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Draft August 25, 2000

MEMORANDUM FOR THE PRESIDENT

FROM:

SUBJECT: **TRIP ON PEOPLE WITH DISABILITIES AND INFORMATION TECHNOLOGY**

I. SUMMARY:

During your April trip on the "digital divide," you announced that you would have an event that focused specifically on how new information and communications technologies can help people with disabilities. This trip is currently scheduled for September 21st. This memo identifies our proposed objectives for the trip, some options on site venues, and potential deliverables.

II. GOALS FOR THE TRIP:

After extensive outreach with the disabilities community, we have identified 5 goals that we think you should use this event to promote -- by calling attention to the issue and by announcing concrete commitments by the government, industry, and non-profit organizations.

1. **Existing IT products and services should be designed from the beginning to be more accessible for people with disabilities**: Currently, not all IT products and services are accessible for people with disabilities. For example, someone who is blind can't use the Web if a Web page uses graphics without also including text.

2. **We should improve the state-of-the-art of assistive technology**: Through research and development, we can make it even easier for people to use IT - through technologies such as voice recognition for people who can't use a keyboard.

3. **Employers should take advantage of IT to expand employment for people with disabilities**: The unemployment rate for people with disabilities is much higher than the general population. Accessible IT could make it easier for employers to hire people with disabilities, and communications technology could allow more people with disabilities to work from their home. People with disabilities can thereby help fill the demand for high-skilled IT employees.

4. **Our existing "digital divide" initiatives should be designed so that people with disabilities can take advantage of them**: For example, our national network of Community Technology Centers should be designed to be accessible to people with disabilities.

5. **We should address inequities in access to assistive technology**: There are amazing technologies (e.g., people who are paralyzed can operate computers through the use of eye-gaze or brain waves) that are simply too expensive for low or moderate-income households.

III. SITE OPTIONS

Ideally, your trip would consist of two stops:

- The first stop would focus on the information technologies that can be used by people with disabilities. At this venue you could see demonstrations of assistive technology. We recommend **Madison, Wisconsin** or **Boston, Massachusetts**.

- At the second stop, you would visit a successful program that is using technology to allow people with disabilities to work, improve their health care, or pursue a science or engineering degree at a university. You could also do a roundtable with CEOs and people from the disabilities community that would discuss what steps the United States must take to ensure that all Americans with disabilities are benefiting from these new technologies. We recommend **Atlanta, Georgia** or **Kalamazoo, Michigan** or **Seattle, Washington**.

A. MORNING EVENT

Madison, Wisconsin

The University of Wisconsin, Madison campus would make a great backdrop for an event on accessible technology:

- It is the home of the Trace Research and Development Center, which is funded by the Department of Education to make IT more accessible for people with disabilities. Over the years, they have worked to make computers, the Internet, ATM machines, pagers and voice mail more accessible.

- Several of the courses at the University of Wisconsin teach undergraduate and graduate students about accessibility issues, and a number of engineering students have used their knowledge to develop accessibility projects in the community.

- Statewide, Wisconsin is a leader in hiring people with disabilities. With one of the lowest unemployment rates in the country for decades, its area businesses have been innovative in finding ways to bring people with disabilities into the economic mainstream.

Boston, Massachusetts

There are two very important accessibility projects in the Boston area:

- MIT is the home of the World Wide Web Consortium's Web Accessibility Initiative. The World Wide Web Consortium is the industry consortium that develops the standards for the Web. The Web Accessibility Initiative has developed guidelines, which, if

adopted widely, will make the web accessible for people with disabilities. For example, blind people rely on screen readers to "read" the text on a Web page. If a company or government web page uses graphics without also providing text, it will be impossible for someone who is blind to access it. The Department of Education is planning to increase its support for this project. The World Wide Web Consortium is run by Tim Berners-Lee, the man who invented the Web and has chosen to work on continuing to improve it as opposed to profit from the Internet "gold-rush."

- WGBH is the home of the National Center for Accessible Media, which is the national leader in closed captioning and descriptive video services. The Department of Education will be giving the National Center for Accessible Media a grant to develop standards to make "e-learning" accessible for people with disabilities.

Message

- We need to ensure that we develop IT products and services that are accessible for people with disabilities.

- Doing this will help everyone, not just people with disabilities, just as curb-cuts help families with baby strollers in addition to people with wheel-chairs.

Sequence Of Events

- You would see a demonstration of accessible technologies. An example is the "Eye-Gaze" system, which allows people with spinal cord injuries to operate a computer merely by looking at different parts of the screen.

- A speaking program with people from the high-tech industry and the disabilities community. You would announce most of the deliverables at the morning event.

B. AFTERNOON EVENT

Atlanta, Georgia

There are a number of excellent disabilities programs in Atlanta that would make appropriate venues for your trip, including:

- **Shepherd Center Telerehabilitation Program.** The Shepherd Center is a specialty hospital serving people with disabilities resulting from impairments that affect the central nervous system, such as spinal cord injuries and brain injuries. Through grants from the Department of Commerce and the Department of Education, and partnerships with the private sector, the Shepherd Center is now expanding the scope of patient treatment through telerehabilitation. Under this new program, patients will be provided a personal computer with a customized platform supporting videoconferencing, remote monitoring of vital health measurements, Internet access, multimedia instructional materials. The

program will improve community reintegration (including return to work), bridge the gap of services for people in remote areas, reduce secondary complications, and incur lower overall health care and support costs.

- **Georgia High School High Tech**. With both public and private funding and the cooperation of businesses, federal and state agencies, not-for-profit organizations, and local school districts, High School High Tech uses site visits, mentoring, shadowing, and paid summer internships to provide students with opportunities to learn more about careers in scientific, engineering and technology-related fields. Georgia's HSHT program is one of the most active and extensive programs in the country. One group of students was recently honored at the Air and Space Museum for its successful design and execution of a Space Shuttle butterfly experiment.

Kalamazoo, Michigan

Kalamazoo has two programs that increase employment for people with disabilities:

- **Western Michigan University.** In cooperation with IBM, Smartforce.com, and Monster.com -- the Association of Rehabilitation Programs in Computer Technology (ARPCT) is about to launch a national on-line support center for preparing people with disabilities for IT careers. The corporate partners have already donated over half million in this project to bring computer-based IT training to homebound and other individuals with disabilities.

- **Michigan Career and Technical Institute**. MCIT is the second largest comprehensive vocational rehabilitation training center in the nation. It trains over 800 individuals per year in a 10 different technology-related areas at its Planwell campus and many more through its statewide distance learning network. It offers two-year residential technical training for people with disabilities seeking new career opportunities. It is operated by the state-federal vocational rehabilitation program.

Seattle, Washington

The University of Washington at Seattle is the home of an NSF-funded, award-winning program called DO-IT (Disabilities, Opportunities, Internetworking, and Technology). The program has a number of elements:

- It helps high-school students with disabilities pursue careers and college;

- Participants in the DO-IT program that are in college become Ambassadors and mentors to high school students;

- Students with disabilities participate in work-based learning;

- Young people with disabilities participate in a summer camp to learn how to use computers and the Internet;

- College faculty and administrators are given training on ways to work successfully with students with disabilities.

Message

- Information technology can help people with disabilities increase their participation in the workforce and go to college. If we want to be able to continue to grow our economy, we need to ensure that all people with disabilities have these opportunities.

Sequence Of Events

- Tour the program and meet with the people that are participating in it.

- Roundtable with employers, people with disabilities and experts to discuss future challenges in making assistive technology affordable to all Americans.

IV. POTENTIAL DELIVERABLES:

We are still working on developing additional deliverables, but these are some of the possibilities that we have identified so far. The disabilities community has urged us to focus on getting the private sector to make their products more accessible, not merely making specific financial commitments.

1. **High-tech CEOs adopt a company-wide accessibility policy**: Currently, very few high-tech companies have adopted an explicit corporate policy on accessibility. High-tech CEOs would commit to implement "best practices" such as:

   - Training their workers to develop accessible products and services;

   - Giving their developers adequate resources to design accessible products and services;

   - Identify and fix accessibility problems in new versions of their hardware and software; and

   - Supporting research and development to improve the state-of-the-art of assistive technology.

2. **University presidents commit to expanding research and education on accessibility**: Presidents of the leading research universities would commit to:

   - Ensuring that computer scientists and engineers receive training on accessibility;

   - Expanding the number of faculty who conduct research on accessibility; and

- Ensuring that university online resources are accessible to people with disabilities.

3. **Companies agree to increase employment of people with disabilities**: Employers would agree to:

   - Target disability as part of their diversity recruitment goals;

   - Make assistive technology available to their employees; and

   - Promote the recruitment of youth with disabilities through summer internships and mentorships.

4. **Commission on Assistive Technology**: We would announce that foundations are supporting a blue-ribbon commission of experts in industry and the disabilities community to develop policy recommendations in some key areas, such as financing of assistive technology for people who may not be able to afford it.

5. **Making educational content accessible**: The Department of Education will provide a grant to industry and the National Center for Accessible Media to make educational software and distance learning accessible for people with disabilities.

6. **Making the Web accessible**: The National Institute on Disability and Rehabilitation Research will expand its funding for a joint project with industry to make the Web more accessible for people with disabilities.

June 7, 2000

MEMORANDUM FOR MARY BETH CAHILL

FROM: Jonathan Young, OPL Associate Director for Disability Outreach

RE: President Clinton's Digital Divide Disability Trip

INTRODUCTION

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. And it improves the likelihood of financial independence and economic self-sufficiency for people with disabilities.

On Friday, April 14, Gene Sperling announced internally and to a couple of outside advocates that the President would add a disability trip to his Digital Divide tour. 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."

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; and, 3) discuss possible destinations and deliverables for the trip.

I. BACKGROUND

A1. EMPLOYMENT OF ADULTS WITH DISABILITIES

Administration Disability Policy currently centers on the need to increase employment opportunities for people with disabilities, and has recently focused on the recommendations of the Presidential Task Force on Employment of Adults with Disabilities (hereafter, Task Force), which the President created by Executive Order on March 13, 1998. The main problem the Executive Order addressed was a staggering rate of unemployment for working-age people with "severe" disabilities. It is difficult to assess a precise employment rate because there are a multitude of different federal definitions of disability, and because statistics depend upon self-reporting. Data reported by the Census Bureau, however, based on the 1994-95 Survey of Income and Program Participation (SIPP), indicate the following employment rates among people 21 to 64 years of age:

- **82.1%** of people **without disabilities**
- **76.9%** of people **with disabilities not labeled severe**
- Only **26.1%** of people **with severe disabilities**.[1]

The purpose of the Task Force, according to the Executive Order, "is to create a coordinated and aggressive national policy to bring adults with disabilities into gainful employment at a rate that is as close as possible to that of the general adult population." The conceptual foundation of the Task Force is that 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.

Administration efforts to break down employment barriers for people with disabilities[2] include:

- Passage of the Ticket to Work and Work Incentives Improvement Act;
- Issuing an OPM *Plan* for hiring and promoting people with disabilities throughout the Federal government;
- Raising the Social Security Substantial Gainful Activity (SGA) level to $700;
- Ending the disparities between federal hiring of people with psychiatric and physical disabilities.

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. "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 President noted that people with disabilities are central to resolving a top domestic policy challenge: "how can we continue to grow this economy and lift the standards of living of our people until we embrace everybody who has not participated in the recovery; keep the recovery going..., and not have an explosion of inflation?" The President suggested three possible answers: 1) get more unemployed people into the work force; 2) target large areas that have been left out of economic growth; and, 3) find more markets abroad. "The last big chunk of people in this country who could keep the economy going for all of us, with low inflation," President Clinton said, are "Americans with disabilities -- who want to work, who can work, and who are not in the work force. Every American citizen should have a selfish interest in the pursuit of this goal in the most aggressive possible way."

