Universal Service and the Disability Community: The Need for Ubiquitous Broadband Deployment

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EXECUTIVE SUMMARY

This paper explores the need to expand the base of universal service to include broadband, which has become vital for the disability community. Universal service is the bedrock upon which functionally equivalent service for Americans with disabilities has developed. Relay services, accessibility of telecommunications equipment, and hearing-aid compatibility all rest upon the universal service doctrine that was first articulated in the Communications Act of 1934. Today, however, the high-speed, always-on, voice/video data services known as broadband increasingly are required for full and equal access to communications for people with disabilities. Universal service does not reach broadband services and products. Bridging the gap, that is, extending universal service to encompass broadband, will require legislation. This paper explores the benefits of taking that step, including those related to independent living, social interaction, health care, and employment.

Introduction

Broadband subscription by residential and business customers has been the major development of the past several years. Annual reports by the Federal Communications Commission (FCC) show that we are nearing majority adoption of broadband by residential customers. At the same time, however, we also see a sharp digital divide between households with high and low incomes (i.e., Government Accountability Office, 2006). Every consumer who uses broadband – or high-speed, always-on connectivity that facilities the convergence of voice, video and date – benefits from its diverse uses and capabilities. People with disabilities may benefit even more than do non-disabled persons from broadband because it creates opportunities for enhanced communication,

independent living, lifelong learning, enhanced quality of life, among a host of other applications.

Since 1934, the universal service fund (USF) has been the mechanism that ensures equality for telecommunications services for all Americans in all communities. The Act's universal-service doctrine, contained in section 1 (requiring the Commission to "make available, so far as possible to all the people of the United States... a rapid, efficient, Nation-wide, and world-wide wire and radio communication crevice with adequate facilities at reasonable charges...[section 151]) and in section 254, is the foundation for affordable telecommunications services and for accessibility for individuals with disabilities. Vital has been the language of “all the people” (incorporating persons with disabilities) and “adequate facilities at reasonable charges” (assuring affordability and setting a standard of quality sufficient to meet basic needs).

The time has come to incorporate broadband into the universal service doctrine. Only in this way will the nation move forward to creation of an all-encompassing umbrella of broadband coverage that provides for accessibility and usability for Americans with disabilities. The goal of USF cannot continue to be met unless this vital step is taken.

I. History of the Universal Service Fund and its Historical Benefits for Americans with Disabilities

In 1934, the technology used for telecommunication infrastructure consisted of twisted-pair copper wiring. While wireline connections could be installed in high-density locations at costs low enough so that residential as well as commercial customers could afford to subscribe, the same was not true in rural areas and in many low-income inner-city neighborhoods. The universal service doctrine came to the rescue. A small fee (in

effect, a tax) applied to all customers subsidized rural and inner-city service, making telecommunications affordable everywhere. Since 1934, this universal service doctrine has been the national policy that supports affordable, widespread telecommunication services for Americans, particularly in underserved communities. Over time, it was the basis for nationwide evolution of technologies that soon were taken for granted, including touch-tone service and long distance service. Later, the words "all the people" came to serve, as well, as the foundation for extending functionally equivalent access to Americans with disabilities. This led to the nationwide deployment of dual-party relay services (later known as telecommunications relay services), hearing-aid compatibility, and accessibility of telecommunications products and services (see, for example, National Council on Disability, 2006).

One early step was taken in the Telecommunications for the Disabled Act of 1982 (TDA). There, Congress relied on the universal service doctrine to speak to the need for affordable specialized consumer premises equipment (SCPSE), noting that allowing people with disabilities to lose access to telephone service would "disserve the statutory goal of universal service," and that "[t]he costs of such lost access, including impairment of the quality of life for disabled Americans, [would] far exceed the costs of maintaining service that the current system allow[ed] telephone companies to include in their general revenue requirements" (quoted in National Council on Disability, 2006). Nonetheless, TDA did little to solve the problem, which persists to this day. Lifeline and Link-Up, two national programs based on the universal service doctrine, help to make telecommunications affordable for low-income Americans. They have two glaring shortcomings: (1) They subsidize traditional, landline telephony and (2) They do not

address the need for specialized CPE. With respect to the former, extension of universal service to encompass broadband products and services is necessary. With respect to the latter, a new national program is needed. At present, some states subsidize some SCPE for some individuals with disabilities, while other states provide no such support. Some states offer TTYs, ring signallers, large-button phone dialers, and similar products to individuals who are registered with the state and are known to have qualifying disabilities. Other states limit eligibility only to such individuals who are also of low socioeconomic status. New York, for example provides TDDs only to individuals who are both deaf/hard of hearing *and* have enrolled in such means-tested programs as Supplemental Security Income (SSI).

