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Committee on Energy and Commerce

Subcommittee on Telecommunications and the Internet

Testimony of Larry Goldberg

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<u>The ''Twenty-first Century Communications and Video Accessibility Act of 2007''</u>

Thank you Chairman Markey, and members of the Subcommittee, for the opportunity to testify before you today.

My name is Larry Goldberg and I am the Director of Media Access at WGBH, Boston's public broadcaster. WGBH is not only the home of such prominent PBS television series as "NOVA", "Antiques Roadshow," "Frontline," and "American Experience," and many educational children's programs such as "Arthur," "Between the Lions," and "Curious George." WGBH is also where captioning of television for deaf and hard-of-hearing people began. More than 35 years ago, our production of Julia Child's "The French Chef" was the first open-captioned TV program, followed by a decade of the ground-breaking "Captioned ABC Evening News" and other entertainment, news and children's programs we captioned for PBS.

In 1980, WGBH along with PBS engineers launched *closed* captioning, enabling all TV viewers to select captioning of a limited number of TV programs at the

touch of a button. WGBH's development of innovative technologies and creative production solutions preceded the launch of both open and closed captioning and led the way to the pervasive captioning we have available today.

In 1990, a similar effort enabled the launch of WGBH's "Descriptive Video Service," or DVS, the first widely available media access service tailored for the needs of people who are blind or visually impaired. Exploiting the newly launched stereo television audio system (known as MTS or Multichannel Television Sound), our DVS provides viewers with carefully crafted descriptions of key visual elements, timed for insertion during the pauses in dialog. Initially only available on a handful of PBS programs, DVS is now provided on dozens of public TV programs for children and adults alike, and WGBH describes programs on commercial broadcast and cable networks as well. From Turner Classic Movies to CBS' "CSI" and Fox's "The Simpsons," blind and visually impaired viewers have told us over and over again how much they appreciate having access to the electronic media their sighted friends and family take for granted.

In the late 1990s and into the early 21st century, WGBH worked with its constituents in the blind community to provide the FCC with the technical, financial and operational information it needed to institute a modest requirement for the carriage and delivery of video description. Based on its reading of the Telecommunications Act of 1996, the FCC's mandate went into effect in April 2002. Until November of that year, commercial broadcast and cable networks

provided four or more hours of described programming per week _**and**_ ensured the proper delivery of that extra audio signal to their viewers, as required by the FCC rules.

However, a challenge brought before the U.S. Court of Appeals for the D.C. Circuit overturned the FCC's video description requirement, arguing that Congress hadn't clearly stated its intention to require description the way they had regarding closed captioning. Your bill, Mr. Chairman, would clarify Congress' intent to make television accessible to all Americans, including those who are blind or visually impaired. The bill would also assure that programs that have been produced with description reach their intended audiences, clearing the many barriers inadvertently created in the new digital broadcast, cable and satellite pathways to the home. We strongly support all aspects of the reinstatement of the FCC's video description mandate.

In 1993, with initial funding from the Corporation for Public Broadcasting, WGBH launched the research and development arm of its media access activities, now known as the Carl and Ruth Shapiro Family National Center for Accessible Media at WGBH (or "NCAM" for short). NCAM's mission has been to reach out to people with sensory disabilities all over the world to understand and ascertain their media and communications needs and then to take action to help meet those needs. From membership in numerous standards committees in all technological fields to advising Federal agencies and corporate partners, to

developing tools and processes, NCAM endeavors to investigate, create and disseminate practical and usable techniques to lowering barriers for social inclusion. Often with generous grants from Federal agencies such as the National Science Foundation and the Departments of Education and Commerce, NCAM has acquired deep expertise and developed accessibility solutions for theatrical motion pictures, DVDs, in-flight entertainment systems, digital set-top boxes, mobile devices such as PDAs and cell phones, and online, web-based media, among other platforms. An ongoing project with NPR focusing on accessible radio technologies[1] has excited the interest of members of both the deaf and blind communities.

Today, due to the wider availability of high-speed, broadband Internet service and the recognition by content providers that consumers of media want more viewing options and personal control of their media choices, more and more people are watching their favorite TV shows on their computers (and mobile devices). And just like in the early days of TV captioning, technologies and standards have had to be developed, and innovative production processes created, to enable the availability of captioning of web-based media. Much of the software and platform development work has been done, is being deployed and is described below. What remain to be addressed are common production and distribution processes that will bring to deaf and hard-of-hearing citizens what they've come to expect from the media they consume.

