People with Disabilities is seeking to expand its **High School High Tech** program, perhaps announcing new projects in additional states;
- **HalfthePlanet.com**, an internet portal for people with disabilities, is exploring an initiative to provide scholarships supporting design-stage engineering projects;
- **Edapta** has proposed using SSA's Access Seniors website as a test site for its Internet transformations;

* More detailed information on each of these possibilities is available as requested.

IV. Recommended Strategy Session

The following individuals would be ideal for a strategic planning meeting, tentatively scheduled for Thursday, June 22, at 11:00 AM.

***Judy Brewer:** Director of the World Wide Web Consortium's Web Accessibility Initiative, she is a leading expert in the mechanics of designing and developing standards for accessible websites.

Steve Jacobs: President of IDEAL, a non-profit at NCR Corp. dedicated to promoting the hiring of people with disabilities, he is an expert in a variety of accessible technologies, including information kiosks.

David Bolnick: Accessibility Program Manager at Microsoft, he is the engine behind the Microsoft-inspired Able To Work consortium and the Enable educational video about computers and people with disabilities.

***Greg Vanderheiden:** Director of the Trace Research and Department Center in Madison, WI, he is a leading expert who has worked closely with corporations such as Microsoft to encourage integration of accessible technologies.

Cynthia Waddell: ADA Coordinator, City of San Jose, she is a well known author and speaker on the subject of the Internet and the fair and accessible presentation of information for everyone, including presentations before the Department of Commerce.

Andrew Imparato: President of the American Association of People with Disabilities, he is working with AOL and others about IT for people with disabilities, focusing not so much on specialized technologies but the basic income- and education-based divide.

Ed Eckenhoff: President of the National Rehabilitation Hospital, he is developing a web-based initiative, HealthTown, which will enable patients to communicate with the hospital more efficiently, and provide discharged patients with computer or web devices.

***Alan Dinsmore:** Executive Director of the American Council of the Blind, he is an expert on the accessibility issues for individuals who are blind and visually-impaired.

Jane West: Disability consultant working with the Association of Tech Act Projects and corporations, including Edapta.

* Attended the March 10 Digital Divide meeting.

CONCLUSION

President Clinton's Disability Digital Divide trip provides an outstanding opportunity to demonstrate the potential of technology in improving the educational, social, and economic lives of people disabilities, which can result in increased economic independence and self-sufficiency. Equally important, the New Markets framework offers a way to redefine the relationship between the disability and business communities. At a time when Clint Eastwood has publicized an

adversarial relationship between people with disabilities (as represented by "parasitic attorneys") and the business community, the Digital Divide trip can help move both the disability and the business communities toward **a collaborative relationship based on win-win results.**

THE WHITE HOUSE

Office of the Vice President

For Immediate Release

July 25, 2000

VICE PRESIDENT GORE ANNOUNCES NEW MEASURES PROMOTING HOME AND
COMMUNITY-BASED SERVICES AND HOUSING OPTIONS
FOR PEOPLE WITH DISABILITIES

Commemorates the 10th Anniversary of the Americans with Disabilities Act

Today, in commemoration of the 10th anniversary of the Americans with Disabilities Act, Vice President Gore announced that the Clinton-Gore Administration will launch a series of major new initiatives designed to promote the delivery of home and community-based services and support for people with disabilities.

The initiatives include a new \$50 million investment in FY 2001 to help states more easily offer services to people with disabilities in the most integrated setting appropriate to their needs; new guidance to state Medicaid directors on Medicaid coverage of home and community based services to help them comply with the recent Olmstead Supreme Court ruling; and a new public-private partnership between the Administration and the National Program Office on Self-Determination to help individuals with disabilities in institutions transition into community-based settings. In addition, the Vice President also announced new plans to increase home ownership; extend work incentives for individuals with disabilities to a broader range of housing assistance programs; and promote the development of new assistive technology for people with disabilities. Finally, the Vice President emphasized the Administration's strong support for health care and work incentives legislation of particular importance to people with disabilities, including a Medicare prescription drug benefit, a strong, enforceable Patients' Bill of Rights; a \$1,000 tax credit for work-related expenses for people with disabilities and a \$3,000 long term care tax credit for Americans with long-term care needs.

"I am proud of the progress we have made at turning the goals of the Americans with Disabilities Act into reality," Vice President Gore said. "I can think of no better way to build on our progress and celebrate this day than by taking steps towards assuring that Americans with disabilities have the opportunity to live and work in their communities if they so choose."

Today, the Vice President will announce new measures to:

Enhance State Capacity to Provide Home and Community-Based Services. Declaring that, "no one should have to live in an institution or nursing home if they prefer to live in the community with the right support," the Vice President announced a \$50 million investment by the Administration in FY 2001 to help states develop comprehensive plans to provide services to persons with disabilities in the most integrated setting appropriate to their needs. These new grants, proposed today, will be funded from the previously unspecified portion of the health care quality assurance fund announced in this year's midsession review and are identical to those included in the Medicaid Community Attendant Services and Supports Act of 1999. As a condition of receiving funds, states would actively involve people with disabilities and their families in the development of programs enabling people with disabilities to choose where they want to live and receive services. These funds would be used to:

-- Conduct intensive outreach efforts to educate people with disabilities about the home and community-based options currently available to them;

- Enhance inter-agency coordination and single point of entry activities; and
- Identify, develop, and implement strategies to modify state policies that result in the unnecessary institutionalization of people with disabilities rather than the provision of home and community-based services, and implement other system change activities.

Release New Guidance to States on Home and Community-Based Medicaid Coverage Rules Following the Olmstead Supreme Court Decision. Today, the Vice President announced new guidance to states on their responsibilities in the Medicaid program to support the implementation of the Olmstead Supreme Court decision. States and disability advocates have confirmed that the lack of guidance is undermining their ability to rapidly initiate and provide access to essential home and community-based services necessary to be in compliance with Olmstead. It clarifies existing options to: assist people with disabilities in making a successful transition into the community; expand the availability and quality of community-based services; and ensure that home and community-based services are equally available to all qualifying individuals with disabilities. These guidelines will clarify that:

- Individuals do not have to be confined to their homes for personal assistance services to be covered under the Medicaid home health benefit, and that to require people receiving these services to be confined to their homes is a violation of the Medicaid statute;
- States with home and community-based services are allowed to pay for personal assistance services while waiver participants are hospitalized or away from home;
- States can receive Federal funding for targeted case management for individuals leaving institutions for community residences in order to facilitate their access to necessary medical, social, and educational services in the community; and
- States have the option to provide prevocational, educational, and supported employment services under Medicaid waivers to people of all ages in all target groups.

Create a Nearly \$20 Million Investment in a Public-Private Partnership to Help Individuals with Disabilities Transition into Community Living. Today, Vice President Gore announced that HHS and HUD will commit to a new investment, subject to appropriations, of nearly \$20 million over five years in a public-private partnership with the National Project Office on Self Determination. The agencies are committing \$5.5 million for the first year subject to the availability of the appropriation, and are seeking to commit an additional \$14 million over the life of the partnership. This unique partnership, which will also utilize on multi-million dollar investments already made by these agencies, is entitled Access Housing 2000. It will focus on expanding the availability of accessible, affordable housing for people with disabilities and providing necessary support to enable individuals with disabilities make the transition from institutional settings to community living.