The framework for those SCPE programs that do exist is one that assumes that customers will secure telephones on their own (using, if needed, Link-Up) but that the state will help with the cost of additional products that people require in order to be able to benefit from those telephones. Translating that conceptual foundation to the world of broadband, a 2000 Missouri law treats Internet-equipped personal computers as today's equivalent of telephones and provides state support for the add-ons that individuals with disabilities need in order to benefit from Internet-based communications (see http://www.house.state.mo.us/bills00/bills00/sb721.htm). This Missouri model is a shining example of how we as a nation could at one and the same time extend universal service to today's communications technologies and provide for accessibility for persons with disabilities.

When the universal service structure was re-examined in the Telecommunications Act of 1996, policymakers expanded and clarified the fund system. The Act codified the universal service mission of increasing access to advanced telecommunications services throughout the nation and promoting the availability of "quality services at just, reasonable and affordable rates." In addition, the Act established specific requirements for the FCC to implement, such as requiring that low income consumers or individuals who live in rural or high cost areas have access comparable to that of urban consumers, and that elementary and secondary schools and classrooms, health care providers and libraries have access to advanced services through a program called the E-rate (see Appendix, Chart B). The 1996 Act also stated that all providers of telecommunications services should contribute to the USF in a way that Federal and state mechanisms will preserve and advance universal service.

II. The Digital Transition and its Impact on the Universal Service Fund

By some measures, broadband already is a majority-adoption technology, replacing dial-up Internet- and traditional wireline voice-only service. The FCC's most recent report, issued in 2004, noted trends suggesting that in a few years most American households will have broadband (see http://www.fcc.gov/broadband/706.html). Litan (2005) concurred: very soon, a majority of households will be broadband subscribers. A cautionary note was sounded, however, when the GAO showed that low-income households continue to lag far behind (Government Accountability Office, 2006).

This evolving transition to a broadband standard is outpacing the law, notably, for our purposes, the USF. We have known for several years that the long-term financial stability of USF is in doubt, primarily because the interstate fund relies so heavily upon

long-distance landline revenues (Bowe, 2003, rev. 2005). The Telecommunications Act of 1996 requires "all providers of telecommunication services to make an equitable and nondiscriminatory contribution to the preservation and advancement of universal service." In years past, this wording was clear. It envisioned that interstate providers, notably long-distance carriers such as AT&T, MCI, and Sprint, among others, would collect fees from their customers and transfer those fees to the interstate USF. Intrastate providers, prominently local-service carriers such as SBC, Verizon, and competitive local exchange companies (CLECs) were also expected to collect fees from customers. Today, however, the matter is much less clear. Dramatic changes in the industry have made it difficult for many telecommunications services providers to know how much to contribute to the federal universal-service fund and how much to contribute to state programs. In addition, sharply falling long-distance rates have undermined a key foundation for financing universal service (Bowe, 2003, rev. 2005).

The time has come for Internet-based providers to contribute, as well, to USF. Skype, one such provider, had a remarkable 136 million downloads as of January 2007. Skype users pay no USF fees unless they connect to landline phones (as in making emergency calls). The implication is clear: a substantial amount of communications now evades the USF, further undermining its long-term stability. The first month of the 110th Congress saw some bills introduced that would update USF, including HR 42 (Velazquez) in the House and S 101 (Stevens) in the Senate.

In the 1996 Act, the FCC is given authority to amend the definition of universal service over time to include new services, yet to date it has not done so. Section 254(c)(1) states that:

> *Universal service is an evolving level of telecommunications services that the Commission shall establish periodically under this section, taking into account advances in telecommunications and information technologies and services*.[1]

In 1997, the FCC reexamined its universal service mandate to make it more responsive to modern technologies. The Commission chose not to include "advanced services or dial-up Internet access" in its definition of the "core" services eligible for universal service support.[2] This decision was reaffirmed in 2003. The Commission argued that high speed and advanced services did not meet the criteria to be included in the USF because they are not substantially prominent in residential homes. In addition, the Commission recognized that broadband is useful for educational, public health and public safety purposes, but was not "essential". As noted earlier, newer data may show that it now is.

