

Prepared Statement of Steven I. Jacobs
President, IDEAL Group, Inc.

before the Committee on the Judiciary, Subcommittee on the Constitution,
Civil Rights, and Civil Liberties on Achieving the Promise of the Americans
with Disabilities Act in the Digital Age

Current Issues, Challenges, and Opportunities

Thursday, April 22, 2010

Mr. Chairman, Representative Nadler, and Representative Sensenbrenner, Ranking Member, and other Members of the Committee, thank you for this opportunity to present testimony on the current issues, challenges and opportunities in this digital age in regard to the Americans with Disabilities Act.

My name is Steve Jacobs. I have been in the computer industry for 35 years. As President of IDEAL Group¹, a 2002 spin-off from IDEAL at NCR Corporation² I have been intimately involved in the technological issues, challenges, and opportunities being discussed today.

As part of my testimony, I am going to show, by example, that there are alternatives to certain beliefs and concerns held by my industry colleagues at other IT companies.

Over the past 10 years our industry has experienced exponential growth which, on the surface, can appear to be exacerbating technology accessibility issues.

The number of internet users has risen from approximately 361 million³ ten years ago to 1.8 billion⁴ users at the end of 2009. This represents a 26.6% cumulative average growth rate. If this growth rate continues half the world's population will be using the internet by the end of 2012⁵.

Web-based social networking communities are now frequented by over half-a-billion people every year⁶.

4.1 billion SMS messages are being sent on a daily basis⁷.

LinkedIn, an Internet-based business networking community has over 65 million members in 200 countries⁸. LinkedIn is accessible to a greater than lesser extent. Because of this, organizations of individuals with disabilities are able to participate and interact with each other.

The number of organizations using web-delivered applications is increasing rapidly. There are 25 million users of Google applications⁹.

There are 6,500 online college courses offered¹⁰.

Shopping and making travel arrangements online is less expensive than brick-and-mortar alternatives. The trend in online learning is pointed upward.

Technology is woven into every aspect of life as we know it today. The ADA is about the civil rights of people with disabilities. When technology is inaccessible to people with disabilities seeking to access the same resources as their non-disabled counterparts... it violates their civil rights.

I manage four companies that market E&IT products and services. All of our products and services are accessible to people with disabilities. Designing accessible E&IT is easier, more technically possible, more economically feasible and more profitable to develop than ever before in history.

For example, up until recently, individuals who are blind had to pay \$300-\$400¹¹ extra for screenreading software in order to use a cell phone. Then along came Google Android¹² a free, open source, operating system for wireless smartphones. A smartphone is a mobile phone offering advanced capabilities, often with PC-like functionality. Thanks to innovative works of TV Raman and Charles Chen, two brilliant Google scientists and engineers, all Android smartphones come with a free screenreader and other accessibility applications. The iPhone¹³ and iPad¹⁴ also include free accessibility features. Google and Apple are not in business to lose money. They would not be integrating accessibility features into their smartphones for free if it were technically difficult, expensive or, if they lost money doing so.

Google provides the interfaces, development tools, platforms, marketing tools and distribution resources companies need to develop accessible applications¹⁵. Many accessibility applications have come on to the market^{15a}. Our company formed Apps4Android¹⁶, a Google smartphone application development company, in early 2009. In 14 short months our user base has grown to 600,000 users in 25 countries.

If our small company can be successful designing and selling accessible mainstream applications for this market, so can other companies. Wireless service providers, such as T-Mobile¹⁷, have been open to learning more about potential opportunities in this space.

It used to be impractical to retrofit a web-based application to be accessible. That's no longer the case. Google AxsJAX¹⁸ enables developers to create dynamically changing scripts that make their web applications more accessible. One of our subsidiary companies, IDEAL Conference¹⁹, in partnership with Talking Communities has been providing fully-accessible distance-learning, online conferencing and webinar services and accessibility training to hundreds of thousands of over the past eight years. Among those users are individuals with hearing impairments, people who are deaf, consumers with vision-loss, people with speech disabilities, persons with mobility disabilities and more.