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[1] "Re-Charting the Course: First Report of the Presidential Task Force on Employment of Adults with Disabilities," November 15, 1998, p. Appendix-69

[2] The White House Disability Accomplishments document provides a comprehensive list of achievements and current proposals with descriptions.

A2. People with Disabilities as a "New Market"

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 be 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 is convening 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

The disability community has recognized the benefits and importance of technology for many years. Screen readers, refreshable Braille, closed-captioning, telephone relay services, manual and motorized wheelchair devices, prosthetics, and many other technologies have enhanced the abilities and opportunities of people with disabilities. The National Institute for Disability and Rehabilitation Research in the Department of Education has helped support a research agenda for assistive technology. Other federal departments and agencies have deliberated, at least internally, about technology and disability. And a number of individuals and agencies have documented the specific interests of people with disabilities in the information age -- both in terms of the opportunities and challenges.[3]

The Department of Commerce's high-profile consideration of the Digital Divide, however, has not generally recognized the importance of information technology for people with disabilities, resulting in criticism from the disability community. Advocates have noted:

- The Department's series of reports, *Falling Through the Net*,[4] makes scant reference to people with disabilities;
- Government-funded Community Access Centers, replete with the most advanced technologies, have reportedly (in some instances) been created in spaces inaccessible to people using wheelchairs;
- Neglect of disability in defining the Digital Divide also characterized early development of White House action on the issue (public statements referenced race, income, education, and geography).

The President's next Digital Divide trip provides an opportunity to show renewed leadership in this area, building on the incorporation of disability into the December 1999 E-Government and E-Society directives.

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]."[5] Its principle findings, based on Current Population Survey data include:

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[3] See, for example: Cynthia D. Waddell, J.D., "The Growing Digital Divide In Access For People With Disabilities: Overcoming Barriers To Participation," Paper presented at "Understanding The Digital Economy: Data, Tools and Research," May 25 and 26, 1999, US Department of Commerce, Washington DC, http://www.aasa.dshs.wa.gov/access/waddell.htm; Susan Brummel, "People with Disabilities and the NII: Breaking Down Barriers, Building Choice," September 1994 National Information Infrastructure White Paper, http://www.itpolicy.gsa.gov/coca/nii.htm; *Access To Multimedia Technology By People With Sensory Disabilities*, National Council on Disability, Washington, DC, March 13, 1998, http://www.ncd.gov/newsroom/publications/sensory.html.

[4] "Falling Through the Net: Defining the Digital Divide," July 8, 1999 (revised November 1999), http://www.ntia.doc.gov/ntiahome/fttn99/contents.html; "Falling Through the Net II: New Data on the Digital Divide," July 1998, http://www.ntia.doc.gov/ntiahome/fttn99/contents.html; "Falling Through the Net: A Survey of 'Have Nots' in Rural and Urban America," July 1995, http://www.ntia.doc.gov/ntiahome/fallingthru.html.

[5] H. Stephen Kaye, "Computer and Internet Use Among People with Disabilities," *Disability Statistics Report (13)*, Washington, DC: U.S. Department of Education, 2000, p. 1.

- 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;
- **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). The following themes are suggested as a 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.

Double-Edged Sword for People with Disabilities and America. Information technology can provide social, educational, and economic opportunities for people disabilities like never before. A blind man taking customer product orders over the telephone for GSA, for example, who utilized speech-to-text and refreshable Braille technologies to do his job, recently explained an encounter he had with one of his customers. The GSA employee, "John," was such an effective and reliable customer service representative that this one customer, "Dave," always asked to place his orders with John. Dave surprised John one day by saying he was in Washington and wanted a chance to meet. John obliged him, but this time Dave was the one who got surprised. Over the telephone, Dave had no idea that John was blind, and could not have imagined a blind person could work so deftly with computers. John showed him how he listened to his customers in one ear as the computer translated speech to text in his other ear, while the refreshable Braille display indicated what was on the screen and enabled him to double-check his work. These and similar technologies enable many people with disabilities to compete in the workplace. But information technology is a double-edged sword, for if the technologies are not fully accessible and affordable, information technology will further shut people with disabilities out of the mainstream rather than promote improved integration. The ability of people with disabilities to help address America's labor shortages and promote economic growth in the New Economy thus depend upon accessible technologies -- both in terms of availability and usability.

Customization, Innovation and Accessible Technology. Each individual may, at certain times, have variable preferences in how they want the content of an electronic document communicated to them or how they would like to input information into the computer. He or she would want these preferences to be portable and not machine dependent. For people with sensory and motion impairments, the preferences are absolutely critical, but for others it will probably be a welcome convenience. If car manufacturers are focusing intently on developing electronic dashboards that can be customized by drivers, customizing how information is presented on

computers and how information input functions can be viewed as just another stage in the development of consumer choice in products.

Meeting the Needs of the Boomer Generation. With the leading edge of the post-war baby boomers turning 55, there is a large demographic of individuals who will want to stay involved and active but whose sensory capabilities may not be as sharp as they once were. This generation also happens to be among the wealthiest in American history and have historically been able to use their buying power to enormous effect. Baby boomers who now own computers will certainly be looking for solutions (software, hardware, and services) that will enable them to remain productive and connected. The knowledge gained by developing tools to assist people with disabilities can be refined and applied to another market.

Affordability. The essence of mass marketing is developing products in demand at a price range that consumers are willing to pay. Home computers over the past five years have become, due to both changes in perception and improvements in capability, truly mass market products with increasingly high rates of household penetration in the population. Devices are being introduced in the market that now cost below a thousand dollars and some with limited capabilities can be obtained for around $500. Irrespective of specialized technologies, people with disabilities benefit from affordability of general information technology. To offer comprehensive service to the market segment of individuals with disabilities, features that offer physical and sensory accessibility must also be affordable. Through further research and analysis they must be priced to service this demographic group while generating income and profits for the provider.

Government by Example. The Federal Government is in a position to use its influence as a purchaser of electronic software and information technology equipment to require changes in design that will increase accessibility for people with disabilities. Given the President's commitment to make the unemployment rate for people with disabilities approach the general population, federal agencies and departments can set trends for private industry by integrating people with disabilities into the federal workforce, and providing the technology tools they need. There are opportunities for exchange of information that may of be benefit to all.

Design-Stage Innovation. The realities of structural accessibility for buildings is instructive in the context of information technology. The ADA focused on new construction and renovations (requiring only that "readily achievable" modifications had to be made to existing structures) because the costs of accessibility features are minimal if incorporated at the design stage. Similarly, the costs of promoting accessibility in wireless telecommunications are minimal if pursued at the design stage. Working to develop a level of awareness of usability by corporate and government leaders in Research & Development can help avoid costly retroactive changes.

B. Conceptual Possibilities for Deliverables

Because recognition of disability as a central component of the digital divide lags behind recognition of other factors, public and private entities may be less prepared to offer initiatives to help bridge this digital divide. Following are thematic areas where actions might be pursued:

B1. GOVERNMENT

Hiring in Information Technology. Perhaps the most effective way to help address the IT needs of people with disabilities is to integrate them throughout federal IT jobs. They could help other IT experts understand the potential of people with disabilities while bringing their own expertise to tackling high-tech challenges.

Telecommuting Customer Service. Some government customer service operations could be directed toward people with disabilities trained to telecommute from their homes over the internet. This is a rapidly developing industry, and the government could help by demonstrating leadership in hiring people with disabilities.

High-Tech Internships and Mentoring. Less than one-half of one percent of individuals with disabilities who join the SSDI/SSI roles ever get off. By providing high school and college students with internships and other IT mentoring experiences, the federal government can help interest more people in IT and provide experience important for competing in the job market.

Data Collection and New Markets. Long-term solutions for bridging the disability divide for people with disabilities will necessitate effective information gathering and analysis, and communication with the business community, which are not currently being pursued adequately. Perhaps the President could issue an Executive Order creating a Task Force within the Department of Commerce, which could help establish the appropriate structures to make disability an integrated, priority issue within the Department.

Government Reporting. Commerce's *Falling through the Net* reports have been remarkably effective in building momentum for bridging the digital divide, but have not addressed disability issues. Disability could be identified as a priority area to be integrated in future reports. By accurately identifying and framing the problems as other aspects of the divide, government reports could have a profound impact on increasing employment for people with disabilities.

Accessibility of Government-Funded Digital Divide Initiatives. Many of the general community and classroom-oriented initiatives to bridge the digital divide could help people with disabilities, provided they are accessible to people with disabilities. In other words, separate programs need not be created, but agencies could be more aggressive in ensuring that they include usability in designing their information technology programs.

Section 508. Effective implementation of Section 508 could help creative incentives in the private sector to be more aggressive in designing accessible technologies. The Department of Commerce could work with industry to set up a certification organization to develop testing procedures to determine compliance with testing standards.

Continued Funding of Assistive Technology Research. The National Institute on Disability and Rehabilitation Research (NIDRR) is a leader in promoting the development of accessible technologies. One current "Young Scholar" funded by NIDRR is developing "auditory

displays," that use stereophonic (side-to-side) and tonal (up-and-down) sounds to present graphs and other visuals to blind persons.

Technology Loan Programs. Although many assistive technologies are minimal in cost, others, such as speech devices for people with cerebral palsy, are costly. Government-subsidized loans could help individuals with high-cost needs.

B2. Private Sector

Hiring Commitments. Welfare-to-Work was successful because the corporate sector made strong and public commitments to providing the education and training and other supports necessary to achieve lasting employment opportunities for people on welfare. Similar commitments to hire people with disabilities, especially in IT jobs, could heighten the overall economic well-being of disabled Americans, which correlates to computer ownership and internet access.

Internships and Mentoring. The private sector could partner with the federal government to provide internship and other mentoring opportunities for people with disabilities.

Donation of Internet Accounts. Internet service providers could parallel their initiatives for minority populations by donating internet free accounts to youth with disabilities. A questionnaire could be designed and administered on-line (someone could donate their services to do this) to determine the use of these accounts, and its impact on school, work, socialization, and other factors.

Telecommuting. Consulting firms could analyze which industries would benefit from a part-time, home-based telecommuting workforce and identify a business framework in which this could be a manageable enterprise.

Design-Stage R&D. IT firms could commit resources to R&D in developing accessible products and services at the design stage.

Supplying Computer and Internet Devices. Non-profits working with children and adults with disabilities could develop partnerships to provide low-end computer and web devices to help people with disabilities "get connected" to IT.

Sponsoring Accessible Computer Facilities. Corporations could play an important role in ensuring that library and community computer resource centers attend to the needs of people with disabilities.

Distance Learning. Internet Training companies could develop and execute a program on how to teach visually impaired and blind individuals through distance learning.

Media Attention. Electronic business magazines could make commitments to covering the opportunities (and challenges) presented by the disability labor market and the need for customizable interface products.

III. DESTINATIONS AND DELIVERABLES

A. Recommended Destination for Trip

One current practice is clearly best-equipped to illustrate the themes outlined above: the **Willow CyberCenter Networks** of 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.

Willow is a for-profit corporation that bills itself as the "ultimate CSR (Customer Service Representative) staffing solution." Its website (www.willowcsn.com) boasts that "Leading corporations across America like Ticketmaster and the Home Shopping Network are expanding their labor pool, increasing profits and improving customer service **without** building new call centers." Willow fills a business need: companies with large customer service call-in operations face significant overhead costs in maintaining call centers, and struggle to meet peak periods that can be irregular and unanticipated. Willow meets these challenges by training a network of CyberAgents, who work out of their homes and handle customer service calls over the phone and through the Internet.

Willow is an innovative example of public-private partnering. Companies participating in the Network (the Clients) save money by reducing overhead costs, including training of personnel and high turnover rates. Each individual CyberAgent is responsible for financing his or her own home office, estimated at around $2,500. But government subsidies help individuals get their businesses started, and the State of Florida offers public school classrooms for training the CyberAgents.