At the time the USF was originally introduced, there was a need for telephone services to be accessible to all communities. Now, phone services have over a 95% penetration rate, nationwide. The USF has made it possible for telephone service to be offered, at reasonable rates, everywhere in the continental United States. It has also brought telecommunications to families of low socioeconomic status. The same goal

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[1] In establishing the definition of services that are eligible for USF support, Section 254(c)(1) directs the Commission to consider "...the extent to which such telecommunications services—
(A) are essential to education, public health, or public safety;
(B) have, through the operation of market choices by customers, been subscribed to by a substantial majority of residential customers;
(C) are being deployed in public telecommunications networks by telecommunications
(D) are consistent with the public interest, convenience, and necessity.

[2] The FCC found that the following nine "core" services would be eligible for USF support: single-party service; voice grade access to the public switched telephone network; local usage: Dual Tone Multifrequency signaling or its functional equivalent; access to emergency services; access to operator services; access to interexchange service; access to directory assistance; and toll limitation services for qualifying low-income consumers. *Federal-State Joint Board on Universal Service*, CC Docket No. 96-45, Report and Order, 12 FCC Rcd 8776, 8807-25, para. 56-87 (1997) (*First Report and Order*) (subsequent history omitted).

needs to be applied to broadband. Broadband services are no longer a convenience. Individuals utilize the capabilities of e-commerce to purchase products and life necessities. Employees are able to improve the quality of their work and contribute valuable time through broadband connections. Citizens can participate in civic responsibilities, research health care benefits and make online government transactions with high-speed internet access. Consumers are participating in online discourse, watching movies over the Internet, communicating with long-distance friends and family and enjoying faster and more effective communications. All of these benefits are even more valuable for the disability community. Often, people with disabilities have mobility issues, are unable to use regular service equipment due to lack of accessibility or have disabilities that affect their ability to use popular communication services. With broadband, people with disabilities will not be left behind in the growing digital society. They can gain independence, enjoy better health care, integrate into society and utilize communication to reduce isolation. The FCC should revisit broadband's place in the USF because it is evident that it is beneficial to all consumers. The Congress must act if the FCC does not.

III. Empowering People with Disabilities through Broadband Technology

Broadband technologies foster more accessible and inclusive forms of communication, enabling people with disabilities to lead richer and more productive lives. Broadband provides instant access to multimedia content and allows users to access information at anytime and anyplace. For the 35 million Americans over 65 and the 36 million non-elderly Americans with disabilities, broadband makes a significant difference in the quality of life and well being of this community (Litan, 2005). A universal service

policy that fosters broadband deployment will contribute to much greater availability of high-speed connections so that more members of the disability community can become empowered through technology.

Broadband Fosters Effective Communication.

Broadband changes how people use the Internet. Instant messaging, for example, remains open and immediately available, even 24/7 if users desire. People begin using the Web to gather information in ways they once used encyclopedias, dictionaries, and other print resources. The fact that broadband carries voice, video and data, including full-motion video, brings distant relatives and friends much closer together. Students of all ages may continue their education. People may work from home or a nearby site, saving time and energy. Broadband is a transformative technology. It means as much, in fact more, for people with disabilities (Adler, 2006).

- **Interpreting Revolutions – Presence of Interpreters:** For those who are deaf and hard of hearing, sign language interpreters are a necessary part of life. These individuals need interpreters for routine tasks such as going to the doctor, participating in business practices, or communicating with a friend. The United States has a long-term and severe shortage of qualified sign-language interpreters. As a result, the costs of interpreting services rise every year at rates far outpacing that of consumer inflation. Prices for interpreting services currently range from $50 - $80 an hour and many services require a minimum of a two hour reservation, with additional costs in travel fees. The interpreting shortages also force customers to book an interpreter weeks and months in advance, making it difficult for customers to manage their sign-language services (Bowe, 2005).

Broadband promises to help alleviate this shortage. Remote interpreting, an innovative and effective mode of interpreting, has been developed with the assistance of high-speed communications and low-cost digital cameras. With remote interpreting, the interpreters can work from their offices and the client can be anywhere, so long as they have high-speed connections and video conferencing devices. The interpreter will field a call on a PC-equipped video camera that is focused on him/ her and will sign what he/she hears. The client will then watch a PC screen displaying the interpreter's upper body and face. Broadband is necessary in this transaction because it provides a sharp and clear image (see Appendix, Chart A). The benefits of this service are significant. First, the interpreting service bills by the minute, so the client is only billed for the time needed. Second, remote interpreting makes more effective use of the scarce resource of interpreter time. The interpreter no longer needs time for travel and can serve more clients (Alliance for Public Technology, 2003).