It was reasonable, technically possible, economically feasible and profitable for us to do so. We are in business to make money. Just imagine the

possibilities if large companies that currently market similar but inaccessible products and services would do the same.

Every minute, 20 hours of video are uploaded to YouTube. How can we expect every video owner to spend the time and effort necessary to add captions to their videos? Even with all of the captioning support already available a majority of user-generated video content online is still inaccessible to people who are deaf.

Ken Harrenstien a Google Software Engineer recently combined Google's automatic speech recognition (ASR) technology with the YouTube caption system to offer automatic captions, or auto-caps for short.

Auto-caps use the same voice recognition algorithms in Google Voice to automatically generate captions for video. While the captions may not always be perfect they can still be incredibly helpful, and the technology will continue to improve with time. If implementing these technologies were not technically possible, economically feasible and profitable, Google would not be evolving them.

Partners for the initial launch of auto-caps are UC Berkeley, MIT, Yale, UCLA, Duke, UCTV, Columbia, PBS, National Geographic, Demand Media, UNSW, and most Google and YouTube channels²⁰.

In addition to automatic captions Google is also launching automatic caption timing, or auto-timing, to make it significantly easier to create captions manually. With auto-timing, you no longer need to have special expertise to create your own captions for YouTube videos. All you'll need to do is create a simple text file with all the words in the video and use Google's ASR technology to figure out when the words are spoken and create captions for your video. This should significantly lower the barriers for video owners who want to add captions, but who don't have the time or resources to create professional caption tracks²⁰. Talk about technically possible and economically feasible!

Our National Broadband Plan²¹ is shaping the future of issues that matter to all of us. Broadband networks and applications are critical to the competitive advantage and future success of our country. Broadband will serve as the platform to stimulate the creation of innovative business, education, government, entertainment and social online products and services. Health-focused broadband applications will transform health care. All patients will want to exercise their legal and civil rights to obtain personal health records, interact with physician offices, obtain lab results, schedule appointments... and much more... all online.

We've known it for a long time: the web is big. The first Google index in 1998 already had 26 million pages, and by 2000 the Google index reached the one billion mark. Google has now indexed far in excess of one trillion unique URLs²². Internet users conduct over two billion Google searches every day²³.

Georgia Tech's sonification lab²⁴ is using free, open source, software developed by NASA Learning Technologies²⁵ to create fully-accessible, free, web-based resources designed to enable the participation and enhance the performance of America's students with print disabilities in science, technology, engineering, and mathematics (STEM)²⁶. This include efforts not only from the Federal Government but also from leading companies, foundations, non-profits, and science and engineering societies. These organizations would not be making the commitments of technology and resources if achieving these technology objectives were technically impossible, economically unfeasible or would cost a lot of money... especially in today's economy.

Thanks to Dr. Margo Izzo a researcher at The Nisonger Center at The Ohio State University²⁷ and talented software developers from around the world, students with disabilities are now being provided with free, portable, high-quality, assistive technology software smartdrives to benefit students with disabilities in the following ways:

- Enables students attending any school/university to use their AT software on practically any PC they desire/need to use;
- Significantly reduces the cost of providing AT software to students who desire/need to use it;
- Reduces incompatibility/interoperability issues with applications currently installed on the PC being used;
- Eliminates vandalism and innocent corruptions of PC-based AT software since portable AT applications are not installed on the PC being used. Students simply carry their AT software, personal files, and configuration files with them;
- Eliminates licensing limitations that preclude students from using AT software on any PC they desire/need to use;
- Eliminates the problem of too few AT software-equipped computers in schools, colleges, libraries, community centers, places of employment etc.;
- Improves transition outcomes for AT software users from school to school, high school to college, high school to employment and in adult life in general;
- Eliminates financial losses due to AT software abandonment;
- Eliminates acquisition time and red tape;
- Eliminates installation problems; and,
- Eliminates the stigma of having to use "special" PCs.

IDEAL Group is looking forward to exploring the possibilities of distributing our assistive technology software smartdrives through State Assistive Technology Act (ATAP) Programs, funded under the AT Act of 1998, as amended.