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[1] http://www.nprlabs.org/research/nidrr.php

These developments started as long ago as 1991 when Apple released its first version of QuickTime with its support of user-selectable "text tracks" for computer-based video. Subsequent similar developments by Microsoft (the Synchronized Accessible Media Interchange for Windows Media Player[2]) and RealNetworks (which bases its RealText format on the World Wide Web Consortium's (W3C) Synchronized Multimedia Integration Language[3]) and Adobe[4] have also made the provision of textual representations of a web-based video's audio track a technically achievable task. Many web-based video providers have expressed the desire for a single, universal text file format, and one initial effort toward this goal has been the W3C's "Distribution Format Exchange Profile (DFXP)[5] which was developed by the W3C's "Timed Text Working Group," established in 2003. Now under consideration to become an industry-wide specification, DFXP would allow for consistency across various authoring systems and platforms and would provide a common data format for content providers to use in providing captions, much the way line 21 (CEA-608) has been established as the format for analog TV transmissions and DTVCC (CEA-708) are now used for digital TV.

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[2] http://msdn2.microsoft.com/en-us/library/ms971327.aspx
[3] http://service.real.com/help/library/guides/production8/htmfiles/smil.htm.
[4] http://www.adobe.com/accessibility/
[5] http://www.w3.org/TR/2006/CR-ttaf1-dfxp-20061116/.

Implementations of these various online captioning technologies can now be seen on web sites for TV programs created by WGBH for PBS, such as *Nova*[6], *Peep and the Big, Wide World*[7], and others. In addition, the video hosting web site Hulu.com, recently launched by Fox and NBC, includes captioning on a number of the series it provides for free. And late last year, Apple announced support for closed captions in its iTunes software and store, QuickTime software and iPod and iPhone devices. Apple's new technical solution (known as ".scc") derives its caption data directly from broadcast TV caption files.

There are now a number of tools that content providers and distributors can use to convert their traditional television captions into captions for web-based video, or to create and display original captions for online media. Examples include "CaptionKeeper[8]," "MAGpie," and "CC for Flash[9]," from NCAM, Captionate[10] from the Manitu Group, a variety of products from CPC[11], and the professional-grade, most commonly used software in the U.S. captioning industry, Softel Swift[12].

Even with these tools and file formats available, many hurdles remain to make captioning of web-based media as pervasive as it is on television. In an effort to

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[6] http://www.pbs.org/nova
[7] http://peepandthebigwideworld.com

[8] http://www.captionkeeper.org
[9] http://ncam.wgbh.org
[10] http://www.buraks.com/captionate/
[11] http://www.cpcweb.com/
[12] http://www.softel-usa.com

overcome these final technology and production barriers, the leading providers of

Web-based video have come together to create the Internet Captioning Forum

(ICF),[13] facilitated by WGBH, to develop solutions that will increase the amount of

online video accessible to people who are deaf or hard of hearing. AOL, Google,

Microsoft and Yahoo! are the pioneer members of the ICF who will initially

address the technical challenges presented by online video repurposed from

broadcast or other previously captioned sources, as well as video created

specifically for the Web. The collaboration is expected to yield a range of

solutions and tools, among them:

- A database for online media distributors, populated by major captioning

  providers, of previously captioned programs. This tool will facilitate the

  location and reuse of existing caption files.

- Technical and standards documents, case studies and best practices for

  accomplishing pervasive online video captioning.

- Demonstrations of innovative practices to preserve captions while editing and

  digitizing captioned videos.

A recent meeting convened by the ICF in Burbank, California, included

representatives from the digital media divisions of all of the major broadcast

networks, leading cable networks, and other important players in the online

media world. This gathering yielded the following consensus agreements and

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[13] http://www.internetCCforum.org

action items identified as needing attention to advance the cause of online captioning:

- All of the attendees, whether from hosting sites or content providers, were enthusiastic about solving the remaining problems and moving forward to accomplish pervasive availability of captions on web-based video.

- There was discussion about the benefits of a singular agreed-upon format for captioning on the web, with DFXP being a likely candidate. Interchange from other formats will be very useful and changes to the DFXP standard are needed, implementations need to be encouraged, and an organization needs to take on these tasks to accelerate progress.

- Apple's captioning solution (.scc files utilizing 608 data) for bringing closed captions to their universe (iTunes, QuickTime, iPods, iPhones) may serve for other entities as well.

- Software translators are needed to facilitate the conversion of caption text from a variety of formats to common ones for the web. These transformations should include broadcast caption/subtitle formats (608, 708, World System Teletext) that can be turned into DFXP, .scc, etc.

- Editing tools and systems are needed to repurpose existing caption files for use on web-based media. The major issues are adjusting for commercial blacks and rippling of time code when alterations are made to programs as they move to the web.

- Research into best practices for web-based closed captioning is needed, including use of caption placement, font sizes, styles, user controls, and other options.

These challenges identified by the ICF and the engaged content providers point the way for solutions to making captioning more widely available for web-based media.

Thank you for your time and I welcome your questions.

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