Broadband-based video relay services (VRS) are, by far, the fastest-growing form of relay. The FCC reported more than two million minutes of VRS use per month in 2005. VRS calls connect deaf to hearing and hearing to deaf callers. They enrich daily lives because more than 80% of all Americans who are deaf have hearing parents and/or siblings, many of whom never learned to sign fluently. VRS, too, supports the participation of deaf individuals in conference calls, facilitating employment at middle and upper levels of management.

Peer-to-Peer signing is another form of modern video communication. Many individuals who are deaf or hard of hearing read and write at primary-grade levels. That makes written communication at a distance problematic. With the use of two-way

broadband video, people with hearing disabilities are able communicate in a more clear and visual manner. With broadband, individuals who have may not be literate in e-mail or instant messaging benefit from the visual services of peer-to-peer signing (Bowe, 2005).

- **Searchable Text:** According to the American Foundation for the Blind, there are roughly 10 million blind or visually impaired Americans. The group estimates that roughly 1.5 million people who have difficulty seeing print even with glasses have access to the Internet -- but that only about 200,000 who cannot see print at all have access. Broadband technology offers a practical solution for the large amounts of bandwidth that are required for text conversion to audio so that it can be navigated by someone who has vision impairments. Printed materials, such as textbooks, newspapers or government reports, can either be downloaded or viewed in real time over a broadband connection. This eliminates the need to wait for availability on a CD-ROM or other conventional devices. It also makes it possible to go directly to a specific item instead of searching through large amounts of audio material.

Broadband Expands Opportunities for Employment.

According to Cornell University's Disability Statistics, in 2004, there were 2.5 million disabled, working-age individuals, of whom just 37.5% were working. Many people with disabilities do not work because of mobility issues, hearing or vision disabilities and hostile work environments that are not accommodating to the disability community. VoIP, assistive technology devices, video services and other technological advances that broadband supports expand employment opportunities and make it easier for people with disabilities to be more productive and effective in the work place.

According to the Cornell center, in 2004 an estimated 28.2 percent of civilian non-institutionalized, men and women with a work limitation aged 18-64 lived in families with incomes below the poverty level (See Appendix, Chart C). Half (50.3 percent) had family incomes of under $20,000 a year (see, also, Kaye 2000). The 2006 United States Department of Health and Human Services Poverty Guidelines set $20,000 as the federal poverty level for families of four. (See Appendix, Chart E) Broadband would make it easier for people with disabilities to work and earn income because they would have various means of communicating and producing work, like VoIP to make work phone calls and instance access to information. With broadband, people with disabilities are able to "telecommute," meaning they can work from home or other locations and continue to be productive employees. In particular, broadband can permit individuals to continue work after retirement as consultants and have the ability to become entrepreneurs in Internet based businesses (Litan, 2005). In this way, people with disabilities could gain financial independence, become active participants in the job market, decrease isolation and become empowered by their own capabilities. Importantly, many would escape poverty.

In addition to the personal gains from the availability of high-speed Internet, broadband could help to generate a larger work force which would create enormous economic benefits for the United States. An increased labor force will mean higher output for the economy as a whole (See Appendix, Chart H). With this larger work force, fewer citizens would have to rely on entitlement and social programs for support. America has multiple government programs in place to meet the special needs of the disabled community. These programs are incredibly expensive, at an estimated $200 billion/year.

Costs will only increase over time when the baby boomers begin to retire and health care costs soar due to their demands. If the United States were to implement policies that promote broadband deployment, the result could be an increased work force that would generate $726 to $1.4 trillion in cumulative additional output through 2030, measured in 2005 dollars (Litan, 2005). The effect is large because two things happen concurrently: tax expenditures (benefit payments) would fall while tax collections (income tax payments) would rise.

Broadband Provides Substantial Health Care Benefits.

As broadband services continue to evolve, their impact on the disability community and health care costs is likely to be substantial and valuable. Developments like telemedicine, which make it possible for the delivery of healthcare remotely, have a huge impact for the disability community. Specialists who are geographically removed from patients can view very high-quality images, enabling them to consult on specialized care even for rural residents who have disabilities. The quality far surpasses that available with low-speed, dial-up connections (Adler, 2002). With much-needed services that broadband supports, such as tele-health and tele-medicine, individuals with disabilities can live more productively and reduce their health care costs.