In closing, I encourage all of you not to permit the sometimes exaggerated perceptions of technology accessibility issues and challenges cloud the fact that there are now more opportunities than ever before in history to design accessible and profitable E&IT products and services.

All of you on this subcommittee are in the enviable position to help every person, regardless of ability, be able to exercise their civil rights by having equal access to E&IT.

There is additional information in PowerPoint format, as part of this testimony, at the end of this written statement.

Thank you!

About IDEAL Group, Inc.

Steve Jacobs, President
IDEAL Group, Inc.
2809 Bohlen Drive
Hilliard, Ohio 43026
Phone: (614) 777-0660
TTY/TDD: (800) 750-0750
steve.jacobs@ideal-group.org

IDEAL Group, Inc. is a 2002 spin-off from IDEAL at NCR Corporation (NYSE: NCR). IDEAL Group has four subsidiary companies:

1. Online Conferencing Systems Group, Inc.
<http://onlineconferencingsystems.com>
Online Conferencing Systems Group provides fully accessible, 508 compliant, online conferencing, distance learning and Webinar services. OCSG has served hundreds-of-thousands of users worldwide over the past eight years.
2. InftyReader Group, Inc.
<http://www.inftyreader.org>
InftyReader Group provides applications that recognize and translates science, technology, engineering, and math (STEM) documents into accessible formats for individuals with print disabilities.
See our Accessible math resource: <http://www.accessiblemath.org/>
See our Speech Recognition-Based Math Accessibility Project:
<http://inftyreader.org/speech-recognition.htm>
3. Apps4Android, Inc.
<http://apps4android.org>
Apps4Android is a Google Android smartphone assistive technology software development company. Apps4Android is dedicated to developing free/low-cost, high-quality, mobile applications that enhance the quality-of-life, independence and employability of individuals with disabilities. After only 14 months in business, Apps4Android applications are being used by more than 600,000 users in 25+ countries.
See our Android Accessibility Project: <http://accessibility-android.info/>.
4. EasyCC, Inc.
<http://easycc.org/>
EasyCC is the newest IDEAL Group subsidiary company. EasyCC provides real-time captioning services to organizations wishing to accommodate the access needs of individuals who are deaf.

References:

1. History of IDEAL Group: <http://www.ideal-group.org/history/>
2. NCR Corporation website: <http://www.ncr.com/>
3. 361 million: <http://www.internetworldstats.com/stats.htm>
4. 1.8 billion: <http://www.internetworldstats.com/stats.htm>
5. $1.8B \times 126.6 \times 126.6 \times 126.6 = 3.65B$
6. Social networking statistics:
Facebook: <http://tinyurl.com/356y6s>
Twitter: <http://tinyurl.com/y9dm7sh>
MySpace: <http://tinyurl.com/y4fk6rm>
7. 4.1 billion: <http://tinyurl.com/y4n86vm>
8. LinkedIn: <http://press.linkedin.com/about>
9. Google apps: <http://tinyurl.com/yyqd3pq>
10. Online courses: <http://www.elearners.com/courses/>
11. Nuance TALKS: <http://tinyurl.com/y74zh97>
Mobile Speak: <http://tinyurl.com/y5979gg>
12. Google Android: <http://www.android.com/>
13. iPhone accessibility: <http://tinyurl.com/6optfu>
14. iPad Accessibility: <http://tinyurl.com/yfw54rv>
15. Android Market: <http://www.android.com/market/>
15a. <http://www.accessibility-android.info/stats.htm>
16. Apps4Android: <http://apps4android.org>
17. T-Mobile: <http://tinyurl.com/yybvqh8>
18. Google AxsJAX: <http://tinyurl.com/yysav2m>
19. IDEAL Conference: <http://onlineconferencingsystems.com>
20. Google Captions: <http://tinyurl.com/ykzj44a>
21. National Broadband Plan: <http://www.broadband.gov/>
22. Google indexed websites: <http://tinyurl.com/5blvqm>
23. Google Searches: <http://tinyurl.com/9oo4te>
24. Georgia Tech's Sonification Lab: <http://sonify.psych.gatech.edu/>
25. NASA Learning Technologies: <http://tinyurl.com/y37l22r>
26. Educate to Innovate: <http://tinyurl.com/yb3sjr3>
27. Nisonger Center: <http://nisonger.osu.edu/>
28. ATAP: <http://www.ataporg.org/atap/index.php>



