

Creating Accessible Video for the Internet

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In This Session

- Why Accessible Video?
- Features of Accessible Online Video
- Tools for Accessible Video
- Tips to Plan & Develop Accessible Video
- Examples/Best Practices
- Resources
- Q&A



Video Demand Explosion



- **82%** – Internet users that view videos online.
- **182** – Online videos avg. user watches in 1 month.
- **10x longer** - Websites with video hold attention.
- **2 billion** – Videos served by YouTube in 1 day.
- **81.9%** – Embedded YouTube videos on blogs.
- **90%** - Est. Internet content video-based by 2012

Why Accessible Video?



- **Universal Design to Maximize Use**
 - Individuals who are Deaf/HOH
 - Language & literacy: communication, learning
 - Environment flexibility: noisy, quiet, shared
 - Multi-modes: cognitive disabilities, learning styles
 - Technology compatibility & access
- **Searchable Content**
- **Right Thing to Do ... Good Business**
- **Compliance: Policy, Standards, Laws (State, Federal, International)**



Accessible Video: Sample Compliance - 508, WCAG

- Section 508(a)~WCAG 1 (1.1)~WCAG 2 (1.1,1.2,4.2)
 - **Text alternatives** for all non-text content
- Section 508(b)~WCAG 1 (1.4)~WCAG 2 (1.2)
 - **Synch alternatives** for multimedia
- Section 508(m)~WCAG 1 (6.3,6.4,8.1)~WCAG 2 (2.1,4.1,4.2)
 - **Link to applet or required plug-in**
 - **Directly accessible or compatible with AT**
(i.e. keyboard, screen reader, magnifier, etc.)

Accessible Video: Color

- Information cannot be conveyed by color alone
- Sufficient contrast between background and content
 - Brightness Difference (should be ≥ 125)
 - Color Difference (should be ≥ 500)
 - WCAG 2.0 Level AA / 1.4.3 Contrast (Minimum): The visual presentation of text and images of text has a contrast ratio of at least 5:1 (with some exceptions).
- Tools:
 - Online Color Evaluation Tool
 - Colour Contrast Analyser Firefox Extension
 - Contrast Analyser

Accessible Video: Quick Evaluation

- Ask yourself – if I can't see or hear the media?
- **Captions** provided and synched?
- **Transcript** provided?
- Link to download plug-in?
- Controls **keyboard accessible**?
- Can screenreader access the controls?
- Sufficient **contrast** between background and content?
- **Webpage validate**?
- **Other:**
 - Sign Language Interpretation; Reading Level; Visual Presentation; Abbreviations

Accessible Video: Key Features

- Video or audio file
- Transcript
- Captions
- Media Player
- Audio Description



Step 2:

Transcript

- Key starting point of accessible video
 - Plain text file (.txt) needed for audio or video file
 - Make link to access before or after media
 - Publish as a text file and/or webpage
- Sources of Transcript
 - Capture from production
 - Typed by hand
 - Voice recognition / speech-to-text software



Captions

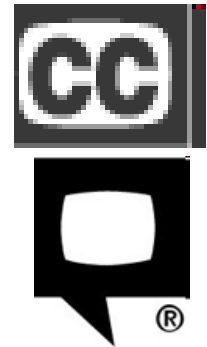
- Text of the spoken word
 - **Synchronized**
 - **Accessible**
 - **Equivalent**
- Includes non-speech audible information
 - Sound effects, music, laughter, speaker id
- Different than “subtitles” (translation)



Types of Captions



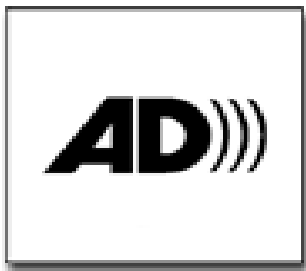
- Open captioning (OC)
 - Always visible - “Burned-in”



- Closed captioning (CC)
 - Turn on/off
 - Controls for captions in device; some customizable
- Real-Time captioning
 - Live “synched” delivery of dialogue & audio to text
 - Runs parallel or via separate application

Audio Description

AKA Descriptive Video



Audio description of key visual elements

- Helps individuals who are blind, low vision, or anyone unable to see video.
- i.e., Actions, costumes, gestures, scene changes



- Separate audio track synched with video & within natural pauses
- How To:
 - Incorporate in pre-production when scripting video.
 - Review standard techniques in audio description.