Expand Incentives for Employment for Individuals with Disabilities to a Broader Range of Housing Assistance Programs. The Vice President announced that the Administration will issue a new rule that would expand incentives for employment for people with disabilities, extending earned income disregards, currently applicable only to public housing, to tenant-based Section 8 housing vouchers, the HOME program, the Housing for Opportunities for People with AIDS program, and the Supportive Housing for the Homeless program. The Administration is also working on legislative changes to extend the disregards to the remaining housing programs. The new rule will also clarify that deductions for disability-related expenses, such as medical or attendant care expenses, are applicable to the entire range of HUD housing programs.

Increase Home Ownership for Persons with Disabilities. The Vice President announced that HUD will send guidance to all approved FHA mortgagees emphasizing the agency's commitment to promoting home ownership for persons with disabilities. The letter encourages HUD's lender partners to make home ownership possible for individuals with disabilities through increased, but prudent flexibility when underwriting their loan applications.

Establish a National Mental Health Coalition to Promote Community-Based Services for Individuals with Mental Illnesses and Substance Abuse Disorders. Vice President Gore announced that the Center for Mental Health Services at the Substance Abuse and Mental Health Services Administration (SAMHSA) will work with a broad-based group of public and private organizations, constituencies and consumers to create state and local coalitions to assist persons with mental illnesses and substance abuse disorders in accessing necessary services.

Develop and Deploy Assistive Technology and Technology that Enables Universal Design. The Vice President announced an Executive Memorandum requiring that the Interagency Committee on Disability Research publish a report identifying priority areas for the development and advancement of assistive technologies and universal design capabilities, and that Federal agencies then develop a strategy for transferring such technology for the benefit of people with disabilities.

Announcements complement the Clinton-Gore Administration's longstanding commitment to providing high quality health care and work incentives for people with disabilities. The Clinton-Gore Administration has proposed several additional initiatives to ensure that individuals with disabilities receive high quality health care and do not face barriers to employment, including:

- Supporting families with long-term care needs through a \$3,000 tax credit. This new tax credit supports the diverse needs of families by compensating a wide range of formal or informal long-term care for people of all ages with three or more limitations in activities of daily living (ADLs) or a comparable cognitive impairment. It would provide needed financial support to over 500,000 non-elderly adults.

- Providing a new \$1,000 tax credit to offset some of the formal and informal costs associated with employment for people with disabilities. Eligible workers with disabilities would receive a \$1,000 tax credit beginning in 2000. This would help about 200,000 to 300,000 people, at a cost of \$700 million for 2000-04.

- Providing a real Medicare prescription drug benefit for people with disabilities. There are five million people with disabilities on Medicare. The Administration has proposed a Medicare prescription drug benefit option that does not rely on private insurers that have failed to extend prescription drug coverage to people with disabilities; is affordable and meaningful; and adequately financed and part of a plan to improve Medicare.

- Fighting for a real Patients' Bill of Rights. The Clinton-Gore Administration has been fighting for a strong, enforceable, Patients' Bill of Rights for over two years. The Administration has endorsed the Norwood-Dingell legislation, the only bipartisan proposal currently being considered that: protects all Americans in all health plans; requires all health plans to ensure continuity of care for patients in the middle of a course of treatment; prevents patients accessing emergency room care from financial sanctions; guarantees access to necessary and accessible health care specialists; and meaningful enforcement mechanisms that ensure recourse for patients who have been harmed as a result of a health plan's actions.

5/24/2000

Memo

To: Tom Kalil

From: Michael Daum

Re: Background Material for Curb Cuts on the Information Superhighway

This is my first cut in identifying businesses and organizations that may be of interest to contact.

Activities Defined Under ADA

Walking, speaking, breathing, performing manual tasks, seeing, hearing, learning, caring for oneself, sitting, standing, lifting, reading, and working

Conditions Considered Disabilities Under ADA

Any physiological disorder, cosmetic disfigurement or anatomical loss affecting one or more of the body systems, including cardiovascular, digestive, endocrine, genitourinary, hemic (blood) and lymphatic, musculoskeletal, neurological, reproductive, respiratory and speech organs, skin and special sense organs. Also covered are emotional or mental illness, organic brain syndrome, retardation, specific learning disabilities, cancer, cerebral palsy, epilepsy, HIV infection, AIDS, multiple sclerosis and muscular dystrophy.

Example of Assistive Technology

Braille printers produce Braille materials for blind people

Large print enables people with visual impairments to read material

Talking computers allow blind and visually-impaired people to access information they can't see

Text-to-speech products provide speech-impaired people with the ability to speak

Telecommunications Devices for the Deaf (TDD) allow deaf and hearing impaired individuals to communicate with others who have similar disabilities as well as those who do not have hearing impairments

Assistive Learning Devices help hearing-impaired people to hear better

Speech recognition programs allow people who cannot use a key board to perform word processing and other processing and computer tasks

Advances in wheelchair technology make it easier for wheelchairs to travel independently

Several browsers have been specifically designed for people with different disabilities

Companies Employing Many Disabled Workers

Microsoft, Johnson & Johnson, IBM, Caterpillar, Charles Schwab, Crestar Bank, Wells Fargo, Ford Motor, Booz Allen, Honeywell

Companies Developing Assistive Technologies

Adobe (modifying Adobe Acrobat viewers and the Portable Document Format)

AT&T (Woody Kerkslager, VP of ATT&T, who is chaired the technology task force of the President's Committee on Employment of People with Disabilities)

- ✓ **Bartimaeus Group** (Mark Loman, President and Co-founder, produces interactive training CDs for blind users)
- ✓ **Bell Atlantic** (created a pager for disabled customers)
- ✗ **Dell Computer** (Heavily committed to AT. Most recently started a new service in Feb. that allows deaf, hearing impaired and speech impaired users to communicate with company sales and customer-service workers using a text telephone)
- ✓ **Don Johnston Incorporated** (in Waucinda, Ill developed Discover:Kenx, a combination of adaptive computer hardware and software)
- ✓ **IBM Corp** (Heavily committed to AT. Most recently is offering a Home Page Reader software that enables Web browsers to talk to blind and sight impaired users released. IBM Accessibility Center)
- InfoUse** (Berkeley firm that specializes in info on people with disabilities)
- LC Technologies** (in Fairfax, produces eye-gaze technology, Joe LaHood testified in front of Morella on technology for the Disabled in 1998)
- ✗ **MCI** (Vinton Cerf) - *WorldCom*
- ✓ **Microsoft** (Heavily committed to AT. Greg Lowmry is Director of Accessibility Dr. Gary Moulton is another key person)
- ✗ **NCR** (Dennis Robertson, CTO, financed the IDEAL Center, a showcase of all the technical solutions the company provides business customers)
- Nokia** (LPS-1 Loopset – digital mobile phone transmitting to a hearing aid - received an award last June for accessibility)
- Pitney Bowes Inc.** (Universal Access Copier System)
- Pummill Business Forms, Inc. FutureForms Division** (of Grand Rapids, MI offers a product to help visually impaired persons to fill out forms on-line)
- Sharp Electronics** (Provides Braille overlays to any consumer who buys products with touchpads)
- Sun Microsystems** (Heavily committed to AT. Working on Java Accessibility Application Programming Interfaces)
- TV on the Web** “The Able Channel” (<http://tvontheweb.com> brings the activities, information and assistive technologies of the differently-abled community to millions of people world-wide, Jeffrey D. Pledger is President)
- Wells Fargo Bank** (Committed to utilizing AT. Linda Chavez Thompson)
- Whirlpool** (Provides Braille overlays to any consumer who buys products with touchpads)