Prepared Statement of Steven I. Jacobs
President, IDEAL Group, Inc.

before the Committee on the Judiciary, Subcommittee on the Constitution,
Civil Rights, and Civil Liberties on Achieving the Promise of the Americans
with Disabilities Act in the Digital Age
Current Issues, Challenges, and Opportunities

Mainstream Market Forces Driving the Development of Accessibly-Designed Electronic and Information Technology (E&IT)

Definition of E&IT

E&IT includes:

- Telecommunication products
- Information and self-service kiosks
- Application software
- Worldwide web sites
- Web-based applications
- Office equipment

Definition of Accessibly Designed E&IT

E&IT that has been designed to be accessible to as many consumers as *reasonable, technically possible and economically feasible*.

Supply-Push Market Forces

1. Are not self-sustaining without a **push** from government, society or laws.
2. Supply-push market forces that **COMPEL** companies to enhance the accessibility of their products, services and workplaces are driven by:
 - **Culture**
 - **Organizations (internally)**
 - **Morality**
 - **Politics**
 - **Ethics**
 - **Laws**

Demand-Pull Market Forces

1. Are self-sustaining so long as demand exists;
2. Demand-pull market forces that **INSPIRE** companies to enhance the accessibility of their products, services, and workplaces are driven by:
 - **Income**
 - **New Customers**
 - **Sales**
 - **Profits**
 - **Innovation**
 - **Revenue**
 - **Earnings**

1. Government Standards as a Catalyst

- Electronic and Information Technology Accessibility Standards (Section 508)
- Section 255 of the Telecommunications Act
- The U.S. government is budgeted to purchase \$72.7 - \$78.4 billion in E&IT in 2010

Source: http://ideal-group.org/business_benefits_final/2010_budget.xls

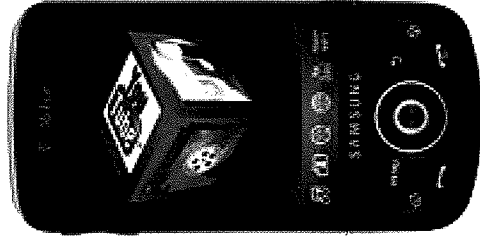
2. Consumer Behavior

- Increased technical literacy
- Increased mobility
- Less patient
- Higher expectations
- Desire personal attention



3. Technology Trends of Smart Devices

- Decreasing size
- Increasing power
- Increasing functionality
- Increasing demand



4. Marketing Trends

- Consumer expectations are growing
- Brands are barely keeping up with consumer expectations now. Every day consumers adopt and devour the latest technologies and innovations, and hunger for more.

5. Low-Bandwidth Infrastructures

(1 of 2)

Websites and web-based applications that adhere to the W3C's Web Content Accessibility Guidelines (WCAG) 2.0 are;

- More accessible and usable from within low-bandwidth infrastructures;
- More easily converted into mobile formats;
- Accessible by smart devices using voice recognition and text-to-speech synthesis

5. Low-Bandwidth Infrastructures

(2 of 2) Broadband Subscribers per 100 inhabitants

- **China: 6.23** • **Canada: 29.59**
- **India: 0.45** • **United States: 23.46**
- **Brazil: 5.26** • **World: 6.08**
- **Indonesia: 0.18**
- **Russia: 6.56**

<http://tinyurl.com/ideal-bandwidth>

6. Aging Populations

(1 of 2)

In 2007, the prevalence of disability in the U.S. was:

- 14.9 percent for persons ages 5+
- 6.3 percent for persons ages 5 to 15
- 6.8 percent for persons ages 16 to 20
- 12.8 percent for persons ages 21 to 64
- 29.7 percent for persons ages 65 to 74
- 52.9 percent for persons ages 75+