Examples: Audio Description

- [Audio Description Example \(MP3\) from WebAIM](http://webaim.org/techniques/captions/media/audiodesc.mp3)
<http://webaim.org/techniques/captions/media/audiodesc.mp3>
- [Lion King \(audio description demo\)](http://ncamftp.wgbh.org/lionking/lionking_hi.mov)
http://ncamftp.wgbh.org/lionking/lionking_hi.mov
- [Assistive Technology Boogie](http://inclusive.com/AT_boogie/at30.swf)
http://inclusive.com/AT_boogie/at30.swf

Common Media Players



- Windows Media Player



- QuickTime Player



- Real Player



- Flash
 - JW Player
 - ccPlayer



- Mobile & Apple devices, iTunes



- YouTube Player



- VideoLAN VLC Media Player

Accessible Video Players (Free)

- Accessible YouTube Player Controls
 - Some developer knowledge required
 - Code and instructions by OSU Web Accessibility Center
- JW Player
 - Flash only; supports captions & audio descriptions
- VideoLAN-VLC Media Player
 - Supports captions & audio descriptions
- ccPlayer
 - Flash only; developer knowledge helpful but not necessary

Planning for Accessible Video

1. What You Need

- Video or audio file
- Transcript of audio portion of video
- Captioning tool or service



2. Develop Plan for Creating Captions

- Delivery of media
- Outline workflow
- Keep in mind: time, \$\$, resources
- Research issues, standards, tools & services

Planning for Accessible Video: Delivery of Media

- **When plan video:** Determine audience, Internet connectivity method, format
- **Issues:** Download time, storage capacity, media players use different formats
- **Types:**
 - **Streaming media (aka VOD)**
 - Live or archived content delivered almost real-time to viewer
 - Experience as download; generally not stored on viewer's system
 - Preferable: large files, can jump forward/back in content
 - **Progressive downloads**
 - Files downloaded to viewer's computer
 - Not have to be completely downloaded before viewing begins
 - Final result is copy of video exists on viewer's computer
 - Not desirable: copyright, larger videos, smaller bandwidth versions

Planning for Accessible Video: Workflow and Time

- Workflow (and Impact of Issues)
 - Staff support: Collaboration of content producers and distributors
 - Production ease and flexibility to:
 - Rapidly changing formats, playback & distribution devices
 - Popularity & availability of video sources
- Time
 - Detailed work, review for accuracy & grammar
 - Must understand non-spoken info & how to convey in captions
 - Transcription most time consuming
 - Total Time: 5-10x length of the video
 - 5 min video** – 25 min to 1 hour
 - 1 hour video** – 15-20 hours
 - 15 min video** – 1.25-2.5 hours
 - 50 videos @ 10 min** – 40-80 hrs

Captioning Tools & Services

- Types: DIY, Web/software, Third party
- DIY Considerations
 - Time (5-10 hrs. of work per video hr.)
 - Training, learning curve, & support
 - How much video and room for growth
 - Staff or students and turnover
 - Cost
 - Space, equipment, training, hiring, tech support, mgmt

DIY Captioning Tools

- Free
 - MAGpie
 - World Caption
- Purchase
 - Hi-Caption
 - Softel Swift
 - MovCaptioner
 - Adobe Captivate
 - CaptionKeeper
- Flash
 - Subtitle Workshop

Audio Description Tools

DIY Tools:

- MAGpie
- QuickTime Pro
- Adobe Premiere / Audition
- Apple iMovie / GarageBand

Hire Third Party/Service Providers

- Media Access Group (MAG) at WGBH

Captioning Considerations Web/software & Third-Party

- Research & consider: \$, service, & support
- What media formats - requires actual media in hand?
- Scope & growth to need & technology?
- Budget – balance \$ and time
- What type of caption data files
- Accuracy not perfect - still requires review
- Cut down on people time / save \$\$ – or not?