Willow's primary role is to develop a network of corporate clients and recruit a pool of qualified CyberAgents, and to provide a web-based software application whereby clients register the hours they need staffed, and CyberAgents sign up for the posted hours they wish to work (and for which clients). CyberAgents go through a basic training that includes instruction about creating and maintaining one's own independent business, and then pursue applied training for the specific call content of individual clients. Distance training is facilitated through the non-profit National Telecommuting Institute (NTI). CyberAgents work no more than two consecutive hours a day for any one Client, so they must become trained for several Clients.

While the Willow Network offers dramatic benefits to corporate clients, it offers equally attractive benefits to the CyberAgents. (Willow estimates there will be 800,000 CyberAgents across the U.S. within 5 years.) Although OPL first encountered Willow through Gary Barron, a Willow consultant, who is working with NTI to seek the participation of government agencies in the Willow Network to hire people with disabilities, the Newtork's social benefits are much

broader. OPL had the opportunity to attend one of Willow's monthly conferences in September 1999. There were testimonials from a mother who wanted the flexibility to work at home while caring for small children, from a top real estate agent who didn't want to miss his youngest son's childhood, and a retired Vice President of a bank who saw many friends languish in retirement and wanted to remain active. It offers individuals flexibility, variety, the ability to avoid transportation cost and stress, and savings in work-related expenses such as clothing.

It also offers comparatively excellent income. Whereas customer service agents working out of call centers may make little more than minimum wage and devote an entire work-day to the same types of calls, CyberAgents average between $13 and $18 an hour (well above the so-called "living wage"), and sometimes make as much $25 per hour. Agents can earn so much more at the same time clients increase their profits because the Clients typically face dramatic overhead costs in maintaining call centers.

For people with disabilities, being a CyberAgent offers additional benefits. For many people, the time and costs associated with transportation to work can be prohibitive. Working out of the home actually enables individuals to *increase* their social lives because they spend so much less time and energy in preparing for and traveling to and from work. Moreover, becoming an independent entrepreneur offers a level of individual reward that far exceeds working for minimum wage. Sahadeo Bickram, a married Hispanic wheelchair-user and father of two children, describes how he can do his therapy in the morning, work from 12-5, have dinner with his family and help his kids with their homework, and then work again in the evening. Working for Willow has enabled Sahadeo to move out of public housing and purchase his own home. He contrasts his material well being: before Willow, he says, he got to the point where he couldn't afford to go to K-Mart to buy his children Christmas gifts; now, he's in a position to buy gifts for all the kids on his block!

Because the Willow Network is web-based, many of the Internet accessibility initiatives taking place around the country could be demonstrated at Willow in Miami. President Clinton, for example, could visit the home of Sahadeo and even take a call from one of Willow's Clients as a CyberAgent. By emphasizing this end result of people with disabilities helping to fill a business need, the President would have a meaningful context for emphasizing why it is important to make information technology not only available to but also usable by all Americans.

In Miami the President could highlight, among other things:

- The W3C Web Accessibility Initiative's efforts to make internet sites accessible;
- Edapta's efforts to provide Internet "Transformations" according to user preferences (e.g. increasing size of print, varying color contrasts, offering decision trees);
- Distance learning initiatives, including those at MIT;
- Projects designed to provide computers and Internet accounts to people with disabilities.

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.

- **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;
- The **National Science Foundation** has expressed an interest in developing a deliverable (yet to be defined).

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.**

August 29, 2000

BRIEFING

MEMORANDUM FOR MARY BETH CAHILL

FROM: Jonathan Young

RE: Meeting with Willow CSN, Inc.

DATE\TIME: Tuesday, August 29, 2000, 11:00 AM

LOCATION: OEOB 122

ATTENDEES: Asim Saber
President and CEO, Willow

Kathleen Bocek
VP (recruitment), Willow

Lisa Layne
CFO, Willow

Gary Barron
President, Strategic Alliance Partners

PURPOSE: Discuss possible commitment to bridge disability digital divide, mainly a commitment to hire people with disabilities in home-based telecommuting customer service operations.

BACKGROUND: I first encountered Willow over a year ago, at which time Willow was working with the National Telecommuting Institute (NTI) to train people with disabilities in New York City to be part of their customer service network. In September 1999 I visited Willow in Florida and was deeply impressed with the operation of the company and its potential benefit for people with disabilities. Willow was interested in the possibility of getting selected government customer service operations as clients for the network.

I approached Gary Barron earlier this spring to see whether Willow might be interested in supporting the Digital Divide initiative. There had been considerable turnover in the company (the current CEO joined in April),

and Gary was no longer working closely with the company. Gary, however, approached CEO Asim Saber, who expressed an interest, based in part on the excellent record of his Cyberagents with disabilities. Early this summer I thought Willow might be an outstanding candidate for a site visit, because of the excellent testimonials of its employees and use of technology to enhance the lives of people with disabilities.

Under its new leadership, Willow redirected its mission and discontinued its collaboration with the NYC-based training program of NTI. Willow's business model now calls for adding new call centers around the country, beginning with the west coast to increase their call-time range, rather than linking up small projects like the one in NYC.

I met with Gary and Willow yesterday to get a better idea of where they were before meeting with you. They appear prepared to make a major commitment to hiring people with disabilities (currently about 4% of the CyberAgents are people with disabilities), but they seek guidance in how to identify promising job candidates, particularly in new geographic markets. *I am less convinced now that they are a good match for the digital divide initiative, because it appears they are more focused on obtaining federal assistance than in offering a private-sector initiative.*

FORMAT: Request YOU to drop-by meeting in Christine's office, meet various Willow representatives, and briefly here their ideas.

ACKNOWLEDGEMENTS: n/a

TALKING POINTS: n/a

ATTACHMENTS: Draft memo to POTUS regarding Digital Divide trip

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 be 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 or 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 visiually-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.**

June 7, 2000

MEMORANDUM FOR MARY BETH CAHILL

FROM: Jonathan Young, OPL Associate Director for Disability Outreach

RE: President Clinton's Digital Divide Disability Trip

INTRODUCTION

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. And it improves the likelihood of financial independence and economic self-sufficiency for people with disabilities.

On Friday, April 14, Gene Sperling announced internally and to a couple of outside advocates that the President would add a disability trip to his Digital Divide tour. 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."

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; and, 3) discuss possible destinations and deliverables for the trip.

I. BACKGROUND

A1. EMPLOYMENT OF ADULTS WITH DISABILITIES

Administration Disability Policy currently centers on the need to increase employment opportunities for people with disabilities, and has recently focused on the recommendations of the Presidential Task Force on Employment of Adults with Disabilities (hereafter, Task Force), which the President created by Executive Order on March 13, 1998. The main problem the Executive Order addressed was a staggering rate of unemployment for working-age people with "severe" disabilities. It is difficult to assess a precise employment rate because there are a multitude of different federal definitions of disability, and because statistics depend upon self-reporting. Data reported by the Census Bureau, however, based on the 1994-95 Survey of Income and Program Participation (SIPP), indicate the following employment rates among people 21 to 64 years of age:

- **82.1%** of people **without disabilities**
- **76.9%** of people **with disabilities not labeled severe**
- Only **26.1%** of people **with severe disabilities**.[1]

The purpose of the Task Force, according to the Executive Order, "is to create a coordinated and aggressive national policy to bring adults with disabilities into gainful employment at a rate that is as close as possible to that of the general adult population." The conceptual foundation of the Task Force is that 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.

Administration efforts to break down employment barriers for people with disabilities[2] include:

- Passage of the Ticket to Work and Work Incentives Improvement Act;
- Issuing an OPM *Plan* for hiring and promoting people with disabilities throughout the Federal government;
- Raising the Social Security Substantial Gainful Activity (SGA) level to $700;
- Ending the disparities between federal hiring of people with psychiatric and physical disabilities.

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. "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 President noted that people with disabilities are central to resolving a top domestic policy challenge: "how can we continue to grow this economy and lift the standards of living of our people until we embrace everybody who has not participated in the recovery; keep the recovery going..., and not have an explosion of inflation?" The President suggested three possible answers: 1) get more unemployed people into the work force; 2) target large areas that have been left out of economic growth; and, 3) find more markets abroad. "The last big chunk of people in this country who could keep the economy going for all of us, with low inflation," President Clinton said, are "Americans with disabilities -- who want to work, who can work, and who are not in the work force. Every American citizen should have a selfish interest in the pursuit of this goal in the most aggressive possible way."

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[1] "Re-Charting the Course: First Report of the Presidential Task Force on Employment of Adults with Disabilities," November 15, 1998, p. Appendix-69

[2] The White House Disability Accomplishments document provides a comprehensive list of achievements and current proposals with descriptions.

A2. People with Disabilities as a "New Market"

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 be 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 is convening 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

The disability community has recognized the benefits and importance of technology for many years. Screen readers, refreshable Braille, closed-captioning, telephone relay services, manual and motorized wheelchair devices, prosthetics, and many other technologies have enhanced the abilities and opportunities of people with disabilities. The National Institute for Disability and Rehabilitation Research in the Department of Education has helped support a research agenda for assistive technology. Other federal departments and agencies have deliberated, at least internally, about technology and disability. And a number of individuals and agencies have documented the specific interests of people with disabilities in the information age -- both in terms of the opportunities and challenges.[3]

The Department of Commerce's high-profile consideration of the Digital Divide, however, has not generally recognized the importance of information technology for people with disabilities, resulting in criticism from the disability community. Advocates have noted:

- The Department's series of reports, *Falling Through the Net*,[4] makes scant reference to people with disabilities;
- Government-funded Community Access Centers, replete with the most advanced technologies, have reportedly (in some instances) been created in spaces inaccessible to people using wheelchairs;
- Neglect of disability in defining the Digital Divide also characterized early development of White House action on the issue (public statements referenced race, income, education, and geography).

The President's next Digital Divide trip provides an opportunity to show renewed leadership in this area, building on the incorporation of disability into the December 1999 E-Government and E-Society directives.

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]."[5] Its principle findings, based on Current Population Survey data include:

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[3] See, for example: Cynthia D. Waddell, J.D., "The Growing Digital Divide In Access For People With Disabilities: Overcoming Barriers To Participation," Paper presented at "Understanding The Digital Economy: Data, Tools and Research," May 25 and 26, 1999, US Department of Commerce, Washington DC, http://www.aasa.dshs.wa.gov/access/waddell.htm; Susan Brummel, "People with Disabilities and the NII: Breaking Down Barriers, Building Choice," September 1994 National Information Infrastructure White Paper, http://www.itpolicy.gsa.gov/coca/nii.htm; *Access To Multimedia Technology By People With Sensory Disabilities*, National Council on Disability, Washington, DC, March 13, 1998, http://www.ncd.gov/newsroom/publications/sensory.html.

[4] "Falling Through the Net: Defining the Digital Divide," July 8, 1999 (revised November 1999), http://www.ntia.doc.gov/ntiahome/fttn99/contents.html; "Falling Through the Net II: New Data on the Digital Divide," July 1998, http://www.ntia.doc.gov/ntiahome/fttn99/contents.html; "Falling Through the Net: A Survey of 'Have Nots' in Rural and Urban America," July 1995, http://www.ntia.doc.gov/ntiahome/fallingthru.html.

[5] H. Stephen Kaye, "Computer and Internet Use Among People with Disabilities," *Disability Statistics Report (13)*, Washington, DC: U.S. Department of Education, 2000, p. 1.

- 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;
- **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). The following themes are suggested as a 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.