Industry Associations and Consortia

- Electronics Industry Association** (uses two experts -- Mike Paciello of Nashua, NH and Lawrence Scadden at NSF’s program for persons with disabilities.).
- ITAA** (Harris Miller talked about the potential negative impacts implementing Section 508 rules this August could have on the industry)
- Highway 1** (Partnership between Microsoft, Highway 1, and IT-accessibility consultant Accessible Systems (Baltimore-based, Terri Youngblood) related to Section 508 compliance.
- World Wide Web Consortium (W3C) Web Accessibility Initiative (WAI)** (Web Content Accessibility Guidelines. Identified accessibility needs in the following areas: HTML, Style Sheets, Multimedia, MathML, OM, XML, Graphics, Mobile Access, and Internationalization)

Non Government Organizations/ Not-for-Profit

American Council of the Blind (Paul Edwards, a disability expert at Miami-Dade Community College who heads the nation's second largest organization of blind consumers)

American Foundation of the Blind (Paul Schroeder of Chicago is Director of the National technology program, Janina Sajka is Director of Technology Research)

Arkenstone (Silicon Valley nonprofit, Jim Fructerman president and founder)

Association of Access Engineering Specialists (AAES facilitates interaction between the telecommunications industry and groups committed to empowering people with disabilities.

Center for Applied Technology (Bobby – a web validation site for accessibility
<http://www.cast.org/bobby>)

Center for the Visually Impaired (in Atlanta, LaDella Holmes-Reddick is contact)

Digit-Eyes (Kelly Pierce, co-founder of the Chicago blind computer users network, also serves on the Techwatch committee for the National Council on Disability)

Lighthouse International (Michael Fischer – director of low-vision services)

National Business & Disability Council, part of the National Center for Disability (provides education, employment, training, and research for people with disabilities - Edmund Cortez)

National Federation of the Blind (Curtis Chong, Director of technology at the Baltimore HQ)

National Organization on Disability (Alan A. Reich, President – A key organization)

Rehabilitation Engineering and Assistive Technology Society of North America (RESNA).

WGBH National Center for Accessible Media (Geoff Freed is contact)

Universities

University of Wisconsin-Madison Trace Research and Development Center (Hub for universal access design and research. Gregg Vanderheiden, a professor of industrial engineering at UWM, is the founder and director of the Trace Center)

Virginia Commonwealth University Rehabilitation Research Center (Paul Wehman, director)

Fact Sheet on the Digital Divide for those With Disabilities

Disabilities and Employment

- According to the Department of Commerce's Census Bureau, there are 54 million Americans with disabilities. There is a strong correlation between aging and disability. Over **17.4 million** Americans with disabilities are 65 years of age and older.
- Based on the Census Bureau's 1997 Survey of Income and Program Participation (SIPP), it is estimated that there were **27.7 million** Americans between the ages of 21 and 64 with a disability, with over 17 million individuals having severe disabilities.
- **31.1 percent** of those with severe disabilities ages 21-64 were employed as compared to **78.3 percent** of the total population in the age group. Of those without severe disabilities, 82.0 percent were employed.
- The 2000 National Organization on Disability/ Harris Poll Survey of Americans With Disabilities estimates that "only three in ten working age (18-64) people with disabilities are employed full or part-time, compared to eight in ten working age people without disabilities (32 percent versus 81 percent)."

Disabilities and the Digital Divide

- The Census Bureau is currently processing information from a 1999 SIPP that will characterize computer and Internet usage for those with disabilities in the same way that it has been characterized for individuals based on race, ethnicity, and where they live (rural or urban). The information is expected to be available shortly (a month).
- Researchers from the Disabilities Statistics Center Institute for Health and Aging at the University of California at San Francisco linked responses from individuals who participated in both the Census Bureau's December 1998 Current Population Survey supplemental questionnaire on Computers and Internet Use and the 1999 Annual Demographic Survey which asked a single broad question on work disability to perform an analysis. While work disability is a narrower than disability defined by the Americans with Disabilities Act, it provides the best snapshot we have of the situation.
- Less than one-quarter of the 20.9 million Americans aged 15 and over with work disabilities have computers at home as compared to slightly over half of those with no disability
- Almost three times as many people without disabilities have the ability to connect to the Internet at home as compared to those with disabilities – 31.1 versus 11.4 percent
- Only one-tenth (9.9 percent) of people with work disabilities uses the Internet – almost four times less than those with no disabilities (38.1 percent). When the disabled use the Internet, only 3.9 percent use it outside of the home – a rate over five times less than those with no disability (20.6 percent).

- Among those 18-64 years of age employed with work disabilities, 42.6 percent have computers and 26.4 percent use the Internet, compared to 56.9 percent and 44.0 percent respectively of their non-disabled counterparts.
- Regardless of the level of educational attainment, people with disabilities have much lower rates of computer ownership and Internet use than their non-disabled peers.
- For those with work disabilities, computer ownership and Internet use increase with the level of educational attainment. In addition, the gap in computer ownership and Internet usage between the disabled and their non-disabled peers decreases with increasing levels of education. For example, only 2.4 percent of people with disabilities who lack high school diplomas use the Internet – 10 times less likely than those without disabilities. The difference in Internet usage rates decreases to approximately three-to-one for high school graduates and two-to-one for college graduates
- Within each racial and ethnic group, the rate of computer ownership is much lower when there is a disability present in the household than when there is not. Across the board, households having members with work disabilities are roughly half as likely to be connected to the Internet as those without a disabled member
- Roughly half of those with work disabilities earn less than \$20,000 per year. Computer ownership for the disabled earning below \$20,000 is almost four times less (40 versus 10 percent) than for those who are disabled making above that amount. Similarly, Internet usage for the disabled earning below \$20,000 is 4.9 percent versus 16.6 percent for those with annual income above \$20,000.
- The Louis Harris Organization conducted an on-line interactive poll in the spring 2000 of 535 adults with disabilities and 614 adults without disabilities. Overall, the poll showed that the Internet is having a very positive impact on the lives of adults with disabilities who are online. Adults with disabilities are much more likely than adults without disabilities to report that the Internet has significantly improved the quality of their lives – allowed them to be better informed about the world, feel connected to the world, and allows them to reach out to people with similar interests and experiences.
- The Harris poll showed that people with disabilities are less likely to be online than people without disabilities (43% versus 57%). In particular they are much less likely to be on-line from work (16 % versus 30%) because fewer of them are working.
- Adults with disabilities under 30 tend to use the Internet more often – an average of 25 hours a week versus 8 hours a week than younger adults (under 30) without disabilities. Even though the average number of hours spent in the Internet decreases somewhat as adults with disabilities get older, those who are older say that the Internet has significantly improved the quality of their lives in greater numbers than comparably aged adults without disabilities.

What are some of the problems the disabled face when trying to use information and communications technologies?

Many commercial web-authoring tools do not have the capability for webmasters to correct accessible web design problems. IN fact many current web-authoring tools on the market make it extremely difficult to even design an accessible web-page.

The is a serious lack of web authoring tools and applications that can be utilized by this population of individuals

In the early days of the Internet, it was all text-based and universally accessible. The Web has now become a place full of graphical images, clicks, online forms, animated text, and music. These can all be obstacles to accessibility. People with limited or no physical mobility use a keyboard or voice input; those who are blind or visually impaired use a key board or voice input in combination with a text screen reader. A web site that can't be navigated without a mouse, or does not contain a description in test format about graphics will cause some of the disable population to abandon efforts to view the content of a site

How many are affected?