- Integrated systems capture & captioning
 - Echo360
 - Panoptos CourseCast
 - Adobe Acrobat Connect

Third Party Captioning Providers

- Search for Providers by Location, Service
 - Closed Captioning Web – www.captions.org/services.cfm
- AST – Automatic Sync Technologies
- WGBH Media Access Group
- Caption Colorado
- WebWideVideo.com
- Winged Words Transcription Services
- Talking Type Captions
- CaptionMax
- Omega Transcripts
- VITAC
- SubPLY

Planning for Captioning

Example

- Stanford Captioning Project (captioning.stanford.edu/service.php)
 - Identified Problems, Solutions, & Timeline
 - Converting various media to web-ready format that works with accessible web-based players
 - Text transcript from audio of media
 - Synch text transcript with media
 - Project:
 - Docsoft:AV Captioning Solution (<http://docsoft.com/>)
 - Tools leverage software with blend of server and desktop applications to quickly and easily produce captioning for digital audio and video content

Steps for Accessible Video

1. Video or audio file
2. Transcript
3. Caption Display: segment & timecode
4. Create caption files
5. Combine caption file with video
6. Publish & distribute captioned media

Step 1:

Video or Audio File - Media Players



Microsoft Windows Media Player

- **.wmv, .avi** Video File
- **.wma** Audio File



Apple QuickTime and iTunes

- **.mov, .qt** Video File
- **.m4p** Audio File



Real Network Real Player

- **.rm** Video File
- **.ra, .ram** Audio File



Adobe Flash Player

- **.swf., .flv** Video File
- **.mp3** Audio File

VideoLAN VLC Media Player



- **swf., .flv** Video File
- **mp3, .m4p** Audio File
- Cross-platform media player
- Only player that can display both closed captions and closed audio description
- Keyboard controls
- Screen reader:
 - Labeled buttons
 - Hidden player controls

Step 1: Basic Script & Production

Tips for Accessibility

- [Producing Programs and Videos for Viewers with Vision Impairment \(MAG Guide #2\)](#)
- [Accessible Digital Media Guidelines](#)
- [Do It Yourself Video Guide for Government Agencies \(PDF\)](#)

Step 2:

Transcript – Content

- Transcribe spoken words and describe other aspects that convey information onscreen and offscreen
 - Narration, dialogue, sound effects, pick-up cues
- Type contractions as spoken (I'll vs. I will)
- Follow standard capitalization & punctuation
- Do not spell out numbers
- **At End:** any captioning credits and identify “end of transcript”

Step 2:

Transcript – Content

- Sentence Size
 - Depends on space for captions and font size
 - Keep in proportion and display 1-2 sentences
- Accurately represent each speaker's words, conversational quality, and speech patterns.
- Change as little as possible – keep original language
 - Word for word, except fillers (i.e. um, huh)
 - Use correct (not phonetic) spelling
 - Do not change sentence structure and grammar (even mispronounce)
 - No “water-down” or rewrite, except require for presentation rate
- Easy to read & consistent – and spellcheck

Step 2:

Transcript - Conventions

- Speaker: Name followed by a colon, >>, or >>>
- Titles and Reading aloud: *italics*
- Audible breath: hhh
- Unclear audio: <inaudible>, <silence>
- Singing: where possible, surround with musical note icon

Step 2:

Transcript Example

[Bang, sound of a door slamming]

Describer: A woman runs hurriedly out of a house and toward her husband who is mowing the lawn.

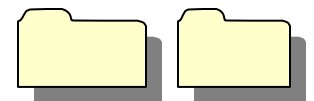
Lisa: Do you know where Scruffy is?!

Describer: Man stops mowing and looks puzzled at his wife.

Dan: I haven't seen him for twenty minutes.

[Sound of digging]

Dan: On no! Scruffy is in the flower beds.