Double-Edged Sword for People with Disabilities and America. Information technology can provide social, educational, and economic opportunities for people disabilities like never before. A blind man taking customer product orders over the telephone for GSA, for example, who utilized speech-to-text and refreshable Braille technologies to do his job, recently explained an encounter he had with one of his customers. The GSA employee, "John," was such an effective and reliable customer service representative that this one customer, "Dave," always asked to place his orders with John. Dave surprised John one day by saying he was in Washington and wanted a chance to meet. John obliged him, but this time Dave was the one who got surprised. Over the telephone, Dave had no idea that John was blind, and could not have imagined a blind person could work so deftly with computers. John showed him how he listened to his customers in one ear as the computer translated speech to text in his other ear, while the refreshable Braille display indicated what was on the screen and enabled him to double-check his work. These and similar technologies enable many people with disabilities to compete in the workplace. But information technology is a double-edged sword, for if the technologies are not fully accessible and affordable, information technology will further shut people with disabilities out of the mainstream rather than promote improved integration. The ability of people with disabilities to help address America's labor shortages and promote economic growth in the New Economy thus depend upon accessible technologies -- both in terms of availability and usability.

Customization, Innovation and Accessible Technology. Each individual may, at certain times, have variable preferences in how they want the content of an electronic document communicated to them or how they would like to input information into the computer. He or she would want these preferences to be portable and not machine dependent. For people with sensory and motion impairments, the preferences are absolutely critical, but for others it will probably be a welcome convenience. If car manufacturers are focusing intently on developing electronic dashboards that can be customized by drivers, customizing how information is presented on

computers and how information input functions can be viewed as just another stage in the development of consumer choice in products.

Meeting the Needs of the Boomer Generation. With the leading edge of the post-war baby boomers turning 55, there is a large demographic of individuals who will want to stay involved and active but whose sensory capabilities may not be as sharp as they once were. This generation also happens to be among the wealthiest in American history and have historically been able to use their buying power to enormous effect. Baby boomers who now own computers will certainly be looking for solutions (software, hardware, and services) that will enable them to remain productive and connected. The knowledge gained by developing tools to assist people with disabilities can be refined and applied to another market.

Affordability. The essence of mass marketing is developing products in demand at a price range that consumers are willing to pay. Home computers over the past five years have become, due to both changes in perception and improvements in capability, truly mass market products with increasingly high rates of household penetration in the population. Devices are being introduced in the market that now cost below a thousand dollars and some with limited capabilities can be obtained for around $500. Irrespective of specialized technologies, people with disabilities benefit from affordability of general information technology. To offer comprehensive service to the market segment of individuals with disabilities, features that offer physical and sensory accessibility must also be affordable. Through further research and analysis they must be priced to service this demographic group while generating income and profits for the provider.

Government by Example. The Federal Government is in a position to use its influence as a purchaser of electronic software and information technology equipment to require changes in design that will increase accessibility for people with disabilities. Given the President's commitment to make the unemployment rate for people with disabilities approach the general population, federal agencies and departments can set trends for private industry by integrating people with disabilities into the federal workforce, and providing the technology tools they need. There are opportunities for exchange of information that may of be benefit to all.

Design-Stage Innovation. The realities of structural accessibility for buildings is instructive in the context of information technology. The ADA focused on new construction and renovations (requiring only that "readily achievable" modifications had to be made to existing structures) because the costs of accessibility features are minimal if incorporated at the design stage. Similarly, the costs of promoting accessibility in wireless telecommunications are minimal if pursued at the design stage. Working to develop a level of awareness of usability by corporate and government leaders in Research & Development can help avoid costly retroactive changes.

B. Conceptual Possibilities for Deliverables

Because recognition of disability as a central component of the digital divide lags behind recognition of other factors, public and private entities may be less prepared to offer initiatives to help bridge this digital divide. Following are thematic areas where actions might be pursued:

B1. GOVERNMENT

Hiring in Information Technology. Perhaps the most effective way to help address the IT needs of people with disabilities is to integrate them throughout federal IT jobs. They could help other IT experts understand the potential of people with disabilities while bringing their own expertise to tackling high-tech challenges.

Telecommuting Customer Service. Some government customer service operations could be directed toward people with disabilities trained to telecommute from their homes over the internet. This is a rapidly developing industry, and the government could help by demonstrating leadership in hiring people with disabilities.

High-Tech Internships and Mentoring. Less than one-half of one percent of individuals with disabilities who join the SSDI/SSI roles ever get off. By providing high school and college students with internships and other IT mentoring experiences, the federal government can help interest more people in IT and provide experience important for competing in the job market.

Data Collection and New Markets. Long-term solutions for bridging the disability divide for people with disabilities will necessitate effective information gathering and analysis, and communication with the business community, which are not currently being pursued adequately. Perhaps the President could issue an Executive Order creating a Task Force within the Department of Commerce, which could help establish the appropriate structures to make disability an integrated, priority issue within the Department.

Government Reporting. Commerce's *Falling through the Net* reports have been remarkably effective in building momentum for bridging the digital divide, but have not addressed disability issues. Disability could be identified as a priority area to be integrated in future reports. By accurately identifying and framing the problems as other aspects of the divide, government reports could have a profound impact on increasing employment for people with disabilities.

Accessibility of Government-Funded Digital Divide Initiatives. Many of the general community and classroom-oriented initiatives to bridge the digital divide could help people with disabilities, provided they are accessible to people with disabilities. In other words, separate programs need not be created, but agencies could be more aggressive in ensuring that they include usability in designing their information technology programs.

Section 508. Effective implementation of Section 508 could help creative incentives in the private sector to be more aggressive in designing accessible technologies. The Department of Commerce could work with industry to set up a certification organization to develop testing procedures to determine compliance with testing standards.

Continued Funding of Assistive Technology Research. The National Institute on Disability and Rehabilitation Research (NIDRR) is a leader in promoting the development of accessible technologies. One current "Young Scholar" funded by NIDRR is developing "auditory

displays," that use stereophonic (side-to-side) and tonal (up-and-down) sounds to present graphs and other visuals to blind persons.

Technology Loan Programs. Although many assistive technologies are minimal in cost, others, such as speech devices for people with cerebral palsy, are costly. Government-subsidized loans could help individuals with high-cost needs.

B2. Private Sector

Hiring Commitments. Welfare-to-Work was successful because the corporate sector made strong and public commitments to providing the education and training and other supports necessary to achieve lasting employment opportunities for people on welfare. Similar commitments to hire people with disabilities, especially in IT jobs, could heighten the overall economic well-being of disabled Americans, which correlates to computer ownership and internet access.

Internships and Mentoring. The private sector could partner with the federal government to provide internship and other mentoring opportunities for people with disabilities.

Donation of Internet Accounts. Internet service providers could parallel their initiatives for minority populations by donating internet free accounts to youth with disabilities. A questionnaire could be designed and administered on-line (someone could donate their services to do this) to determine the use of these accounts, and its impact on school, work, socialization, and other factors.

Telecommuting. Consulting firms could analyze which industries would benefit from a part-time, home-based telecommuting workforce and identify a business framework in which this could be a manageable enterprise.

Design-Stage R&D. IT firms could commit resources to R&D in developing accessible products and services at the design stage.

Supplying Computer and Internet Devices. Non-profits working with children and adults with disabilities could develop partnerships to provide low-end computer and web devices to help people with disabilities "get connected" to IT.

Sponsoring Accessible Computer Facilities. Corporations could play an important role in ensuring that library and community computer resource centers attend to the needs of people with disabilities.

Distance Learning. Internet Training companies could develop and execute a program on how to teach visually impaired and blind individuals through distance learning.

Media Attention. Electronic business magazines could make commitments to covering the opportunities (and challenges) presented by the disability labor market and the need for customizable interface products.

III. DESTINATIONS AND DELIVERABLES

A. RECOMMENDED DESTINATION FOR TRIP

One current practice is clearly best-equipped to illustrate the themes outlined above: the **Willow CyberCenter Networks** of 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.

Willow is a for-profit corporation that bills itself as the "ultimate CSR (Customer Service Representative) staffing solution." Its website (www.willowcsn.com) boasts that "Leading corporations across America like Ticketmaster and the Home Shopping Network are expanding their labor pool, increasing profits and improving customer service **without** building new call centers." Willow fills a business need: companies with large customer service call-in operations face significant overhead costs in maintaining call centers, and struggle to meet peak periods that can be irregular and unanticipated. Willow meets these challenges by training a network of CyberAgents, who work out of their homes and handle customer service calls over the phone and through the Internet.

Willow is an innovative example of public-private partnering. Companies participating in the Network (the Clients) save money by reducing overhead costs, including training of personnel and high turnover rates. Each individual CyberAgent is responsible for financing his or her own home office, estimated at around $2,500. But government subsidies help individuals get their businesses started, and the State of Florida offers public school classrooms for training the CyberAgents.

Willow's primary role is to develop a network of corporate clients and recruit a pool of qualified CyberAgents, and to provide a web-based software application whereby clients register the hours they need staffed, and CyberAgents sign up for the posted hours they wish to work (and for which clients). CyberAgents go through a basic training that includes instruction about creating and maintaining one's own independent business, and then pursue applied training for the specific call content of individual clients. Distance training is facilitated through the non-profit National Telecommuting Institute (NTI). CyberAgents work no more than two consecutive hours a day for any one Client, so they must become trained for several Clients.

While the Willow Network offers dramatic benefits to corporate clients, it offers equally attractive benefits to the CyberAgents. (Willow estimates there will be 800,000 CyberAgents across the U.S. within 5 years.) Although OPL first encountered Willow through Gary Barron, a Willow consultant, who is working with NTI to seek the participation of government agencies in the Willow Network to hire people with disabilities, the Newtork's social benefits are much

broader. OPL had the opportunity to attend one of Willow's monthly conferences in September 1999. There were testimonials from a mother who wanted the flexibility to work at home while caring for small children, from a top real estate agent who didn't want to miss his youngest son's childhood, and a retired Vice President of a bank who saw many friends languish in retirement and wanted to remain active. It offers individuals flexibility, variety, the ability to avoid transportation cost and stress, and savings in work-related expenses such as clothing.

It also offers comparatively excellent income. Whereas customer service agents working out of call centers may make little more than minimum wage and devote an entire work-day to the same types of calls, CyberAgents average between $13 and $18 an hour (well above the so-called "living wage"), and sometimes make as much $25 per hour. Agents can earn so much more at the same time clients increase their profits because the Clients typically face dramatic overhead costs in maintaining call centers.

For people with disabilities, being a CyberAgent offers additional benefits. For many people, the time and costs associated with transportation to work can be prohibitive. Working out of the home actually enables individuals to *increase* their social lives because they spend so much less time and energy in preparing for and traveling to and from work. Moreover, becoming an independent entrepreneur offers a level of individual reward that far exceeds working for minimum wage. Sahadeo Bickram, a married Hispanic wheelchair-user and father of two children, describes how he can do his therapy in the morning, work from 12-5, have dinner with his family and help his kids with their homework, and then work again in the evening. Working for Willow has enabled Sahadeo to move out of public housing and purchase his own home. He contrasts his material well being before Willow, he says, he got to the point where he couldn't afford to go to K-Mart to buy his children Christmas gifts; now, he's in a position to buy gifts for all the kids on his block!

Because the Willow Network is web-based, many of the Internet accessibility initiatives taking place around the country could be demonstrated at Willow in Miami. President Clinton, for example, could visit the home of Sahadeo and even take a call from one of Willow's Clients as a CyberAgent. By emphasizing this end result of people with disabilities helping to fill a business need, the President would have a meaningful context for emphasizing why it is important to make information technology not only available to but also usable by all Americans.

In Miami the President could highlight, among other things:

- The W3C Web Accessibility Initiative's efforts to make internet sites accessible;
- Edapta's efforts to provide Internet "Transformations" according to user preferences (e.g. increasing size of print, varying color contrasts, offering decision trees);
- Distance learning initiatives, including those at MIT;
- Projects designed to provide computers and Internet accounts to people with disabilities.

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.

- **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;
- The **National Science Foundation** has expressed an interest in developing a deliverable (yet to be defined).

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.**

Draft September 14, 2000

Background for September 21st trip - Creating Digital Opportunity for People with Disabilities

I. MESSAGE: With the right commitments from government and the private sector, information technology can be a powerful tool for improving the quality of life and expanding employment opportunities for people with disabilities.