- **Live more vibrant and independent lives:** Some of the most effective tele-medicine applications are home health monitoring and support for self-care. Health monitoring can come in the form of broadband-enabled hand-held devices that enable health practitioners to communicate with their clients at home. These devices will “conduct dialogues” with the patients, ask questions and provide health tips and reminders. In this way, doctors can monitor their patients daily and

assess their need for treatment. Small portable or wearable devices are also used to automatically monitor the health of a patient and report back to the doctor's office results. In addition, patient to doctor video conferencing technologies are an effective way to save time and create independence for both patients and doctors. With high-speed video visits and remote consultation, the health professional can examine the patient, test blood pressure, monitor medication intake and observe wound healing among a host of other services (Adler, 2002; Litan, 2005).

- **Reduction in health care costs:** The recent Litan report powerfully shows that we can anticipate very substantial cost savings with the accelerated deployment of broadband in the U.S. According to Litan, by 2030, under existing policies, individuals with disabilities would save $98 billion in health care costs. If broadband deployment is accelerated, individuals with disabilities could save an extra $39 billion, bringing the total to $137 billion in medical costs savings (See Appendix, Chart G). Other benefits accrue, as well. Home monitoring systems rely on the doctor's broadband connection and not the patient's, so people with disabilities do not have to own a computer to reap the benefits of the system and can save money on doctor visits. In addition, individuals with disabilities can participate in online patient support groups that improve their mental states and give them access to health information while assuring them they are not alone. These support groups reduce the frequency of visits to the doctor. Also, access to high-quality medical information informs individuals and families alike,

potentially leading to earlier intervention by well-informed consumers; prevention and early treatment are well-known to enhance health status while lowering costs.

Broadband Will Improve the Quality of Life for People with Disabilities.

Broadband creates communication links, connecting people with disabilities to diverse programs and services and developing important interactions with the surrounding world. Because of broadband, people with disabilities can participate in lifelong learning, independent living and increase their social interactions.

- **Lifelong Learning:** Traditionally, the education model has been thought to involve a student and a classroom. Distance learning, enabled by broadband, can fundamentally change the definition of education. Distance learning is already being implemented in schools like Stanford University, The University of Illinois and Old Dominion University, and perhaps most famously at the University of Phoenix, where students can receive lectures through satellite based programs and video streaming. Through advanced communication technologies, individuals with disabilities can earn a degree through online classes and enhance their career skills with guidance from live instructors. An Alliance for Public Technology report argues that “incorporating more students into learning environments can lead to a better trained workforce and more informed citizenry” (APT, 2003). For those individuals with disabilities interested in other forms of lifelong learning, broadband provides a medium for self education and personal research through assistive devices and services. Education and lifelong e-learning opportunities provide engaging mental stimulation and a sense of self-reliance. Yet, broadband is needed for valuable e-learning so that it can be conducted in various forms including video or other rich multimedia applications.

- **Independent Living:** Individuals with disabilities gain immense freedom when they have access to broadband. It enables them to live independently by supporting their daily activities and keeping them closely connected to the outside world. In addition, tele-presence, or having a "continuous window open into another space" drastically improves capabilities for independent living with the option to be online at all times. Tele-presence, the always-open window, allows individuals who are sick to attend online classes or research their health options. People with physical, health or geographical issues could "travel" over barriers to participate in meetings, work or special events. Those who need group therapy or engage in support groups can "sit in" on sessions without leaving home (Bowe, 2005). Tele-presence would also enable people who are blind or otherwise limited in their access to printed materials, a consistent method of obtaining information in an accessible format (National Council on Disability, 2006). While Tele-presence, as introduced commercially by Cisco Systems in 2006, is very expensive, costs are expected to fall rapidly in the years ahead.
- **Social Interaction:** Millions of Americans are going online for social reasons. More than 31 million broadband users have posted content to the Internet in the form of personal webpages, blogs, or sharing a story or artwork (Pew Internet & American Life Project, 2006). People join social web sites like MySpace, communicate with friends and family through IM, and share pictures online because they enjoy the rich social interactions the Internet can provide. For people with disabilities, these developments are especially beneficial. Often people with disabilities live with a sense of isolation. Whether due to physical or environmental barriers, individuals

with disabilities can be disconnected for long periods of time. With high-speed broadband access, people with disabilities could participate in online dialogues and make long-lasting friendships. Also, they could communicate frequently with friends and family in various text and video platforms, enhancing the emotional bandwidth between loved ones. Lastly, broadband would provide individuals with disabilities the opportunity to participate more fluidly in civic activities, like attending town meetings.