Step 3:

Caption Display - Preparation

- Ensure media edited and final
- Transcript spellchecked
- Before import, reformat transcript – save as .txt file
 - Single space between each sentence
 - Double space
 - Create a new caption
 - Clearing caption / long pause
 - After last line to avoid drop last caption
- Check timecode is 0:00:00.00 and your final timecode is empty caption at end of media

Caption Display – Preparation

Need:

- Text editor (i.e. Notepad)
- Video
- Video player

1. Listen to video and pause.

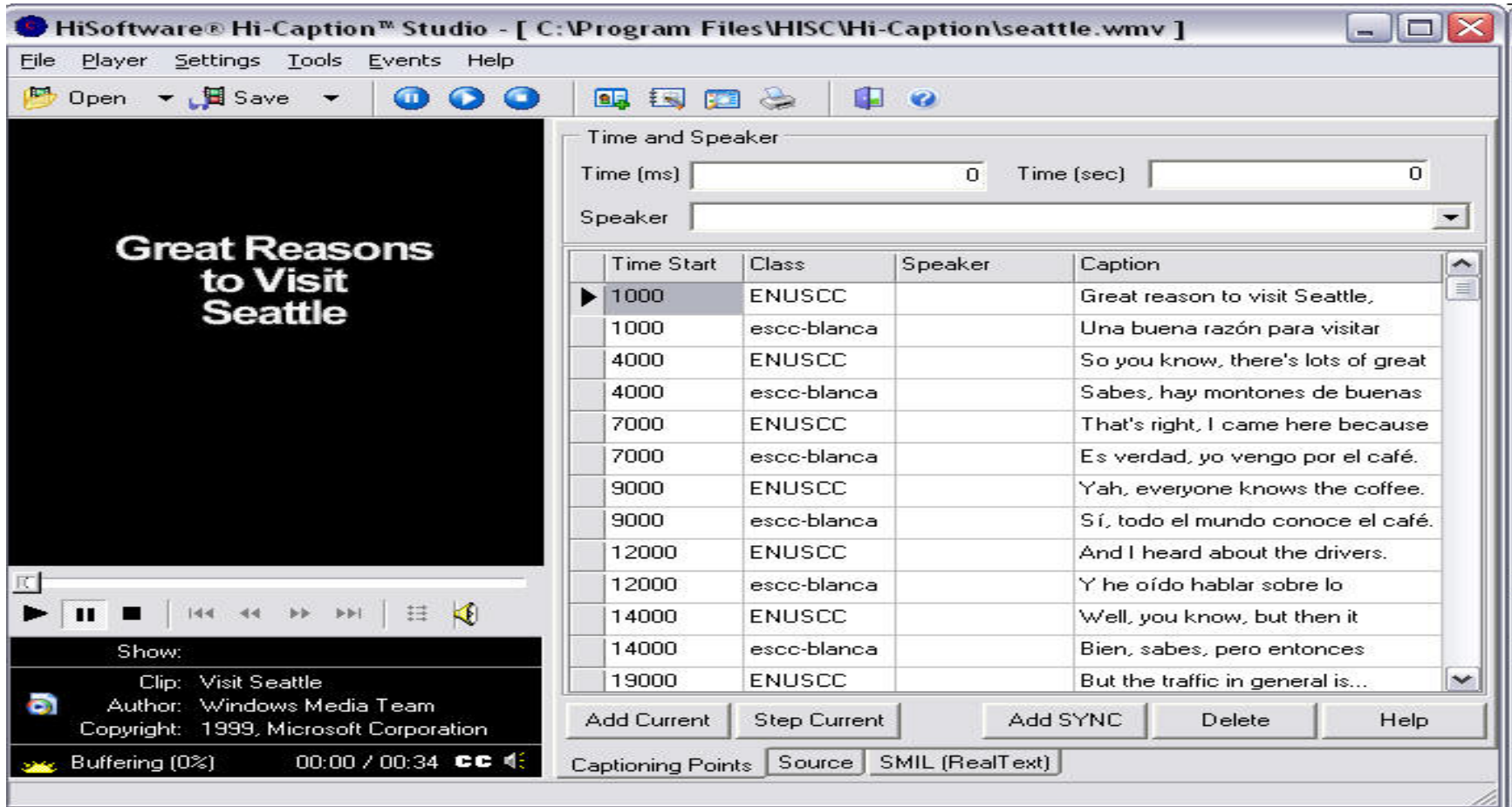
- After about 10 or more words

2. Tips

- Move to next line when you think caption break is appropriate.
- Don't need every word – OK leave out stuttering, unnecessary, etc/
- Check formatting is correct:
 - >>Speaker's name
 - [Non-audible information in brackets]