6. Aging Populations

(2 of 2) 65 and over (millions)

- **China: 108**
- **India: 61**
- **Brazil: 13**
- **Indonesia: 14**
- **Russia: 19**
- **Canada: 5**
- **United States: 39**
- **World: 516**

7. People with Disabilities

(1 of 4)

Disabilities that impact accessing and using

E&IT:

- **Hearing**
- **Vision**
- **Speech**
- **Mobility**
- **Learning Disabilities**
- **Mental Retardation**

7. People with Disabilities

(2 of 4)

Disabilities that do not, necessarily, impact accessing and using E&IT so they are not included in the stats:

- Lung / Heart disease
- Cancer
- Diabetes
- Asthma
- HIV carriers
- Alcoholism / Drug addiction

7. People with Disabilities (est. millions)

(4 of 4)

- **China: 133.9**
- **India: 115.7**
- **Brazil: 19.9**
- **Indonesia: 24.0**
- **Russia: 14.0**
- **Canada: 3.3**
- **United States: 30.7**
- **World: 679.0**

8. Users of ESL

- Users of English as a Second language number more than a billion worldwide
- Are not as proficient in reading English content as are native English users
- Find plain language (accessibly-written) content more understandable.

9. Need for Language Translation

- Over 150 languages are spoken in the top 10 developing countries alone.
- There is an ever-increasing need to translate content
- Plain language content is less expensive to translate into other languages

Plain Language

9. Need for Language Translation

Humorous Translation Errors:

- Braniff translated, "Fly in leather," into Spanish. It came out as "Fly naked."
- Coors translated its slogan, "Turn it loose," into Spanish. It read "Suffer from diarrhea."
- Chevy Nova: "No va" means "it doesn't go" in Spanish.

9. Language Translation

- Languages used by a minimum of 500K people by country:
 - China: 37
 - India: 65
 - Indonesia: 30
- 132 languages are spoken, by at least 500,000 people, in just the top 3 big emerging markets;

9. Language Translation

Plain Language:

- Significantly reduces the cost of language translation
- Reduces ambiguity
- Speeds reading
- Improves understanding for people using English as a second language
- Reduces liability of misunderstandings

10. People who Never Learned to Read

- China: 121.8
- India: 451.2
- Brazil: 22.7
- Indonesia: 23.1
- Russia: 0.8
- Canada: .3
- U.S.: 3.1
- World: 1,222.2

10. People who Never Learned to Read

Text-to-speech technologies that accommodate the access needs of users who are blind also work for people who never learned to read. The quality of synthetic has improved dramatically over the years.

11. Different Learning Styles

- Visual
- Kinesthetic
- Auditory
- Various combinations of the above

12. Different Levels of Experience

Not all people have the same experience using PCs....

- First-time user
- Novice
- Average
- Experienced
- Expert

13. Legislation

- Americans with Disabilities Act
- Section 255 of the Telecommunications Act
- Section 508 of the Rehabilitation Act

13. Legislation

The American with Disabilities Act:

- Gives people with disabilities civil rights protection
- Guarantees equal opportunity for people with disabilities
- ADA Accessibility Guidelines

13. Legislation

Section 255:

- Established by FCC
- Covers all telecom products and services plus IVRs
- Legal standard is “readily achievable”
- Telecommunications Act Accessibility Guidelines

13. Legislation

Section 508:

- Uses federal purchasing power
- Burden is on federal department or agency. Uses “undue burden” standard.
- 508 is used by some states.
- E&IT Accessibility Standards

14. Standards

- International Organization for Standardization (ISO)
- International Electrotechnical Commission (IEC)
- International Telecommunication Union (ITU)

Contact Information

Steve Jacobs, President

IDEAL Group, Inc.

2809 Bohlen Drive

Hilliard, Ohio 43026-9012

Phone: (614) 777-0660

TTY: 711

E-mail: steve.jacobs@ideal-group.org