IV. Market Forces are not enough to Accelerate Rapid Deployment of Broadband

A majority of people with disabilities cannot afford high-cost broadband services, although they may be the one community that would benefit the most from its connectivity. Ubiquitous and affordable broadband would provide an equal playing field and the opportunity for more vibrant and independent lives for individuals with disabilities. A 2006 GAO study revealed that approximately 1 out of 10 households with incomes below $30,000 reported having broadband access, while broadband connections were in 6 out of every 10 households with incomes over $100,000. The cost of broadband is keeping low-income individuals on the outskirts of advanced technology benefits. Including broadband in USF is one powerful means of extending service to low-income families, including those having members with disabilities.

Some argue that market forces alone will take care of the problem. The fact is that the 54 million Americans with disabilities is not one monolith with market power, but rather is divided numerous specific segments, each with their own functional differences and unique accessibility impairments. Due to this specification in product and service

needs, mass-market solutions that are low in cost to producers are not readily available. This deprives the disability community of market pressure power. In addition, people with disabilities tend to earn lower incomes than the general public, therefore reducing their dollar impact on competitive trends (National Council on Disability, 2006).

We return, then, to USF. Universal service is the mechanism that would equalize telecommunications for individuals with disabilities. Universal service today provides funding for traditional phone lines because policymakers understood the necessity of phones in everyone's life, even those who could not afford it. Today, the Internet, and most prominently broadband, is the communication lifeline of choice. Policymakers have an obligation to include broadband in the universal service fund and regard it as a lifeline.

V. Recommendations

Making high-speed broadband universally available will take a major commitment from the public and policymakers. Broadband services are no longer a convenience, but an essential part of Americans' daily lives. Policymakers need to **act now to**:

- Bring universal service in line with the realities and needs of our digital society,
- Continue support for relay services that are critical to people with communication-related disabilities, notably including broadband-enabled VRS,
- Ensure that all telecommunication devices are accessible to and usable by people with disabilities, including not only the traditional products that are covered by section 255 but the advanced devices and services that now escape those rules.
- Subsidize accessible and useable telecommunication devices for people with disabilities, notably including SCPE.

Bring universal service in line with the realities and needs of our digital society

The current USF has three programs that are designed to help make telephone service affordable for people with low incomes. The "Link Up", "Lifeline" and a third program called "Toll Limitation Service" (which allows subscribers to have their toll calls blocked or otherwise controlled at no cost) are the mechanisms that contribute to cost-effective telephone services (National Council on Disability, 2006). These three programs only subsidize traditional "plain old telephone" service. As Americans increasingly use advanced communication technologies enabled by the Internet for their vital communication needs, it makes sense to expand these USF programs to broadband technologies, so that low-income consumers, including Americans with disabilities, can purchase DSL or cable modem service. According to one recent study, the percentage of rural residents with disabilities who have access to the Internet is only half that of the general population (Research and Training Center on Disability, 2006). Broadband ownership is low in rural communities, and lower still among people with disabilities who live there. A way to ensure affordable Internet access for all Americans would be for the FCC and Congress to include broadband in the universal service fund. For example, individuals could choose whether to use Lifeline or Link-Up subsidies for broadband or analog based services. This option would be particularly helpful to people with hearing impairments "who now rely exclusively on high speed Internet technologies for IP text, video relay services and peer-to-peer video to meet their communication needs" (National Council on Disability, 2006).

Continue support for relay services that are critical to people with disabilities, notably including broadband-enabled VRS

Title IV of the Americans with Disabilities Act of 1990 requires all providers of telecommunications services help to support telecommunication relay services (TRS) through the universal service fund. These relays allow people who are deaf or hard of hearing to connect, via communication assistants, to persons who are not deaf or hard of hearing (Bowe, 2005). Title IV has been very successful in providing communication links to people with disabilities. Yet broadband-enabled relay services, whether VRS or text, do not contribute to USF. The funding mechanism for relay services must be reformed along with the USF funding reforms to ensure economic stability for this critical service. In addition, the FCC has said that VRS is an optional and not required form of relay services. Many consumers disagree – VRS, they say, is their most "functionally equivalent" telecommunications service.

- **Ensure that all telecommunication devices are accessible to and usable by people with disabilities, including not only the traditional products that are covered by section 255 but the advanced devices and services that now escape those rules.**

The Schools and Libraries program authorized by the Act has greatly improved communications in K-12 schools and public libraries. Oddly, applicants are not required by the FCC to comply with Section 255 of the same Act, to, that is, purchase with the federal subsidies products and services that are accessible to and usable by students and adults with disabilities. Additionally, section 255 applies only to traditional telephony (Bowe, 2005). The FCC and Congress should extend the telecommunications accessibility requirements in Section 255 to include Internet-based services and equipment. The disability safeguards under the new legal protections should include

"useable accessible and compatible user interfaces on end user equipment; a common standard for reliable and interoperable text and video IP and wireless communications; redundant ways of controlling devices and services; and access to user guides and technical support associated with these offerings" (National Council on Disability, 2006).