An estimated 48.9 million people, or 19.4 percent of the non-institutionalized people in the United States, have a "disability" according to the Presidents Committee on Employment of People with Disabilities

The population of older U.S. citizens is one of the fastest growing populations that are attempting to take advantage of the Internet. Many older individuals will be impacted by the lack of accessibility as the aging process results in the need for a Web that can accommodate their special needs.

What are some of the problems the disabled face when trying to use the Internet?

The World Wide Web (WWW) is a network of information servers throughout the world all connected by via the Internet network. Information providers format the information in files according to a specific format (HTML), and organize the information on a system called a server. To access the information, one uses a program called a browser or viewer. The Internet connects the user to all WWW servers throughout the world using a communications protocol called http.

Because of the structured nature of HTML, the WWW provides tremendous power and flexibility in presenting information in multiple formats (text, audio, video, graphics, ert.) However, the features that provides power and elegance for some users present potential barriers for users with sensory impairments. The indiscriminate use of graphic images and video restrict access for users with visual impairments. Use of audio and non-captioned video restricts access for users with hearing impairments.

What are the major provisions in the Telecommunications Act of 1996 with regard to disability access?

Section 255 of the Act requires all manufacturers of telecommunications equipment and providers of telecommunications services to ensure that such equipment and services are designed and developed to be accessible to and usable by individuals with disabilities, if readily achievable. In 1999, the FCC released rules to implement this provision.

What are Assistive Technologies?

Assistive technologies include any item, piece of equipment or product system whether acquired commercially or off the shelf, modified or customized, that is used to increase, maintain, or improve the functional capabilities of individuals with disabilities.

These “assistive technologies” are used in education, rehabilitation, and independent living to help, change, or train individuals with disabilities. People of all ages with physical, cognitive, and communication disorders, or a combination of disabilities may benefit from the application of assistive technologies.

Assistive technologies includes relatively simple devices such as canes and walking sticks, as well as more technologically sophisticated devices such as digitally programmable hearing-aids, voice input/output computers, artificial legs and hands made of space age materials.

The continuum of assistive technologies includes on one-end devices used by relatively small numbers of individuals with disabilities, and on the opposite end, devices used by large numbers of people, both disabled and non-disabled

Those pieces of assistive technology that are specialized for use by individuals with a particular disability are sometimes called “orphan devices”. These devices are designed with the concept of restoring a physical function, or retrofitting a commercially available piece of equipment so that someone with a disability can use it. Currently, an estimated 15.6 million people in the U.S. either use some type of specialized assistive technology or have reported they would benefit if they did use assistive technology.

Universal design – devices for the mass market have accessibility features built in at the front end, so that virtually anyone can use them. A well-known example of this would be the inclusion of the closed-caption decoder in all television sets, making receipt of captioned broadcasting available to millions for only pennies per set. Captioned broadcasts are useful not only for deaf and hard of hearing persons, but for persons learning to read English and all persons in noisy areas such as airports and restaurants. At present, there are approximately 2,500 companies, the vast majority of them small, that produce assistive technologies.

Demographic studies reveal the trend of aging of the U.S. population, and that this is a trend experienced by other institutionalized nations. An older population has greater assistive technology needs than a younger population. Older Americans use assistive technology to prolong the time they can live independently in the community and to reduce the costs of long-term care.

Examples of what AT is used for: Interaction with subject matter and instructional materials; communication; mobility and active movement; control of equipment; body support, alignment, and positioning; modification of the work environment; leisure time, recreation activities, and appreciation of the arts.

What does an “accessible” information technology system mean?

In general, an information technology system is accessible to people with disabilities if it can be used in a variety of ways that do not depend on a single sense or ability. For example, a system that provides output only in audio format would not be accessible to people with hearing impairments, and a system that requires mouse actions to navigate would not be accessible to people who cannot use a mouse because of a dexterity or visual impairment. Even with an accessible system, individuals with disabilities may still need specific accessibility-related software or peripheral devices as an accommodation to be able to use it. For example, in order to use an accessible word-processing program, a person who is blind may need add-on software that reads text aloud; if the word-processing program could not be made compatible with a screen-reading program, it might not be accessible.

What is Universal Design?

"Universal design" is the concept of achieving accessibility of structures, products, and services by planning for the fullest range of human function at the blueprint stage. The dual goals of universal design are (1) accessibility to the widest range of individuals and (2) elimination of the need for retrofitting and reconstruction.

Some examples of universally-designed telecommunications products include televisions with closed-captioning decoder circuitry, telephones with volume control and built-in hearing aid compatibility, and public telephones which are lowered to heights accessible to people who use wheelchairs and which also feature built-in TTY keyboards.

What is Closed-Captioning?

Closed-captioning is the display of audio portions of television and video programming as printed words on the television screen. In addition to displaying spoken dialogue and music lyrics, captions may identify speakers, sound effects, background music, and laughter. "Open" captions always appear directly on the television screen; "closed" captions are hidden as encoded data within the television signal and are displayed only when activated by the viewer. Since 1992, all televisions with screens 13" or larger are required to be equipped with the technology to display captioning, and consumers may purchase set-top decoders for older TV models.

What is Video Description?

Video description is an auditory depiction of a television or video program's visual elements for persons who are blind or visually impaired. Video description is inserted in the natural pauses of a program's dialogue, and may be used to describe visual elements such as body language, settings, and actions. In order to receive video description, an audience member must have a stereo television or VCR that is capable of receiving the Second Audio Program (SAP) "channel." The SAP feature is available on most new TVs and VCRs, and consumers may also purchase receivers for converting TV sets to stereo with SAP.

What is the World Wide Web Consortium's Web Accessibility Initiative (WAI)?

The members of the World Wide Web Consortium commitment to lead the Web to its full potential includes promoting a high degree of usability for people with disabilities. The Web Accessibility Initiative (WAI), in coordination with organizations around the world, is pursuing accessibility of the Web through five primary areas of work: technology, guidelines, tools, education & outreach, and research & development. Guidelines for web content and web authoring tools have been published.

What is the significance of Section 508 of the Rehabilitation Act of 1973?

On August 7, 1998, the President signed into law the Workforce Investment Act of 1998, which included in the Rehabilitation Act Amendments of 1998. The revised Section 508 requires that when Federal agencies develop, procure, maintain, or use electronic and information technology, they must ensure that it is accessible to people with disabilities, unless it would pose an undue burden to do so. Federal employees and members of the public who have disabilities must have access to and use of information and services that is comparable to the access and use available to non-disabled Federal employees and members of the public. Technology developed or acquired for a Federal agency by a contractor must also comply with the standards.

Won't accessible Web sites be less appealing?

On the contrary, accessible sites have several advantages. For one thing, some people turn off graphics so sites will load faster. Without "alt" tags, graphics-intense sites may be unusable. Also, with the growth of PDAs, and even Web site content delivered to cell phones, having text-based content is becoming more important. Because the screens on such devices are so small, graphics will probably never be a viable option. So the busy executive, waiting in an airport, who wants to check her stock portfolio on her cell phone isn't going to turn to the graphics-only site. Furthermore, with the growth of voice technology the harried commuter can have the headlines from his favorite news site read to him, but only if there is a text-based content. Finally, if a digitized video has synchronized captions, the text can be searched. Did you ever try to find a particular scene from your favorite video? If you want to find the famous restaurant scene from the captioned version of "When Harry met Sally" search on "I'll have what she's having" and you're there.