II. GOALS: In cooperation with the disability community, the Administration has developed the following 5 goals that will help bridge the digital divide and create digital opportunity for Americans with disabilities:

1. **Existing IT products and services should be designed from the beginning to be more accessible for people with disabilities**: Currently, not all IT products and services are accessible for people with disabilities. For example, someone who is blind can't use the Web if a Web page uses graphics without also including text.

2. **We should improve the state-of-the-art of assistive technology**: Through research and development, we can make it even easier for people to use IT - through technologies such as voice recognition for people who can't use a keyboard.

3. **Employers should take advantage of IT to expand employment for people with disabilities**: The unemployment rate for people with disabilities is much higher than the general population. Accessible IT could make it easier for employers to hire people with disabilities and allow more people with disabilities to work from their home.

4. **Our existing "digital divide" initiatives should be designed so that people with disabilities can take advantage of them**: For example, our national network of Community Technology Centers should be designed to be accessible to people with disabilities.

5. **We should address inequities in access to assistive technology**: There are amazing technologies (e.g., people who are paralyzed can operate computers through the use of eye-gaze or brain waves) that are simply too expensive for low or moderate-income households.

III. PROPOSED SEQUENCE OF EVENTS

1. **President sees demonstration of technology that is accessible to people with disabilities** (30 minutes)

   Recommended Location: Disability Network/Technology Access Center

   Examples of technology:

- An "eye-gaze" system that enables people without motor function or speech to operate a computer and use the Internet, solely through the movement of their eyes.

- Electronic books that allow people who are blind to have access to a universe of knowledge.

- Voice recognition systems that allow people who can't use a keyboard to use computers.

- An online MIT physics course that has been designed to be accessible for people with all types disabilities, through the use of captioning and descriptive video.

2. **President conducts roundtable discussion with CEOs, disability community representatives, technology experts, elected officials** (45 minutes - 1 hr)

   Recommended Location: Disability Network or Career Alliance

   Possible Themes:

   - Adoption and implementation of technology standards

   - University role in capacity-building of experts in universal design and assistive technology

   - Strategies to increase employment of people with disabilities

   - Improving affordability of technology

3. **Speaking program** (30 minutes)

   Recommended Location: Career Alliance

   Possible Program:

   - Someone from technology community (e.g. Tim Berners-Lee, Inventor of World Wide Web)

   - Someone with a disability who can talk about the impact of technology

   - President gives speech -- announces deliverables

IV. BACKGROUND ON SITES

Technology Access Center:

- Provides access to computers and assistive technology for people with disabilities and others in the community
- Has the "latest and greatest" assistive technology -- eyegaze, screen reader software, voice recognition
- Linked to the Mott Community College for distance learning through the Internet and video-conferencing
- Plans to offer a certification program for experts in assistive technology.
- This center is located at a Center for Independent Living called the Disability Network, which is staffed by people with disabilities, including Americorps volunteers with disabilities

Career Alliance One-Stop Service Center:

- "One-Stop" center for workforce development created under Workforce Investment Act of 1998 -- a major accomplishment of the Clinton Administration.
- A person with a disability serves as the Chairman of the local Workforce Investment Board, as well as the Chairman of the association of all Michigan Workforce Investment Boards (he's also the Director of the Disability Network independent living center.
- Service Center is fully accessible and has state-of-the-art technology.
- Workforce Investment Board has created a Disability Council to increase employment with disabilities.
- Workforce Investment Board is working to implement the Ticket to Work and Work Incentives Improvement Act of 1999.

V. EXAMPLES OF DELIVERABLES

Private sector

1. **High-tech CEOs adopt a company-wide accessibility policy**: Currently, very few high-tech companies have adopted an explicit corporate policy on accessibility. A number of high-tech CEOs (HP, Compaq, AOL, eBay, Bell South, Adobe, Applied Materials, etc.) have committed to implement "best practices" such as:
   - Training their workers to develop accessible products and services;

- Giving their developers adequate resources to design accessible products and services;
- Identify and fix accessibility problems in new versions of their hardware and software; and
- Supporting research and development to improve the state-of-the-art of assistive technology.

2. **University presidents commit to expanding research and education on accessibility**: Presidents of a number of leading research universities have committed to:
   - Ensuring that computer scientists and engineers receive training on accessibility;
   - Expanding the number of faculty who conduct research on accessibility; and
   - Ensuring that university online resources are accessible to people with disabilities.
3. **Companies agree to increase employment of people with disabilities**: Employers would agree to:
   - Target disability as part of their diversity recruitment goals;
   - Make assistive technology available to their employees; and
   - Promote the recruitment of youth with disabilities through summer internships and mentorships.

   [Note: We do not have a critical mass of employers on this letter yet.]
4. **Commission on Assistive Technology**: The Mott Foundation, based in Flint, has agreed to support a blue-ribbon commission of experts in industry and the disability community to develop policy recommendations in some key areas on assistive technology. The host of the commission will be the Disability Network in Flint.

Government

1. **Making the Web accessible**: The National Institute on Disability and Rehabilitation Research will expand its funding for a joint project with industry to make the Web more accessible for people with disabilities called the Web Accessibility Initiative.
2. **Making educational content and distance learning accessible**: The Department of Education will provide a grant to industry and the National Center for Accessible Media to make educational software and distance learning accessible for people with disabilities.
3. **Ensuring that our Community Technology Centers are accessible for people with disabilities**: The Department of Education will give a grant called the "America Connects

Consortium" to provide technical assistance to our community technology centers. As part of this grant, CTCs will be given technical assistance on how to ensure that they are accessible for people with disabilities.

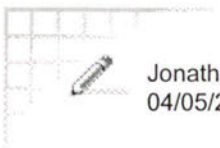
4. **Executive Memorandum on Assistive Technology**: This Executive Memorandum directs HHS and other relevant agencies to create a task force on the issue of Medicare and Medicaid coverage on assistive technology.

5. **Increasing high-tech employment for people with disabilities**: The Department of Labor is considering targeting some of their "H1-B" money to increase high-tech training for people with disabilities. [Note: No final decision has been made on this.]

6. **Expanding the High-School/High-Tech program**: The President's Committee on Employment of People with Disabilities will expand its High School/High Tech program to several new cities and states. These programs provide high-school students with disabilities internships and other experiences in high-tech businesses.

VI. PAPER

- 1-page summary/overview
- Detailed description of deliverables
- 1-page on background, why this is important
- 1-page on Clinton record



Jonathan M. Young
04/05/2000 11:37:32 AM

Record Type: Record

To: Jonathan M. Young/WHO/EOP@EOP

cc:
Subject: President Clinton: Closing the Digital Divide

Below please find information about President Clinton's National Call to Action to close the Digital Divide. Digital Technology is a driving force of our economy, and poses tremendous potential of expanded opportunities for many people who have not equally shared in our nation's prosperity. But if people cannot access computers and the internet, people can fall even further behind.

Representatives of the disability community active on this issue have helped me understand that there are two types of "access." Most people, when talking about access, mean the "availability" of computer and internet technology. "Usability" access is equally important: individuals must have the ability to use a computer, not just have a computer physically available. "Usability" is not a disability-specific issue. It concerns the knowledge and training to use computers, and language skills, as well as speech-to-text technology, for example. This is a really important point, because if access to computers and the internet for people with disabilities is discussed as a completely unique issue, it fosters a segregated approach to promoting digital opportunities. Discussing the needs of people with disabilities as one of several types of usability, in contrast, makes it a mainstream issue.

I have established a "sub-list" regarding Digital Opportunity, where I circulate additional information about the Digital Divide. If you are interested in joining this list, please send an email to my assistant with DIG DIVIDE SUBCRIBE in the subject heading. Her email is: Kristen_Jones@WHO.EOP.GOV. I welcome all of your suggestions and input about Digital Opportunity, and am grateful for the insight many of you have already provided.

==========

PRESIDENT CLINTON:
ISSUING A NATIONAL CALL TO ACTION TO CLOSE THE DIGITAL DIVIDE
April 4, 2000

"Our mission is to open the digital frontier to all Americans, regardless of income, education, geography, disability or race.... If we work together to close the digital divide, technology

can be the greatest equalizing force our society or any other has ever known."

President Bill Clinton
April 4, 2000

Today, at the White House, President Clinton announced that over 400 companies and non-profit organizations have pledged to sign his National Call to Action to help bridge the digital divide. The President unveiled several initiatives by the public and private sectors, and announced his third New Markets Tour to focus national attention on the digital divide and bring digital opportunity to youth, families and communities around the country.

ISSUING A NATIONAL CALL TO ACTION. President Clinton's "National Call to Action" challenges corporations and non-profit organizations to help bridge the digital divide by meeting two critical goals:

+ PROVIDING 21ST CENTURY LEARNING TOOLS FOR EVERY CHILD IN EVERY SCHOOL, including connecting every classroom, providing students with access to multimedia computers, training teachers to use and integrate technology into the curriculum, and providing high-quality online content and educational software.

+ CREATING DIGITAL OPPORTUNITY FOR EVERY AMERICAN FAMILY AND COMMUNITY, including making home access to the Internet universal, bringing technology to every neighborhood through community technology centers, empowering all citizens with IT skills and motivating them to "get connected."

ANNOUNCING INITIATIVES TO BRIDGE THE DIVIDE. The President unveiled the following commitments by the public and private sectors to bridge the digital divide:

+ THE CORPORATION FOR NATIONAL SERVICE will commit $12.5 for projects aimed at bringing digital opportunity to youth, families and communities;

+ YAHOO! will provide an Internet advertising campaign worth $1 million to enlist volunteers with high-tech skills for AmeriCorps' digital divide initiative;

+ In partnership with the YWCA's TechGYRLS program, 3COM will announce NetPrep GYRLS, a $330,000 program that will offer girls aged 14-16 training in computer networking; and

+ THE AMERICAN LIBRARY ASSOCIATION will work with its members to create or expand "information literacy" programs in at least 250 communities around the country.

NEW MARKETS TOUR: FROM DIGITAL DIVIDE TO DIGITAL OPPORTUNITY. On April 17-18, President Clinton, accompanied by CEOs, Members of Congress, Cabinet Secretaries and community leaders, will conduct his third New Markets Tour to focus national attention on initiatives aimed at overcoming the digital divide and creating opportunities for

youth, families and communities. The President will travel to East Palo Alto, California; the Navajo Nation in Shiprock, New Mexico; and Chicago, Illinois to highlight private- and public-sector initiatives to help bring digital opportunity to all Americans. Later this month, the President will travel to rural North Carolina to stress the importance of expanding rural access to the emerging broadband Internet.

Draft August 22, 2000

MEMORANDUM

FROM:

RE: TRIP ON PEOPLE WITH DISABILITIES AND INFORMATION TECHNOLOGY

Summary:

During your April trip on the "digital divide," you announced that you would have an event that focused specifically on how new information and communications technologies can help people with disabilities. This trip is currently scheduled for September 21st. This memo identifies our proposed objectives for the trip, potential deliverables, and some options on site venues.

Goals for the trip:

After extensive outreach with the disabilities community, we have identified 5 goals that we think you should use this event to promote -- by calling attention to the issue and by announcing concrete commitments by the government, industry, and non-profit organizations.

1. **Existing IT products and services should be designed from the beginning to be more accessible for people with disabilities**: Currently, not all IT products and services are accessible for people with disabilities. For example, someone who is blind can't use the Web if a Web page only uses graphics, instead of also including text.

2. **We should improve the state-of-the-art of assistive technology**: Through research and development, we can make it even easier for people to use IT - through technologies such as voice recognition for people who can't use a keyboard.

3. **Employers should take advantage of IT to expand employment for people with disabilities**: The unemployment rate for people with disabilities is much higher than the general population. Accessible IT could make it easier for employers to hire people with disabilities, and communications technology could allow more people with disabilities to work from their home.

4. **Our existing "digital divide" initiatives should be designed so that people with disabilities can take advantage of them**: For example, our national network of Community Technology Centers should be designed to be accessible to people with disabilities.