Subsidize accessible and useable telecommunication devices for people with disabilities, notably including SCPE

Specialized consumer premises equipment is subsidized only in a few states, despite the fact that it is essential for many consumers to communicate. It is time to broaden the scope of SCPE subsidies and to adopt a national approach. A model is offered by the 2000 Missouri SCPE law. This would provide affordable specialized equipment like screen readers, video equipment for people with hearing impairments who use sign language, and speech-to-text software (National Council on Disability, 2006). Another option would be to authorize equipment distribution as part of universal service itself. This would require legislation that would allocate universal service funds to be used for purchasing, distributing and maintaining assistive technology products, as well as training for consumers in their use (Bowe, 2005).

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APPENDIX

Additional statistical information on Broadband, Universal Service and the disability community

CHART A: **Broadband Applications and Download Speeds**

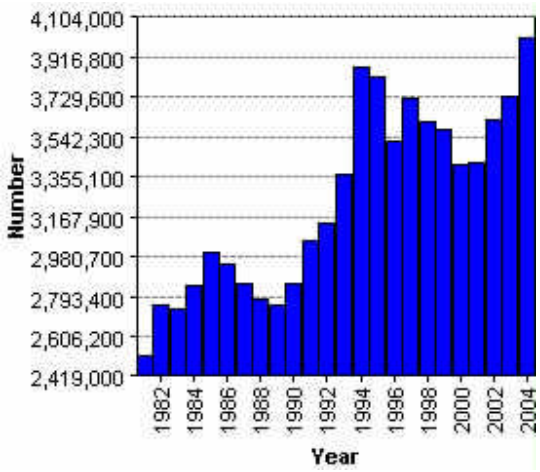
Download Speed	**Application**	**Technology**
56 kbps	Low Quality, Streamlining Audio	Dial Up
200 kbps	FCC Definition of High Speed	DSL Lite: (256 kbps)
1 mbps	Streaming Video	Satellite
		DSL
		Cable
4 mbps	Standard TV	DSL
6 mbps	Videoconferencing	
20 mbps	High Definition TV	ADSL
SOURCE: S. Derek Turner, Broadband Reality Check, Free Press, August 2005.		

***CHART B:* Estimated 2006 Universal Service Fund Distributions**

	Est. 2006 Funding	Percentage of Total USF
Low-Income	$856 Million	12%
High-Cost	$4.1 Billion	58%
Schools & Libraries	$2 Billion	28%
Rural Health	$57 Million	1%
TOTAL	**$7.1 Billion**	**100%**

Based on Federal Universal Service Support Mechanisms Fund Size, Projections for the 2d Quarter, 2006, filed by the Universal Service Administrative Company with the FCC, Jan. 31, 2006. (Numbers may not add due to rounding)

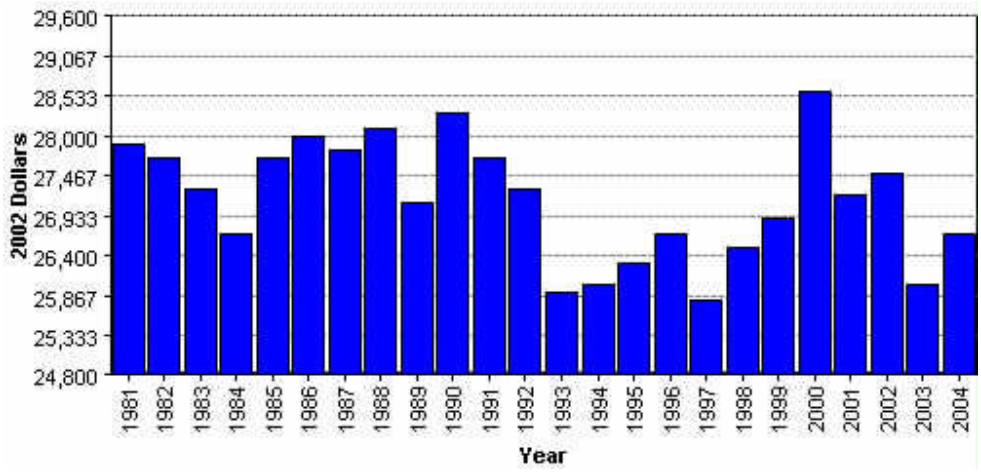
***CHART C:* POVERTY NUMBER**
The number of men and women, aged 18-64 with a work limitation in the United States who lived in families with incomes below the poverty line from 1981 – 2004



SOURCE: Houtenville, Andrew J. 2006. "Disability Statistics in the United States." Ithaca, NY: Cornell University Rehabilitation Research and Training Center on Disability Demographics and Statistics (StatsRRTC), www.disabilitystatistics.org. Posted April 4, 2005. Accessed March 3, 2006.