TABLE 1. INDIVIDUALS 15 YEARS OLD AND OVER WITH A CONDITION LIKELY TO MAKE IT DIFFICULT TO OPERATE A STANDARD PERSONAL COMPUTER
 (1997 data from the Survey of Income and Program Participation. Numbers in thousands)
 (Conditions considered likely to make the use of a personal computer difficult include impaired vision, cerebral palsy, difficulty reaching or using hands and fingers to grasp, and difficulty performing the daily activities of dressing and eating)

	Individuals 15 years and over			Condition and Employment Status: Age 21 to 64					
	Condition Status			With a Condition			With no Condition		
	Total	With a Condition	No condition	Total	Employed	Emp. rate	Total	Employed	Emp. rate
Both sexes	208,059	19,613	188,446	10,385	4,371	42.1	142,501	115,245	80.9
SEX									
Male	100,491	7,880	92,611	4,495	1,890	42.0	70,618	62,169	88.0
Female	107,568	11,733	95,835	5,890	2,481	42.1	71,883	53,076	73.8
AGE									
15 to 20 years	23,109	333	22,776	0	0	.	0	0	.
21 to 34 years	53,477	1,363	52,114	1,363	678	49.7	52,114	42,323	81.2
35 to 49 years	62,720	3,912	58,809	3,912	1,948	49.8	58,809	50,080	85.2
50 to 59 years	26,774	3,339	23,435	3,339	1,351	40.5	23,435	18,465	78.8
60 to 64 years	9,915	1,772	8,143	1,772	393	22.2	8,143	4,377	53.7
65 years and over	32,064	8,894	23,170	0	0	.	0	0	.
EDUCATION									
Not a HS grad	46,512	7,278	39,235	2,908	709	24.4	17,837	11,176	62.7
HS grad	63,589	6,180	57,408	3,546	1,439	40.6	44,654	35,394	79.3
Some college	56,341	4,193	52,148	2,805	1,516	54.0	43,861	36,515	83.3
College grad	41,616	1,962	39,655	1,126	707	62.8	36,148	32,159	89.0
FAMILY INCOME									
Less than \$25,000	67,529	10,966	56,563	5,127	1,380	26.9	38,297	25,126	65.6
\$25,000-\$49,999	65,169	5,075	60,095	2,860	1,527	53.4	46,230	38,569	83.4
\$50,000-\$74,999	38,533	2,196	36,337	1,467	863	58.8	29,354	25,983	88.5
\$75,000 or more	36,828	1,376	35,452	931	601	64.6	28,619	25,566	89.3
POVERTY STATUS									
In poverty	24,658	3,996	20,663	2,457	408	16.6	15,009	7,183	47.9
Not in poverty	183,400	15,617	167,783	7,929	3,963	50.0	127,491	108,062	84.8

of the future? The potential for a breakthrough in how people input information into computers is enormous.

Can you find ways other than reading the visual screen or printer page to get information from a computer? As the population ages, more people are losing visual acuity--a significant issue. It has also been suggested that a computer screen is an extremely low-resolution way of conveying information in the first place.

As the age of ubiquitous or pervasive computing dawns, can computers be made smart enough to sense the capabilities of a user and to adjust their input/output accordingly? Can you find better ways to organize, sort, and filter information so you get what you want quickly and are not burdened with information you don't need? Some people with disabilities typically have low bandwidth input capability. To be productive, they really can't waste time sorting through irrelevant information. How could new search engine technologies and ways of organizing and summarizing information be developed?

Bringing engineers who know about accessibility issues on-board in the early stages of infrastructure and technology development is important. Bringing consumers into the decision-making stages at certain points along the development cycle is also helpful.

Changing Demographics:

Important issues concerning market size and demographics will change the IT user population, particularly the elderly. There is likely to be a strong association between computer use and functional disabilities. The key role of function cannot be underestimated. There is a strong correlation between aging and disability, especially in hearing and vision. The median age of workers was 38 years in 1994. It will be 41 by the year 2005. The number of workers age 55 and older may approach 22.2 million in 2005. The increase of older workers is likely due to a longer life expectancy, better health and fitness, and economic necessity. More people keep working through their 60s and early 70s. Little is known about how they will cope with work, and many of them will probably be working in IT-related jobs. Also, IT may play a role in providing medical care in the home, through Telemedicine and Telerehabilitation.

The term "*digital divide*" initially referred to the gap in IT due to socioeconomic or racial differences. The notion of a "digital divide," however, applies even more to individuals with disabilities. How can an individual who cannot see possibly use a GUI? How can a person who cannot move his or her hands possibly use a keyboard or mouse? A recent report by

H. Stephen Kaye found that people with disabilities are less than half as likely to have access to a home computer than their nondisabled peers, and nondisabled individuals are three times more likely to have access to the Internet than individuals with disabilities. Education has a much bigger impact on labor force participation for individuals with disabilities than for their nondisabled counterparts. Because education is becoming more and more dependent on IT, accessibility again looms large in importance as a tool for conquering the digital divide.

Reducing the Potential for Future Federal Regulatory Intervention

Most members of the Internet Community do not support federal regulation of the Internet. "*Hands off the Internet*" is a common phrase. There is at least some probability that federal regulatory intervention to secure accessibility of the Internet will occur in the future. However, if accessibility issues are resolved, at an early stage of IT R&D before the new technologies become widely used, federal intervention is less likely. There would be no need to regulate if access were already there.

Obsolescence is a major problem for specialized software and devices for people with disabilities as technology changes. The solution seems to be to make accessibility part of the

Fact Sheet on the Digital Divide for those with Disabilities

The digital divide for those with disabilities includes the ability to physically operate a personal computer, information appliance, or telecommunications device; access to the Internet, and the ability to utilize Web content to its fullest. A survey to understand the digital divide for those with disabilities is currently being undertaken.

Based on information collected from the U.S. Census Bureau's Survey of Income and Program Participation (SIPP) during 1997, the number of individuals 15 years and older with one or more disabilities considered likely to make the use of a personal computer (PC) difficult is 19.6 million. These conditions include such ailments as impaired vision, cerebral palsy, and difficulty reaching or using hands and fingers to grasp.

The SIPP data shows that the rate people experience these types of disabilities increases with age. For those in their prime years of employment, 21-64 years of age, over 10 million people have a condition which would likely cause them difficulties in operating a standard PC, with half of them being between 50 and 64 years of age. Almost 9 million Americans over the age of 65 suffer from these types of disabilities.

The employment rate for individuals 21-64 with these types of disabilities was 42 percent – slightly over half the employment rate of those in the same age group with no disabilities.

The college graduation rate for those 21 years and older classified as having one of these conditions is only 10 percent – less than half of that of those with no condition with a college degree. Bureau of Labor Statistics data shows that the average wage of those graduating from college is significantly higher than for those who do not graduate from college.

The family income of almost half of those aged 21-64 with these conditions is less than \$25,000. U.S. Households making less than \$25,000 represent only 9.6 percent of those on-line. It can be inferred that the vast majority of these households are not on-line.

Projecting these trends out to the year 2025, it becomes evident that the aging of the baby boom generation will lead to many more individuals with disabilities which would make using a standard computer difficult. With the ever increasing importance of computers and other information technologies in work and in everyday life, if nothing is done these individuals will experience a digital divide we can't afford.

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Of the 20.9 million Americans aged 15 and over with work disabilities, approximately one-quarter (5.0 million) have computers at home. Less than half of this group, 2.4 million people, have access to the Internet via their home computers, whether or not they choose to take advantage of it. Some 1.5 million actually use the Internet at home; 2.1 million people with disabilities make use of the Internet either at home or on some other computer.

People with disabilities are less than half as likely as their non-disabled counterparts to have access to a computer at home. Almost three times as many people without disabilities have the ability to connect to the Internet at home as those with disabilities.