5. **We should address inequities in access to assistive technology**: There are amazing technologies (e.g. computers that can be used by people who are paralyzed that operate solely by eye-gaze) that are simply too expensive for low or moderate-income households.

Potential deliverables:

1. **High-tech CEOs adopt a company-wide accessibility policy**: Currently, very few high-tech companies have adopted an explicit corporate policy on accessibility. High-tech CEOs would commit to implement "best practices" such as:

   - Training their workers to develop accessible products and services;
   - Giving their developers adequate resources to design accessible products and services;
   - Identify and fix accessibility problems in new versions of their hardware and software; and
   - Supporting research and development to improve the state-of-the-art of assistive technology.

2. **University presidents commit to expanding research and education on accessibility**: Presidents of the leading research universities would commit to:

   - Ensuring that computer scientists and engineers receive training on accessibility;
   - Expanding the number of faculty who conduct research on accessibility; and
   - Ensuring that university online resources are accessible to people with disabilities.

3. **Companies agree to increase employment of people with disabilities**: Employers would agree to:

   - Target disability as part of their diversity recruitment goals;
   - Make assistive technology available to their employees; and
   - Promote the recruitment of youth with disabilities through summer internships and mentorships.

4. **Commission on Assistive Technology**: We would announce that foundations are supporting a blue-ribbon commission of experts in industry and the disabilities community to develop policy recommendations in some key areas, such as financing of assistive technology for people who may not be able to afford it.

5. **Making educational content accessible**: The Department of Education will provide a grant to industry and the National Center for Accessible Media to make educational software and distance learning accessible for people with disabilities.

6. **Making the Web accessible**: The National Institute on Disability and Rehabilitation Research will expand its funding for a joint project with industry to make the Web more accessible for people with disabilities.

June 21, 2000

BRIEFING

MEMORANDUM FOR MARY BETH CAHILL

FROM: Jonathan Young

RE: Disability Digital Divide Meeting

DATE\TIME: June 22, 2000

LOCATION: Roosevelt Room

ATTENDEES: See attachment

PURPOSE: Discuss strategies for POTUS Digital Divide trip focusing on people with disabilities.

BACKGROUND: See attached memo of June 15, 2000.

FORMAT: Roundtable discussion with Gene Sperling and nine outside guests

ACKNOWLEDGEMENTS: Thank disability leaders for efforts to help bridge the digital divide for people with disabilities.

TALKING POINTS: n/a

ATTACHMENTS: List of attendees; June 15 memo

DISABILITY DIGITAL DIVIDE STRATEGY MEETING

ROOSEVELT ROOM, THE WHITE HOUSE

June 22, 2000

LIST OF ATTENDEES

Mary Beth Cahill
Assistant to the President and Director of Public Liaison

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

Tom Kalil
Special Assistant to the President for Economic Policy

Jonathan Young
OPL Associate Director for Disability Outreach

Judy Brewer
Director, World Wide Web Consortium (W3C), Cambridge, MA

Alan Dinsmore
Executive Director, American Federation for the Blind, Washington , DC

Larry Goldberg
Director, National Center of Accessible Media, Boston, MA

Andrew Imparato
President, American Association of People with Disabilities

Steve Jacobs
President, IDEAL at NCR Corp.

Mike Rosen
Rehabilitation Engineering Service, National Rehabilitation Hospital

Greg Vanderheiden
Director, Trace Research and Department Center, Madison, WI

Jane West
Disability Consultant

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 be 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 or 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;

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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 visiually-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.**

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

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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.

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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 or 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 visiually-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.**

June 14, 2000

MEMORANDUM FOR MARY BETH CAHILL

FROM: Jonathan Young, OPL Associate Director for Disability Outreach

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; and, 3) discuss possible destinations and deliverables for the trip.

I. BACKGROUND

A1. 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 purpose of the Task Force, according to the Executive Order, "is to create a coordinated and aggressive national policy to bring adults with disabilities into gainful employment at a rate that is as close as possible to that of the general adult population." The conceptual foundation of the Task Force is that 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. "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 President noted that people with disabilities are central to resolving a top domestic policy challenge: "how can we continue to grow this economy and lift the standards of living of our people until we embrace everybody who has not participated in the recovery; keep the recovery going..., and not have an explosion of inflation?" The President suggested three possible answers: 1) get more unemployed people into the work force; 2) target large areas that have been left out of economic growth; and, 3) find more markets abroad. "The last big chunk of people in this country who could keep the economy going for all of us, with low inflation," President Clinton said, are "Americans with disabilities -- who want to work, who can work, and who are not in the work force. Every American citizen should have a selfish interest in the pursuit of this goal in the most aggressive possible way."

A2. People with Disabilities as a "New Market"

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 be 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 is convening 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

The disability community has recognized the benefits and importance of technology for many years. Screen readers, refreshable Braille, closed-captioning, telephone relay services, manual and motorized wheelchair devices, prosthetics, and many other technologies have enhanced the abilities and opportunities of people with disabilities. The National Institute for Disability and Rehabilitation Research in the Department of Education has helped support a research agenda for assistive technology. Other federal departments and agencies have deliberated, at least internally, about technology and disability. And a number of individuals and agencies have documented the specific interests of people with disabilities in the information age -- both in terms of the opportunities and challenges.[1]

The Department of Commerce's high-profile consideration of the Digital Divide, however, has not generally recognized the importance of information technology for people with disabilities, resulting in criticism from the disability community. Advocates have noted:

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[1] See, for example: Cynthia D. Waddell, J.D., "The Growing Digital Divide In Access For People With Disabilities: Overcoming Barriers To Participation," Paper presented at "Understanding The Digital Economy: Data, Tools and Research," May 25 and 26, 1999, US Department of Commerce, Washington DC, http://www.aasa.dshs.wa.gov/access/waddell.htm; Susan Brummel, "People with Disabilities and the NII: Breaking Down Barriers, Building Choice," September 1994 National Information Infrastructure White Paper, http://www.itpolicy.gsa.gov/coca/nii.htm; *Access To Multimedia Technology By People With Sensory Disabilities*, National Council on Disability, Washington, DC, March 13, 1998, http://www.ncd.gov/newsroom/publications/sensory.html.

- The Department's series of reports, *Falling Through the Net*,[2] makes scant reference to people with disabilities;
- Government-funded Community Access Centers, replete with the most advanced technologies, have reportedly (in some instances) been created in spaces inaccessible to people using wheelchairs;
- Neglect of disability in defining the Digital Divide also characterized early development of White House action on the issue (public statements referenced race, income, education, and geography).

The President's next Digital Divide trip provides an opportunity to show renewed leadership in this area, building on the incorporation of disability into the December 1999 E-Government and E-Society directives.

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]."[3] 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);
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- 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:

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[2] "Falling Through the Net: Defining the Digital Divide," July 8, 1999 (revised November 1999), http://www.ntia.doc.gov/ntiahome/fttn99/contents.html; "Falling Through the Net II: New Data on the Digital Divide," July 1998, http://www.ntia.doc.gov/ntiahome/fttn99/contents.html; "Falling Through the Net: A Survey of 'Have Nots' in Rural and Urban America," July 1995, http://www.ntia.doc.gov/ntiahome/fallingthru.html.

[3] H. Stephen Kaye, "Computer and Internet Use Among People with Disabilities," *Disability Statistics Report (13)*, Washington, DC: U.S. Department of Education, 2000, p. 1.

- 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;
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- **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.
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- **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). The following themes are suggested as a 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.

Double-Edged Sword for People with Disabilities and America. Information technology can provide social, educational, and economic opportunities for people disabilities like never before. A blind man taking customer product orders over the telephone for GSA, for example, who utilized speech-to-text and refreshable Braille technologies to do his job, recently explained an encounter he had with one of his customers. The GSA employee, "John," was such an effective and reliable customer service representative that this one customer, "Dave," always asked to place his orders with John. Dave surprised John one day by saying he was in Washington and wanted a chance to meet. John obliged him, but this time Dave was the one who got surprised. Over the telephone, Dave had no idea that John was blind, and could not have imagined a blind person could work so deftly with computers. John showed him how he listened to his customers in one ear as the computer translated speech to text in his other ear, while the refreshable Braille display indicated what was on the screen and enabled him to double-check his work. These and similar technologies enable many people with disabilities to compete in the workplace. But information technology is a double-edged sword, for if the technologies are not fully accessible and affordable, information technology will further shut people with disabilities out of the mainstream rather than promote improved integration. The ability of people with disabilities to help address America's labor shortages and promote economic growth in the New Economy thus depend upon accessible technologies -- both in terms of availability and usability.

Customization, Innovation and Accessible Technology. Each individual may, at certain times, have variable preferences in how they want the content of an electronic document communicated to them or how they would like to input information into the computer. He or she would want these preferences to be portable and not machine dependent. For people with sensory and motion impairments, the preferences are absolutely critical, but for others it will probably be a welcome convenience. If car manufacturers are focusing intently on developing electronic dashboards that can be customized by drivers, customizing how information is presented on computers and how information input functions can be viewed as just another stage in the development of consumer choice in products.

Meeting the Needs of the Boomer Generation. With the leading edge of the post-war baby boomers turning 55, there is a large demographic of individuals who will want to stay involved and active but whose sensory capabilities may not be as sharp as they once were. This generation also happens to be among the wealthiest in American history and have historically been able to use their buying power to enormous effect. Baby boomers who now own computers will certainly be looking for solutions (software, hardware, and services) that will enable them to remain productive and connected. The knowledge gained by developing tools to assist people with disabilities can be refined and applied to another market.

Affordability. The essence of mass marketing is developing products in demand at a price range that consumers are willing to pay. Home computers over the past five years have become, due to both changes in perception and improvements in capability, truly mass market products with increasingly high rates of household penetration in the population. Devices are being introduced in the market that now cost below a thousand dollars and some with limited capabilities can be obtained for around $500. Irrespective of specialized technologies, people with disabilities benefit from affordability of general information technology. To offer comprehensive service to the market segment of individuals with disabilities, features that offer physical and sensory

accessibility must also be affordable. Through further research and analysis they must be priced to service this demographic group while generating income and profits for the provider.

Government by Example. The Federal Government is in a position to use its influence as a purchaser of electronic software and information technology equipment to require changes in design that will increase accessibility for people with disabilities. Given the President's commitment to make the unemployment rate for people with disabilities approach the general population, federal agencies and departments can set trends for private industry by integrating people with disabilities into the federal workforce, and providing the technology tools they need. There are opportunities for exchange of information that may of be benefit to all.

Design-Stage Innovation. The realities of structural accessibility for buildings is instructive in the context of information technology. The ADA focused on new construction and renovations (requiring only that "readily achievable" modifications had to be made to existing structures) because the costs of accessibility features are minimal if incorporated at the design stage. Similarly, the costs of promoting accessibility in wireless telecommunications are minimal if pursued at the design stage. Working to develop a level of awareness of usability by corporate and government leaders in Research & Development can help avoid costly retroactive changes.

B. Conceptual Possibilities for Deliverables

Because recognition of disability as a central component of the digital divide lags behind recognition of other factors, public and private entities may be less prepared to offer initiatives to help bridge this digital divide. Following are thematic areas where actions might be pursued:

B1. Government

Hiring in Information Technology. Perhaps the most effective way to help address the IT needs of people with disabilities is to integrate them throughout federal IT jobs. They could help other IT experts understand the potential of people with disabilities while bringing their own expertise to tackling high-tech challenges.

Telecommuting Customer Service. Some government customer service operations could be directed toward people with disabilities trained to telecommute from their homes over the internet. This is a rapidly developing industry, and the government could help by demonstrating leadership in hiring people with disabilities.

High-Tech Internships and Mentoring. Less than one-half of one percent of individuals with disabilities who join the SSDI/SSI roles ever get off. By providing high school and college students with internships and other IT mentoring experiences, the federal government can help interest more people in IT and provide experience important for competing in the job market.