CHART D: INCOME

The median household income among men and women with a work limitation in the United States from 1981 - 2004, adjusted for inflation to 2002 dollars



SOURCE: Houtenville, Andrew J. 2006. "Disability Statistics in the United States." Ithaca, NY: Cornell University Rehabilitation Research and Training Center on Disability Demographics and Statistics (StatsRRTC), www.disabilitystatistics.org. Posted April 4, 2005. Accessed March 3, 2006.

CHART E: 2006 Health and Human Services Poverty Guidelines

Persons in Family or Household	48 Contiguous States and D.C.	Alaska	Hawaii
1	$ 9,800	$12,250	$11,270
2	13,200	16,500	15,180
3	16,600	20,750	19,090
4	20,000	25,000	23,000
5	23,400	29,250	26,910
6	26,800	33,500	30,820
7	30,200	37,750	34,730
8	33,600	42,000	38,640
For each additional person, add	3,400	4,250	3,910

SOURCE: *Federal Register*, Vol. 71, No. 15, January 24, 2006, pp. 3848-3849

***CHART F:* Computer ownership and Internet use, by disability status, gender, employment status, educational attainment, and family income, ages 15 and over:**

With Work Disability						Without Work Disability				
	Total Population # (1000s)	Computer in Household # (1000s)	%	Uses Internet #(1000s)	%	Total Population # (1000s)	Computer in Household # (1000s)	%	Uses Internet #(1000s)	%
Gender										
Male	9,587	2,383	24.9+	1,056	11.0+	92,105	49,040	53.2	36,942	40.1
Female	11,289	2,600	23.0+	1,020	9.0+	97,849	49,227	50.3	35,358	36.1
Employment Status (ages 18-64 only)										
Employed	3,351	1,427	42.6+	885	26.4+	124,001	70,547	56.9	54.621	44.0
Not Employed	9,024	2,608	28.9+	970	10.8+	29,445	13,786	46.8	8,914	30.3
Educational Attainment										
Not H.S. grad	7,461	949	12.7+	179 *	2.4*+	37,520	12,949	34.5	8,457	22.5
H.S. grad	11,418	3,105	27.2+	1,294	11.3+	108,779	53,267	49.0	35,957	33.1
College grad	1,998	929	46.5+	604	30.2+	43,655	32,051	73.4	27,885	63.9
Family Income										
<$20,000	8,614	950	11.0+	424	4.9+	28,557	6,326	22.2	5,419	19.0
$20,000+	8,512	3,403	40.0+	1,417	16.6+	132,451	81,042	61.2	59,916	45.2

SOURCE: *Current Population Survey*, *1998 Computer and Internet Use Supplement* and *1999 Annual Demographic Supplement*.
+Difference in rates between households with & without work disability is statistically significant at 95% confidence level or better.
* Estimate has low statistical reliability (standard error exceeds 30 % of estimate).

Table adapted from *Disability Statistics Report 13: Computer and Internet Use among People with Disabilities*, 3/2000.

Chart G: **Savings for Non-Elderly Individuals with Disabilities (billions of $2005)**

Year	2010	2020	2030
Base	$5.23	$39.05	$97.71
Policy	$8.72	$65.08	$136.98
Difference	$3.49	$26.03	$39.27

SOURCE: Litan, Robert, 2005. "Great Expectations: Potential Economic Benefits to the Nation from Accelerated Broadband Deployment to Older Americas and Americans with Disabilities."

Chart H: **Output Gains from Non-Elderly Individuals with Disabilities (billions of $2005)**

Employment increase by	2020	2010	2006
Output gain (2005 – 2030) per 1% increase	$5.33	$11.37	$14.17

SOURCE: Litan, Robert, 2005. "Great Expectations: Potential Economic Benefits to the Nation from Accelerated Broadband Deployment to Older Americas and Americans with Disabilities."

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