Whether through a home computer or one at work, at school, or in a library, people with disabilities are far less likely than those without disabilities to make use of the Internet. Only one-tenth of people with disabilities compared with almost four-tenths of those without disabilities.

When they do use the Internet, it is likely to be done at home. Internet use away from home is much less common for those with work disabilities, in part because most people with work disabilities are not employed. Only 3.9 percent of those with disabilities use the Internet outside of the home.

Even though the disability population is heavily skewed towards older ages, and older people are less likely to use new technologies, the above mentioned gaps are not accounted for by the differences in age. Among the elderly, only one-quarter of those without disabilities have computers, but still a smaller fraction – only one-tenth, or 10.6 percent – of those with disabilities have them. Internet access is available for about half of computer owners in each group.

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Elderly people with disabilities, and those with low incomes or low educational attainment, are even less likely to take advantage of these new technologies. African Americans with disabilities also have an especially low rate of computer and Internet use.

Blind people look to the Internet as a long-sought solution to the problem of communications that result from lack of sight. Problems that confront them are access to the printed word and not being able to drive.

Material typed into a computer can generate print for the sighted, Braille for the blind, or synthesized speech for either group. Because a user can travel from web site to web site without ever leaving his chair, the difficulty posed by transportation in the conduct of business is also significantly reduced. The vast majority of blind people are over age 65.

Instead of a mouse used to point and click, blind people use the tab and arrow keys to move from item to item on a screen. Therefore, our request of web site developers is that each item which can be accessed with a mouse also have provision for being accessed by the keyboard.

One of the biggest difficulties comes in trying to shop on-line using pages where the creator of the web site has failed to label the pictures he shows with a brief textual descriptions. Computer technology is not yet sufficiently advanced to recognize a picture and tell us what appears on the screen.

The presence of unlabeled graphics and the design of systems which rely only on graphics are what cause tremendous difficulties.

Designing accessibility in from the start is easier than trying to incorporate it after the fact.

Representatives from industry, government and the general public have collaborated through the Web Access Initiative of the World Wide Web Consortium which has developed and promulgated guidelines and recommendations to enhance and ensure accessibility to the World Wide Web.

Access: Whether we plan to use this technological revolution to include people who have all too often been excluded.

Make E-business friendly for blind users.

Since the Internet is only an extension of our personal computers, lessened access will mean fewer programs we can use and fewer employment opportunities. The line between the Internet and business opportunities is almost nonexistent. E-mail conducted via the Internet is the standard way to communicate.

The cost of isolating the blind, the disabled, and the senior citizens is far too high, and the benefits to all will be immense.

The evolution of and the increase in the use of the Internet as a mechanism for employment, education, communication, and commerce require us to consider the technology barriers encountered by users of the incredibly important and empowering communications medium.

People with disabilities are in all professions. The number of people with disabilities needing computers to do their work or improve their lives is increasing.

Information and communications technologies play an increasingly important role

In particular, the evolution of and the increase in the use of the Internet as a mechanism for employment, education, communication, and commerce require us to consider the technology barriers encountered by users of the incredibly important and empowering communications medium.

In the new economy, jobs requiring mental skill. There is the potential of unlocking the talents of those with physical disabilities.

People with disabilities are in all professions. The number of people with disabilities needing computers to do their work or improve their lives is increasing.

In just about every country, a certain percentage of people has the best information technology that society has to offer. These people have the most powerful computers, the best telephone service and fastest Internet service, as well as a wealth of content and training relevant to their lives.

There is another group of people. They are the people who for one reason or another don't have access to the newest or best computers, the most reliable telephone service or the fastest or most convenient Internet services. The difference between these two groups of people is what we call the Digital Divide.

To be on the less fortunate side of the divide means that there is less opportunity to take part in our new information-based economy, in which many more jobs will be related to computers. It also means that there is less opportunity to take part in the education, training, shopping, entertainment and communications opportunities that are available on line. In general, those who are poor and live in rural areas are about 20 times more in danger of being left behind than wealthier residents of suburban areas.

Assistive technologies and products that incorporate universal design principles can significantly improve the quality of life for people with disabilities and increase their ability to participate in the workplace.

The WWW is a network of information servers throughout the world, all interconnected via the Internet network. Information providers format the information in files according to a specific format (HTML), and organize the information on a system called a server. To access the information, one uses a program called a browser or viewer. The Internet connects the user to all WWW servers throughout the world using a communications protocol called HTTP.

Because of the structured nature of HTML, the WWW provides tremendous power and flexibility in presenting information in multiple formats (text, audio, video, graphics, etc.). However, the features that provide power and elegance for some users present potential barriers for users with sensory impairments. The indiscriminate use of graphic images and video restrict access for users with visual impairments. Use of audio and non-captioned video restrict access for users with hearing impairments.

A secondary problem is alternate file formats. Some WWW providers are beginning to store some documents in inaccessible file formats such as PDF from Adobe Systems.

What are some of the problems the disabled face when trying to use information and communications technologies?

What are some of the problems the disabled face when trying to use the Internet?

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What are the major provisions in the Telecommunications Act of 1996 with regard to disability access?

Section 255 of the Act requires all manufacturers of telecommunications equipment and providers of telecommunications services to ensure that such equipment and services are designed and developed to be accessible to and usable by individuals with disabilities, if readily achievable. In 1999, the FCC released rules to implement this provision.

What are Assistive Technologies?

Assistive technologies include any item, piece of equipment of product system whether acquired commercially or off the shelf, modified or customized, that is used to increase, maintain, or improve the functional capabilities of individuals with disabilities. Assistive technologies can be both “high-tech” and “low-tech”.

What does an “accessible” information technology system mean?

In general, an information technology system is accessible to people with disabilities if it can be used in a variety of ways that do not depend on a single sense or ability. For example, a system that provides output only in audio format would not be accessible to people with hearing impairments, and a system that requires mouse actions to navigate would not be accessible to people who cannot use a mouse because of a dexterity or visual impairment. Even with an accessible system, individuals with disabilities may still need specific accessibility-related software or peripheral devices as an accommodation to be able to use it. For example, in order to use an accessible word-processing program, a person who is blind may need add-on software that reads text aloud; if the word-processing program could not be made compatible with a screen-reading program, it might not be accessible.

What is Universal Design?

"Universal design" is the concept of achieving accessibility of structures, products, and services by planning for the fullest range of human function at the blueprint stage. The dual goals of universal design are (1) accessibility to the widest range of individuals and (2) elimination of the need for retrofitting and reconstruction.

Some examples of universally-designed telecommunications products include televisions with closed-captioning decoder circuitry, telephones with volume control and built-in hearing aid compatibility, and public telephones which are lowered to heights accessible to people who use wheelchairs and which also feature built-in TTY keyboards.

What is Closed-Captioning?

Closed-captioning is the display of audio portions of television and video programming as printed words on the television screen. In addition to displaying spoken dialogue and music lyrics, captions may identify speakers, sound effects, background music, and laughter. "Open" captions always appear directly on the television screen; "closed" captions are hidden as encoded data within the television signal and are displayed only when activated by the viewer. Since 1992, all televisions with screens 13" or larger are required to be equipped with the technology to display captioning, and consumers may purchase set-top decoders for older TV models.

What is Video Description?

Video description is an auditory depiction of a television or video program's visual elements for persons who are blind or visually impaired. Video description is inserted in the natural pauses of a program's dialogue, and may be used to describe visual elements such as body language, settings, and actions. In order to receive video description, an audience member must have a stereo television or VCR that is capable of receiving the Second Audio Program (SAP) "channel." The SAP feature is available on most new TVs and VCRs, and consumers may also purchase receivers for converting TV sets to stereo with SAP.