Data Collection and New Markets. Long-term solutions for bridging the disability divide for people with disabilities will necessitate effective information gathering and analysis, and

communication with the business community, which are not currently being pursued adequately. Perhaps the President could issue an Executive Order creating a Task Force within the Department of Commerce, which could help establish the appropriate structures to make disability an integrated, priority issue within the Department.

Government Reporting. Commerce's *Falling through the Net* reports have been remarkably effective in building momentum for bridging the digital divide, but have not addressed disability issues. Disability could be identified as a priority area to be integrated in future reports. By accurately identifying and framing the problems as other aspects of the divide, government reports could have a profound impact on increasing employment for people with disabilities.

Accessibility of Government-Funded Digital Divide Initiatives. Many of the general community and classroom-oriented initiatives to bridge the digital divide could help people with disabilities, provided they are accessible to people with disabilities. In other words, separate programs need not be created, but agencies could be more aggressive in ensuring that they include usability in designing their information technology programs.

Section 508. Effective implementation of Section 508 could help creative incentives in the private sector to be more aggressive in designing accessible technologies. The Department of Commerce could work with industry to set up a certification organization to develop testing procedures to determine compliance with testing standards.

Continued Funding of Assistive Technology Research. The National Institute on Disability and Rehabilitation Research (NIDRR) is a leader in promoting the development of accessible technologies. One current "Young Scholar" funded by NIDRR is developing "auditory displays," that use stereophonic (side-to-side) and tonal (up-and-down) sounds to present graphs and other visuals to blind persons.

Technology Loan Programs. Although many assistive technologies are minimal in cost, others, such as speech devices for people with cerebral palsy, are costly. Government-subsidized loans could help individuals with high-cost needs.

B2. PRIVATE SECTOR

Hiring Commitments. Welfare-to-Work was successful because the corporate sector made strong and public commitments to providing the education and training and other supports necessary to achieve lasting employment opportunities for people on welfare. Similar commitments to hire people with disabilities, especially in IT jobs, could heighten the overall economic well-being of disabled Americans, which correlates to computer ownership and internet access.

Internships and Mentoring. The private sector could partner with the federal government to provide internship and other mentoring opportunities for people with disabilities.

Donation of Internet Accounts. Internet service providers could parallel their initiatives for minority populations by donating internet free accounts to youth with disabilities. A questionnaire could be designed and administered on-line (someone could donate their services to do this) to determine the use of these accounts, and its impact on school, work, socialization, and other factors.

Telecommuting. Consulting firms could analyze which industries would benefit from a part-time, home-based telecommuting workforce and identify a business framework in which this could be a manageable enterprise.

Design-Stage R&D. IT firms could commit resources to R&D in developing accessible products and services at the design stage.

Supplying Computer and Internet Devices. Non-profits working with children and adults with disabilities could develop partnerships to provide low-end computer and web devices to help people with disabilities "get connected" to IT.

Sponsoring Accessible Computer Facilities. Corporations could play an important role in ensuring that library and community computer resource centers attend to the needs of people with disabilities.

Distance Learning. Internet Training companies could develop and execute a program on how to teach visually impaired and blind individuals through distance learning.

Media Attention. Electronic business magazines could make commitments to covering the opportunities (and challenges) presented by the disability labor market and the need for customizable interface products.

III. DESTINATIONS AND DELIVERABLES

A. Recommended Destination for Trip

One current practice is clearly best-equipped to illustrate the themes outlined above: the **Willow CyberCenter Networks** of 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.

Willow is a for-profit corporation that bills itself as the "ultimate CSR (Customer Service Representative) staffing solution." Its website (www.willowcsn.com) boasts that "Leading corporations across America like Ticketmaster and the Home Shopping Network are expanding their labor pool, increasing profits and improving customer service **without** building new call centers." Willow fills a business need: companies with large customer service call-in operations face significant overhead costs in maintaining call centers, and struggle to meet peak periods that can be irregular and unanticipated. Willow meets these challenges by training a network of

CyberAgents, who work out of their homes and handle customer service calls over the phone and through the Internet.

Willow is an innovative example of public-private partnering. Companies participating in the Network (the Clients) save money by reducing overhead costs, including training of personnel and high turnover rates. Each individual CyberAgent is responsible for financing his or her own home office, estimated at around $2,500. But government subsidies help individuals get their businesses started, and the State of Florida offers public school classrooms for training the CyberAgents.

Willow's primary role is to develop a network of corporate clients and recruit a pool of qualified CyberAgents, and to provide a web-based software application whereby clients register the hours they need staffed, and CyberAgents sign up for the posted hours they wish to work (and for which clients). CyberAgents go through a basic training that includes instruction about creating and maintaining one's own independent business, and then pursue applied training for the specific call content of individual clients. Distance training is facilitated through the non-profit National Telecommuting Institute (NTI). CyberAgents work no more than two consecutive hours a day for any one Client, so they must become trained for several Clients.

While the Willow Network offers dramatic benefits to corporate clients, it offers equally attractive benefits to the CyberAgents. (Willow estimates there will be 800,000 CyberAgents across the U.S. within 5 years.) Although OPL first encountered Willow through Gary Barron, a Willow consultant, who is working with NTI to seek the participation of government agencies in the Willow Network to hire people with disabilities, the Newtork's social benefits are much broader. OPL had the opportunity to attend one of Willow's monthly conferences in September 1999. There were testimonials from a mother who wanted the flexibility to work at home while caring for small children, from a top real estate agent who didn't want to miss his youngest son's childhood, and a retired Vice President of a bank who saw many friends languish in retirement and wanted to remain active. It offers individuals flexibility, variety, the ability to avoid transportation cost and stress, and savings in work-related expenses such as clothing.

It also offers comparatively excellent income. Whereas customer service agents working out of call centers may make little more than minimum wage and devote an entire work-day to the same types of calls, CyberAgents average between $13 and $18 an hour (well above the so-called "living wage"), and sometimes make as much $25 per hour. Agents can earn so much more at the same time clients increase their profits because the Clients typically face dramatic overhead costs in maintaining call centers.

For people with disabilities, being a CyberAgent offers additional benefits. For many people, the time and costs associated with transportation to work can be prohibitive. Working out of the home actually enables individuals to *increase* their social lives because they spend so much less time and energy in preparing for and traveling to and from work. Moreover, becoming an independent entrepreneur offers a level of individual reward that far exceeds working for minimum wage. Sahadeo Bickram, a married Hispanic wheelchair-user and father of two children, describes how he can do his therapy in the morning, work from 12-5, have dinner with his family and help his kids with their homework, and then work again in the evening. Working

for Willow has enabled Sahadeo to move out of public housing and purchase his own home. He contrasts his material well being: before Willow, he says, he got to the point where he couldn't afford to go to K-Mart to buy his children Christmas gifts; now, he's in a position to buy gifts for all the kids on his block!

Because the Willow Network is web-based, many of the Internet accessibility initiatives taking place around the country could be demonstrated at Willow in Miami. President Clinton, for example, could visit the home of Sahadeo and even take a call from one of Willow's Clients as a CyberAgent. By emphasizing this end result of people with disabilities helping to fill a business need, the President would have a meaningful context for emphasizing why it is important to make information technology not only available to but also usable by all Americans.

In Miami the President could highlight, among other things:

- The W3C Web Accessibility Initiative's efforts to make internet sites accessible;
- Edapta's efforts to provide Internet "Transformations" according to user preferences (e.g. increasing size of print, varying color contrasts, offering decision trees);
- Distance learning initiatives, including those at MIT;
- Projects designed to provide computers and Internet accounts to people with disabilities.

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.

- **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;
- The **National Science Foundation** has expressed an interest in developing a deliverable (yet to be defined).

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.**

June 7, 2000

MEMORANDUM FOR MARY BETH CAHILL

FROM: Jonathan Young, OPL Associate Director for Disability Outreach

RE: President Clinton's Digital Divide Disability Trip

INTRODUCTION

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. And it improves the likelihood of financial independence and economic self-sufficiency for people with disabilities.

On Friday, April 14, Gene Sperling announced internally and to a couple of outside advocates that the President would add a disability trip to his Digital Divide tour. 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."

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; and, 3) discuss possible destinations and deliverables for the trip.

I. BACKGROUND

A1. EMPLOYMENT OF ADULTS WITH DISABILITIES

Administration Disability Policy currently centers on the need to increase employment opportunities for people with disabilities, and has recently focused on the recommendations of the Presidential Task Force on Employment of Adults with Disabilities (hereafter, Task Force), which the President created by Executive Order on March 13, 1998. The main problem the Executive Order addressed was a staggering rate of unemployment for working-age people with "severe" disabilities. It is difficult to assess a precise employment rate because there are a multitude of different federal definitions of disability, and because statistics depend upon self-reporting. Data reported by the Census Bureau, however, based on the 1994-95 Survey of Income and Program Participation (SIPP), indicate the following employment rates among people 21 to 64 years of age:

- **82.1%** of people **without disabilities**
- **76.9%** of people **with disabilities not labeled severe**
- Only **26.1%** of people **with severe disabilities**.[1]

The purpose of the Task Force, according to the Executive Order, "is to create a coordinated and aggressive national policy to bring adults with disabilities into gainful employment at a rate that is as close as possible to that of the general adult population." The conceptual foundation of the Task Force is that 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.

Administration efforts to break down employment barriers for people with disabilities[2] include:

- Passage of the Ticket to Work and Work Incentives Improvement Act;
- Issuing an OPM *Plan* for hiring and promoting people with disabilities throughout the Federal government;
- Raising the Social Security Substantial Gainful Activity (SGA) level to $700;
- Ending the disparities between federal hiring of people with psychiatric and physical disabilities.

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. "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 President noted that people with disabilities are central to resolving a top domestic policy challenge: "how can we continue to grow this economy and lift the standards of living of our people until we embrace everybody who has not participated in the recovery; keep the recovery going..., and not have an explosion of inflation?" The President suggested three possible answers: 1) get more unemployed people into the work force; 2) target large areas that have been left out of economic growth; and, 3) find more markets abroad. "The last big chunk of people in this country who could keep the economy going for all of us, with low inflation," President Clinton said, are "Americans with disabilities -- who want to work, who can work, and who are not in the work force. Every American citizen should have a selfish interest in the pursuit of this goal in the most aggressive possible way."

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[1] "Re-Charting the Course: First Report of the Presidential Task Force on Employment of Adults with Disabilities," November 15, 1998, p. Appendix-69

[2] The White House Disability Accomplishments document provides a comprehensive list of achievements and current proposals with descriptions.

A2. People with Disabilities as a "New Market"

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 be 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 is convening 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

The disability community has recognized the benefits and importance of technology for many years. Screen readers, refreshable Braille, closed-captioning, telephone relay services, manual and motorized wheelchair devices, prosthetics, and many other technologies have enhanced the abilities and opportunities of people with disabilities. The National Institute for Disability and Rehabilitation Research in the Department of Education has helped support a research agenda for assistive technology. Other federal departments and agencies have deliberated, at least internally, about technology and disability. And a number of individuals and agencies have documented the specific interests of people with disabilities in the information age -- both in terms of the opportunities and challenges.[3]

The Department of Commerce's high-profile consideration of the Digital Divide, however, has not generally recognized the importance of information technology for people with disabilities, resulting in criticism from the disability community. Advocates have noted:

- The Department's series of reports, *Falling Through the Net*,[4] makes scant reference to people with disabilities;
- Government-funded Community Access Centers, replete with the most advanced technologies, have reportedly (in some instances) been created in spaces inaccessible to people using wheelchairs;
- Neglect of disability in defining the Digital Divide also characterized early development of White House action on the issue (public statements referenced race, income, education, and geography).

The President's next Digital Divide trip provides an opportunity to show renewed leadership in this area, building on the incorporation of disability into the December 1999 E-Government and E-Society directives.