What is the World Wide Web Consortium's Web Accessibility Initiative (WAI)?

The members of the World Wide Web Consortium commitment to lead the Web to its full potential includes promoting a high degree of usability for people with disabilities. The Web Accessibility Initiative (WAI), in coordination with organizations around the world, is pursuing accessibility of the Web through five primary areas of work: technology, guidelines, tools, education & outreach, and research & development. Guidelines for web content and web authoring tools have been published.

What is the significance of Section 508 of the Rehabilitation Act of 1973?

On August 7, 1998, the President signed into law the Workforce Investment Act of 1998, which included in the Rehabilitation Act Amendments of 1998. The revised Section 508 requires that when Federal agencies develop, procure, maintain, or use electronic and information technology, they must ensure that it is accessible to people with disabilities, unless it would pose an undue burden to do so. Federal employees and members of the public who have disabilities must have

access to and use of information and services that is comparable to the access and use available to non-disabled Federal employees and members of the public. Technology developed or acquired for a Federal agency by a contractor must also comply with the standards.

Won't accessible Web sites be less appealing?

On the contrary, accessible sites have several advantages. For one thing, some people turn off graphics so sites will load faster. Without "alt" tags, graphics-intense sites may be unusable. Also, with the growth of PDAs, and even Web site content delivered to cell phones, having text-based content is becoming more important. Because the screens on such devices are so small, graphics will probably never be a viable option. So the busy executive, waiting in an airport, who wants to check her stock portfolio on her cell phone isn't going to turn to the graphics-only site. Furthermore, with the growth of voice technology the harried commuter can have the headlines from his favorite news site read to him, but only if there is a text-based content. Finally, if a digitized video has synchronized captions, the text can be searched. Did you ever try to find a particular scene from your favorite video? If you want to find the famous restaurant scene from the captioned version of "When Harry met Sally" search on "I'll have what she's having" and you're there.

March 8, 2000

MEMORANDUM FOR TOM KALIL

FROM: Michael Daum

SUBJECT: Administration Activities to Increase Access to Information Technology for Those With Disabilities

The President's proposed FY 2001 budget for increasing access to information technology for those with disabilities is \$67.5 million, an increase of 45 percent from FY 2000.

Department of Education National Institute on Disability and Rehabilitation Research (NIDRR)
FY 2000 enacted budget: \$39.0 million
FY 2001 budget request: \$54.5 million

In FY 2000, NIDRR received \$34 million to fund State assistive technology projects that reduce barriers to the availability, acquisition, and use of assistive technology devices and services for individuals with disabilities. These projects support capacity building and advocacy activities designed to assist the States in maintaining permanent comprehensive statewide programs of technology-related assistance. The President's FY 2001 budget calls for a \$7 million (21 percent) increase. The additional funds would allow States to start or expand loan programs, provide training to service providers in the use of assistive technology, and establish regional demonstration centers where people with disabilities can use the technology.

NIDRR's FY 2000 budget includes \$5.0 million for research, development, diffusion and technical assistance activities that will increase access to information technology for those with disabilities. Activities include: (1) Establishing a demonstration center/testing laboratory to offer a forum for industry to display prototypes and showcase cutting edge information technologies, to gather consumer feedback on new products, and use as a beta test site; (2) Develop, evaluate, implement and disseminate training materials, curricula, technical assistance modules for a broad array of constituents; (3) Create a Rehabilitation Engineering Research Center (RERC) on Accessible Information Technology Design Research that will work in conjunction with the existing U. of Wisconsin RERC that focuses on information technology accessibility and usability (The new Center will be charged with basic and applied IT research, application, and commercialization); (4) Continued Support for World Wide Web Consortium's Web Accessibility Initiative.

The FY 2001 Budget requests \$13.5 million to enable NIDRR to undertake a comprehensive set of technology initiatives. This includes \$5 million for an Educational Technology Initiative to provide technical assistance and training to elementary and secondary schools regarding accessible information technology, statutory requirements and technology standards, and resources available.

The remaining \$8.5 million will support a Technology for Independence initiative -- \$3.1 million for a multi-pronged Employment initiative to carry out research, training, and technical assistance to enhance the ability of individuals with disabilities to access and use information and

communication technology to increase employment opportunities, including self-employment; and \$5.4 million for a Community Independence initiative to look at how information and assistive technology can be used to enhance community integration and participation by individuals with disabilities.

General Services Administration (GSA)

FY 2000 enacted budget: \$3.5 million

FY 2001 budget request:

GSA's focus in FY 2000 is to assist Federal agencies implement the standards developed as a result of the 1998 amendments to Section 508 of the Rehabilitation Act. GSA is working with several Federal agencies, testing laboratories, and the IT industry to develop a model for testing, certifying, and validating IT products (\$1.0 million). An additional \$2.5 million is for GSA to provide technical assistance to agencies under the Rapid Service Valuation and Preparation (RSVP) Access program. GSA is using these funds to promote awareness of the Section 508 requirements both in the Federal government (through the CIO Council) and industry. GSA is also developing training modules for Federal employees capable of being delivered in different format and over different media (classroom, video, Internet...). In cooperation with other stakeholders, GSA would establish a comprehensive Section 508 Web site. In addition, GSA is working with agencies to establish teams in each agency that will be responsible for meeting Section 508 requirements. They will also assemble a team of experts who will be available to agencies with particularly difficult needs, work to identify "Centers of Expertise" within the government that can serve as resources to other agencies, and establish a Section 508 help desk. The FY 2001 Budget requests \$2.5 million for the RSVP program and \$1 million in start-up funding to a private sector organization for a testing laboratory on accessibility along the lines of the Underwriters' Laboratory.

Department of Defense Computer/Electronic Accommodation Program

FY 2000 enacted budget: \$2.6 million

FY 2001 budget request: \$2.6 million + \$2.0 million in a separate initiative

The Computer/Electronic Accommodation Program (CAP) provides assistive technology and accommodations to ensure people with disabilities have equal access to the information environment and opportunities in the Department of Defense (DOD). CAP provides assistive technology so individuals with disabilities in various DOD Components can access the telecommunications and computer/electronic information at no cost to the organization. CAP has expert staff to assist in identifying and purchasing appropriate technical enhancements to ensure that DOD employees, programs, and facilities are accessible to individuals with disabilities, as required by Federal Public laws. Since its inception in 1990, CAP has filed over 17,000 requests for accommodation throughout DOD. The CAP Technology Evaluation Center (CAPTAC) in the Pentagon is a facility dedicated to the evaluation of assistive technology. CAPTEC contains several computer workstations equipped with a wide variety of equipment designed to accommodate persons with disabilities.

The President's FY 2000 budget proposed authorizing language and a budget increase of \$2 million to expand the services CAP provides to other agencies. Congress did not approve the request. The Administration has again proposed expanding CAP in its FY 2001 budget.

National Science Foundation (NSF)

FY 2000 enacted budget: \$1.6 million

FY 2001 budget request: \$5 million

FY 2000 is the second year of NSF's Universal Access (UA) initiative. A primary objective of the UA initiative is to empower people with disabilities so that they are able to participate as first class citizens in the emerging information society. The word "access" implies the ability to find, manipulate and use information in an efficient and comprehensive manner. NSF will fund university-based research proposals focusing on (human-computer) interface technology that will lead to increased access.