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]."[5] Its principle findings, based on Current Population Survey data include:

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[3] See, for example: Cynthia D. Waddell, J.D., "The Growing Digital Divide In Access For People With Disabilities: Overcoming Barriers To Participation," Paper presented at "Understanding The Digital Economy: Data, Tools and Research," May 25 and 26, 1999, US Department of Commerce, Washington DC, http://www.aasa.dshs.wa.gov/access/waddell.htm; Susan Brummel, "People with Disabilities and the NII: Breaking Down Barriers, Building Choice," September 1994 National Information Infrastructure White Paper, http://www.itpolicy.gsa.gov/coca/nii.htm; *Access To Multimedia Technology By People With Sensory Disabilities*, National Council on Disability, Washington, DC, March 13, 1998, http://www.ncd.gov/newsroom/publications/sensory.html.

[4] "Falling Through the Net: Defining the Digital Divide," July 8, 1999 (revised November 1999), http://www.ntia.doc.gov/ntiahome/fttn99/contents.html; "Falling Through the Net II: New Data on the Digital Divide," July 1998, http://www.ntia.doc.gov/ntiahome/fttn99/contents.html; "Falling Through the Net: A Survey of 'Have Nots' in Rural and Urban America," July 1995, http://www.ntia.doc.gov/ntiahome/fallingthru.html.

[5] H. Stephen Kaye, "Computer and Internet Use Among People with Disabilities," *Disability Statistics Report (13)*, Washington, DC: U.S. Department of Education, 2000, p. 1.

- 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;
- **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). The following themes are suggested as a 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.

Double-Edged Sword for People with Disabilities and America. Information technology can provide social, educational, and economic opportunities for people disabilities like never before. A blind man taking customer product orders over the telephone for GSA, for example, who utilized speech-to-text and refreshable Braille technologies to do his job, recently explained an encounter he had with one of his customers. The GSA employee, "John," was such an effective and reliable customer service representative that this one customer, "Dave," always asked to place his orders with John. Dave surprised John one day by saying he was in Washington and wanted a chance to meet. John obliged him, but this time Dave was the one who got surprised. Over the telephone, Dave had no idea that John was blind, and could not have imagined a blind person could work so deftly with computers. John showed him how he listened to his customers in one ear as the computer translated speech to text in his other ear, while the refreshable Braille display indicated what was on the screen and enabled him to double-check his work. These and similar technologies enable many people with disabilities to compete in the workplace. But information technology is a double-edged sword, for if the technologies are not fully accessible and affordable, information technology will further shut people with disabilities out of the mainstream rather than promote improved integration. The ability of people with disabilities to help address America's labor shortages and promote economic growth in the New Economy thus depend upon accessible technologies -- both in terms of availability and usability.

Customization, Innovation and Accessible Technology. Each individual may, at certain times, have variable preferences in how they want the content of an electronic document communicated to them or how they would like to input information into the computer. He or she would want these preferences to be portable and not machine dependent. For people with sensory and motion impairments, the preferences are absolutely critical, but for others it will probably be a welcome convenience. If car manufacturers are focusing intently on developing electronic dashboards that can be customized by drivers, customizing how information is presented on

computers and how information input functions can be viewed as just another stage in the development of consumer choice in products.

Meeting the Needs of the Boomer Generation. With the leading edge of the post-war baby boomers turning 55, there is a large demographic of individuals who will want to stay involved and active but whose sensory capabilities may not be as sharp as they once were. This generation also happens to be among the wealthiest in American history and have historically been able to use their buying power to enormous effect. Baby boomers who now own computers will certainly be looking for solutions (software, hardware, and services) that will enable them to remain productive and connected. The knowledge gained by developing tools to assist people with disabilities can be refined and applied to another market.

Affordability. The essence of mass marketing is developing products in demand at a price range that consumers are willing to pay. Home computers over the past five years have become, due to both changes in perception and improvements in capability, truly mass market products with increasingly high rates of household penetration in the population. Devices are being introduced in the market that now cost below a thousand dollars and some with limited capabilities can be obtained for around $500. Irrespective of specialized technologies, people with disabilities benefit from affordability of general information technology. To offer comprehensive service to the market segment of individuals with disabilities, features that offer physical and sensory accessibility must also be affordable. Through further research and analysis they must be priced to service this demographic group while generating income and profits for the provider.

Government by Example. The Federal Government is in a position to use its influence as a purchaser of electronic software and information technology equipment to require changes in design that will increase accessibility for people with disabilities. Given the President's commitment to make the unemployment rate for people with disabilities approach the general population, federal agencies and departments can set trends for private industry by integrating people with disabilities into the federal workforce, and providing the technology tools they need. There are opportunities for exchange of information that may of be benefit to all.

Design-Stage Innovation. The realities of structural accessibility for buildings is instructive in the context of information technology. The ADA focused on new construction and renovations (requiring only that "readily achievable" modifications had to be made to existing structures) because the costs of accessibility features are minimal if incorporated at the design stage. Similarly, the costs of promoting accessibility in wireless telecommunications are minimal if pursued at the design stage. Working to develop a level of awareness of usability by corporate and government leaders in Research & Development can help avoid costly retroactive changes.

B. Conceptual Possibilities for Deliverables

Because recognition of disability as a central component of the digital divide lags behind recognition of other factors, public and private entities may be less prepared to offer initiatives to help bridge this digital divide. Following are thematic areas where actions might be pursued:

B1. GOVERNMENT

Hiring in Information Technology. Perhaps the most effective way to help address the IT needs of people with disabilities is to integrate them throughout federal IT jobs. They could help other IT experts understand the potential of people with disabilities while bringing their own expertise to tackling high-tech challenges.

Telecommuting Customer Service. Some government customer service operations could be directed toward people with disabilities trained to telecommute from their homes over the internet. This is a rapidly developing industry, and the government could help by demonstrating leadership in hiring people with disabilities.

High-Tech Internships and Mentoring. Less than one-half of one percent of individuals with disabilities who join the SSDI/SSI roles ever get off. By providing high school and college students with internships and other IT mentoring experiences, the federal government can help interest more people in IT and provide experience important for competing in the job market.

Data Collection and New Markets. Long-term solutions for bridging the disability divide for people with disabilities will necessitate effective information gathering and analysis, and communication with the business community, which are not currently being pursued adequately. Perhaps the President could issue an Executive Order creating a Task Force within the Department of Commerce, which could help establish the appropriate structures to make disability an integrated, priority issue within the Department.

Government Reporting. Commerce's *Falling through the Net* reports have been remarkably effective in building momentum for bridging the digital divide, but have not addressed disability issues. Disability could be identified as a priority area to be integrated in future reports. By accurately identifying and framing the problems as other aspects of the divide, government reports could have a profound impact on increasing employment for people with disabilities.

Accessibility of Government-Funded Digital Divide Initiatives. Many of the general community and classroom-oriented initiatives to bridge the digital divide could help people with disabilities, provided they are accessible to people with disabilities. In other words, separate programs need not be created, but agencies could be more aggressive in ensuring that they include usability in designing their information technology programs.

Section 508. Effective implementation of Section 508 could help creative incentives in the private sector to be more aggressive in designing accessible technologies. The Department of Commerce could work with industry to set up a certification organization to develop testing procedures to determine compliance with testing standards.

Continued Funding of Assistive Technology Research. The National Institute on Disability and Rehabilitation Research (NIDRR) is a leader in promoting the development of accessible technologies. One current "Young Scholar" funded by NIDRR is developing "auditory

displays," that use stereophonic (side-to-side) and tonal (up-and-down) sounds to present graphs and other visuals to blind persons.

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III. DESTINATIONS AND DELIVERABLES

A. Recommended Destination for Trip

One current practice is clearly best-equipped to illustrate the themes outlined above: the **Willow CyberCenter Networks** of 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.

Willow is a for-profit corporation that bills itself as the "ultimate CSR (Customer Service Representative) staffing solution." Its website (www.willowcsn.com) boasts that "Leading corporations across America like Ticketmaster and the Home Shopping Network are expanding their labor pool, increasing profits and improving customer service **without** building new call centers." Willow fills a business need: companies with large customer service call-in operations face significant overhead costs in maintaining call centers, and struggle to meet peak periods that can be irregular and unanticipated. Willow meets these challenges by training a network of CyberAgents, who work out of their homes and handle customer service calls over the phone and through the Internet.

Willow is an innovative example of public-private partnering. Companies participating in the Network (the Clients) save money by reducing overhead costs, including training of personnel and high turnover rates. Each individual CyberAgent is responsible for financing his or her own home office, estimated at around $2,500. But government subsidies help individuals get their businesses started, and the State of Florida offers public school classrooms for training the CyberAgents.

Willow's primary role is to develop a network of corporate clients and recruit a pool of qualified CyberAgents, and to provide a web-based software application whereby clients register the hours they need staffed, and CyberAgents sign up for the posted hours they wish to work (and for which clients). CyberAgents go through a basic training that includes instruction about creating and maintaining one's own independent business, and then pursue applied training for the specific call content of individual clients. Distance training is facilitated through the non-profit National Telecommuting Institute (NTI). CyberAgents work no more than two consecutive hours a day for any one Client, so they must become trained for several Clients.

While the Willow Network offers dramatic benefits to corporate clients, it offers equally attractive benefits to the CyberAgents. (Willow estimates there will be 800,000 CyberAgents across the U.S. within 5 years.) Although OPL first encountered Willow through Gary Barron, a Willow consultant, who is working with NTI to seek the participation of government agencies in the Willow Network to hire people with disabilities, the Newtork's social benefits are much

broader. OPL had the opportunity to attend one of Willow's monthly conferences in September 1999. There were testimonials from a mother who wanted the flexibility to work at home while caring for small children, from a top real estate agent who didn't want to miss his youngest son's childhood, and a retired Vice President of a bank who saw many friends languish in retirement and wanted to remain active. It offers individuals flexibility, variety, the ability to avoid transportation cost and stress, and savings in work-related expenses such as clothing.

It also offers comparatively excellent income. Whereas customer service agents working out of call centers may make little more than minimum wage and devote an entire work-day to the same types of calls, CyberAgents average between $13 and $18 an hour (well above the so-called "living wage"), and sometimes make as much $25 per hour. Agents can earn so much more at the same time clients increase their profits because the Clients typically face dramatic overhead costs in maintaining call centers.

For people with disabilities, being a CyberAgent offers additional benefits. For many people, the time and costs associated with transportation to work can be prohibitive. Working out of the home actually enables individuals to *increase* their social lives because they spend so much less time and energy in preparing for and traveling to and from work. Moreover, becoming an independent entrepreneur offers a level of individual reward that far exceeds working for minimum wage. Sahadeo Bickram, a married Hispanic wheelchair-user and father of two children, describes how he can do his therapy in the morning, work from 12-5, have dinner with his family and help his kids with their homework, and then work again in the evening. Working for Willow has enabled Sahadeo to move out of public housing and purchase his own home. He contrasts his material well being: before Willow, he says, he got to the point where he couldn't afford to go to K-Mart to buy his children Christmas gifts; now, he's in a position to buy gifts for all the kids on his block!

Because the Willow Network is web-based, many of the Internet accessibility initiatives taking place around the country could be demonstrated at Willow in Miami. President Clinton, for example, could visit the home of Sahadeo and even take a call from one of Willow's Clients as a CyberAgent. By emphasizing this end result of people with disabilities helping to fill a business need, the President would have a meaningful context for emphasizing why it is important to make information technology not only available to but also usable by all Americans.

In Miami the President could highlight, among other things:

- The W3C Web Accessibility Initiative's efforts to make internet sites accessible;
- Edapta's efforts to provide Internet "Transformations" according to user preferences (e.g. increasing size of print, varying color contrasts, offering decision trees);
- Distance learning initiatives, including those at MIT;
- Projects designed to provide computers and Internet accounts to people with disabilities.

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.

- **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;
- The **National Science Foundation** has expressed an interest in developing a deliverable (yet to be defined).

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.**