The President's FY 2001 budget proposes \$5.0 million for assistive technologies as part of a broader information technology initiative. The \$5.0 million will fund research, demonstrations and technical assistance on ways to make technology more accessible. These assistive technologies will enable a greater spectrum of the citizenry - the elderly, disabled, and those with less experience with computer systems to use and benefit from IT innovations in computing and communications. Research efforts that would be supported include the Universal Access initiative, new methods for voice synthesis and recognition, multi-media information interfaces, haptic (force-feedback) interfaces, robotics, advanced networking, and tele-collaboration with virtual reality.

<u>By Agency</u>	<u>Program</u>	<u>FY 2000</u>	<u>FY 2001</u>
DOD	CAP	\$2.6 million	\$2.6 million
	Expand CAP to other agencies	-----	\$2.0 million
GSA	RSVP	\$2.5 million	\$2.5 million
	Testing	\$1.0 million	\$1.0 million
DoE/NIDRR	Grants to States	\$34 million	\$41 million
	R&D, diffusion, assistance	\$5.0 million	\$13.5 million
NSF	R&D	\$1.6 million	\$5.0 million
	Total	\$46.7 million	\$67.5 million (+45 percent)

5/24/2000

Memo

To: Tom Kalil

From: Michael Daum

Re: Background Material for Curb Cuts on the Information Superhighway

This is my first cut in identifying businesses and organizations that may be of interest to contact.

Activities Defined Under ADA

Walking, speaking, breathing, performing manual tasks, seeing, hearing, learning, caring for oneself, sitting, standing, lifting, reading, and working

Conditions Considered Disabilities Under ADA

Any physiological disorder, cosmetic disfigurement or anatomical loss affecting one or more of the body systems, including cardiovascular, digestive, endocrine, genitourinary, hemic (blood) and lymphatic, musculoskeletal, neurological, reproductive, respiratory and speech organs, skin and special sense organs. Also covered are emotional or mental illness, organic brain syndrome, retardation, specific learning disabilities, cancer, cerebral palsy, epilepsy, HIV infection, AIDS, multiple sclerosis and muscular dystrophy.

Example of Assistive Technology

Braille printers produce Braille materials for blind people

Large print enables people with visual impairments to read material

Talking computers allow blind and visually-impaired people to access information they can't see

Text-to-speech products provide speech-impaired people with the ability to speak

Telecommunications Devices for the Deaf (TDD) allow deaf and hearing impaired individuals to communicate with others who have similar disabilities as well as those who do not have hearing impairments

Assistive Learning Devices help hearing-impaired people to hear better

Speech recognition programs allow people who cannot use a key board to perform word processing and other processing and computer tasks

Advances in wheelchair technology make it easier for wheelchairs to travel independently

Several browsers have been specifically designed for people with different disabilities

Companies Employing Many Disabled Workers

Microsoft, Johnson & Johnson, IBM, Caterpillar, Charles Schwab, Crestar Bank, Wells Fargo, Ford Motor, Booz Allen, Honeywell

Companies Developing Assistive Technologies

Adobe (modifying Adobe Acrobat viewers and the Portable Document Format)

AT&T (Woody Kerkslager, VP of ATT&T, who is chaired the technology task force of the President's Committee on Employment of People with Disabilities)

Bartimaeus Group (Mark Loman, President and Co-founder, produces interactive training CDs for blind users)

Bell Atlantic (created a pager for disabled customers)

Dell Computer (Heavily committed to AT. Most recently started a new service in Feb. that allows deaf, hearing impaired and speech impaired users to communicate with company sales and customer-service workers using a text telephone)

Don Johnston Incorporated (in Waucinda, Ill developed Discover:Kenx, a combination of adaptive computer hardware and software)

IBM Corp (Heavily committed to AT. Most recently is offering a Home Page Reader software that enables Web browsers to talk to blind and sight impaired users released. IBM Accessibility Center)

InfoUse (Berkeley firm that specializes in info on people with disabilities)

LC Technologies (in Fairfax, produces eye-gaze technology, Joe LaHood testified in front of Morella on technology for the Disabled in 1998)

MCI (Vinton Cerf)

Microsoft (Heavily committed to AT. Greg Lownry is Director of Accessibility Dr. Gary Moulton is another key person)

NCR (Dennis Robertson, CTO, financed the IDEAL Center, a showcase of all the technical solutions the company provides business customers)

Nokia (LPS-1 Loopset – digital mobile phone transmitting to a hearing aid - received an award last June for accessibility)

Pitney Bowes Inc. (Universal Access Copier System)

Pummill Business Forms, Inc. FutureForms Division (of Grand Rapids, MI offers a product to help visually impaired persons to fill out forms on-line)

Sharp Electronics (Provides Braille overlays to any consumer who buys products with touchpads)

Sun Microsystems (Heavily committed to AT. Working on Java Accessibility Application Programming Interfaces)

TV on the Web “The Able Channel” (<http://tvontheweb.com> brings the activities, information and assistive technologies of the differently-abled community to millions of people world-wide, Jeffrey D. Pledger is President)

Wells Fargo Bank (Committed to utilizing AT. Linda Chavez Thompson)

Whirlpool (Provides Braille overlays to any consumer who buys products with touchpads)

Industry Associations and Consortia

Electronics Industry Association (uses two experts -- Mike Paciello of Nashua, NH and Lawrence Scadden at NSF’s program for persons with disabilities.).

ITAA (Harris Miller talked about the potential negative impacts implementing Section 508 rules this August could have on the industry)

Highway 1 (Partnership between Microsoft, Highway 1, and IT-accessibility consultant Accessible Systems (Baltimore-based, Terri Youngblood) related to Section 508 compliance.

World Wide Web Consortium (W3C) Web Accessibility Initiative (WAI) (Web Content Accessibility Guidelines. Identified accessibility needs in the following areas: HTML, Style Sheets, Multimedia, MathML, OM, XML, Graphics, Mobile Access, and Internationalization)

Non Government Organizations/ Not-for-Profit

American Council of the Blind (Paul Edwards, a disability expert at Miami-Dade Community College who heads the nation's second largest organization of blind consumers)

American Foundation of the Blind (Paul Schroeder of Chicago is Director of the National technology program, Janina Sajka is Director of Technology Research)

Arkenstone (Silicon Valley nonprofit, Jim Fructerman president and founder)

Association of Access Engineering Specialists (AAES facilitates interaction between the telecommunications industry and groups committed to empowering people with disabilities.

Center for Applied Technology (Bobby – a web validation site for accessibility
<http://www.cast.org/bobby>)

Center for the Visually Impaired (in Atlanta, LaDella Holmes-Reddick is contact)

Digit-Eyes (Kelly Pierce, co-founder of the Chicago blind computer users network, also serves on the Techwatch committee for the National Council on Disability)

Lighthouse International (Michael Fischer – director of low-vision services)

National Business & Disability Council, part of the National Center for Disability (provides education, employment, training, and research for people with disabilities - Edmund Cortez)

National Federation of the Blind (Curtis Chong, Director of technology at the Baltimore HQ)

National Organization on Disability (Alan A. Reich, President – A key organization)

Rehabilitation Engineering and Assistive Technology Society of North America (RESNA).

WGBH National Center for Accessible Media (Geoff Freed is contact)

Universities

University of Wisconsin-Madison Trace Research and Development Center (Hub for universal access design and research. Gregg Vanderheiden, a professor of industrial engineering at UWM, is the founder and director of the Trace Center)

Virginia Commonwealth University Rehabilitation Research Center (Paul Wehman, director)