Step 3:

Captions Display: Interface



The screenshot shows the HiCaption Studio software interface. The main window title is "HiSoftware® Hi-Caption™ Studio - [C:\Program Files\HISC\Hi-Caption\seattle.wmv]". The interface includes a menu bar (File, Player, Settings, Tools, Events, Help), a toolbar with icons for Open, Save, and playback controls, and a video player area on the left displaying the text "Great Reasons to Visit Seattle".

On the right side, there is a "Time and Speaker" section with input fields for "Time (ms)" and "Time (sec)", both set to 0, and a "Speaker" dropdown menu. Below this is a table of captioning points:

Time Start	Class	Speaker	Caption
▶ 1000	ENUSCC		Great reason to visit Seattle,
1000	escc-blanca		Una buena razón para visitar
4000	ENUSCC		So you know, there's lots of great
4000	escc-blanca		Sabes, hay montones de buenas
7000	ENUSCC		That's right, I came here because
7000	escc-blanca		Es verdad, yo vengo por el café.
9000	ENUSCC		Yah, everyone knows the coffee.
9000	escc-blanca		Sí, todo el mundo conoce el café.
12000	ENUSCC		And I heard about the drivers.
12000	escc-blanca		Y he oído hablar sobre lo
14000	ENUSCC		Well, you know, but then it
14000	escc-blanca		Bien, sabes, pero entonces
19000	ENUSCC		But the traffic in general is...

At the bottom of the interface, there are buttons for "Add Current", "Step Current", "Add SYNC", "Delete", and "Help". Below these buttons is a "Captioning Points" section with a dropdown menu currently set to "Source" and another option "SMIL (RealText)".

Step 3:

Caption Display - Styles

- Contrast background & font color
 - Black/white/transparent background
 - Black/yellow letters
- Case: All caps or mixed acceptable
- Font Type: Sans-serif (Arial, Helvetica, Verdana)
- Font-Size: 12 pt
- Position: Bottom
- Alignment: Left-align or center

Step 3:

Caption Display - Size

- Caption width usually same width as video
- Caption heights ~ 80 px
- Amount of words that can display in the caption area depends on size defined

Step 3:

Caption Display – Resources

- **Captioning Key: Guidelines & Preferred Styles**
 - Online or download PDF file
- **NCAM Accessible Digital Media Design Guidelines**
 - Free online or CD available; e-mail access@wgbh.org



Step 4:

Caption File – Format & Players



- Microsoft Windows Media Player
 - (SAMI) Synchronized Accessible Media Interchange



- Apple QuickTime and Other Devices
 - (QT) QuickTime Text Track
 - (SMIL) Synchronized Multimedia Integration Language
 - (TTXT) Simple Text File



- Real Network Real Player
 - (RT) Real Text
 - (SMIL) Synchronized Multimedia Integration Language



- Adobe Flash
 - (DFXP) Distribution Format Exchange Profile
 - (TTML) Timed Text Markup Language



- YouTube
 - (SRT) SubRip, Subtitle
 - (SBV, SUB) SubViewer
-



Caption File Example

0:00:00.506,0:00:06.506

(Music)

0:00:03.866,0:00:09.866

The organizations
that I'm involved

Step 4:

Caption File – Naming

- Use consistent naming convention to identify which caption files go to video file
 - Use separate folders for different media caption files
- Both SAMI and SMIL use .smi or smil extension
 - Always save SMIL files with the .smil extension
 - Always save SAMI files with the .smi extension.

Step 4:

Caption File - Multiple languages

- XML File size can impact the performance of the caption display
- Because has to load the whole file, use a single XML Captioning file for each language
- If use online translation tools to convert to another language, rarely 100% accurate.

Step 4:

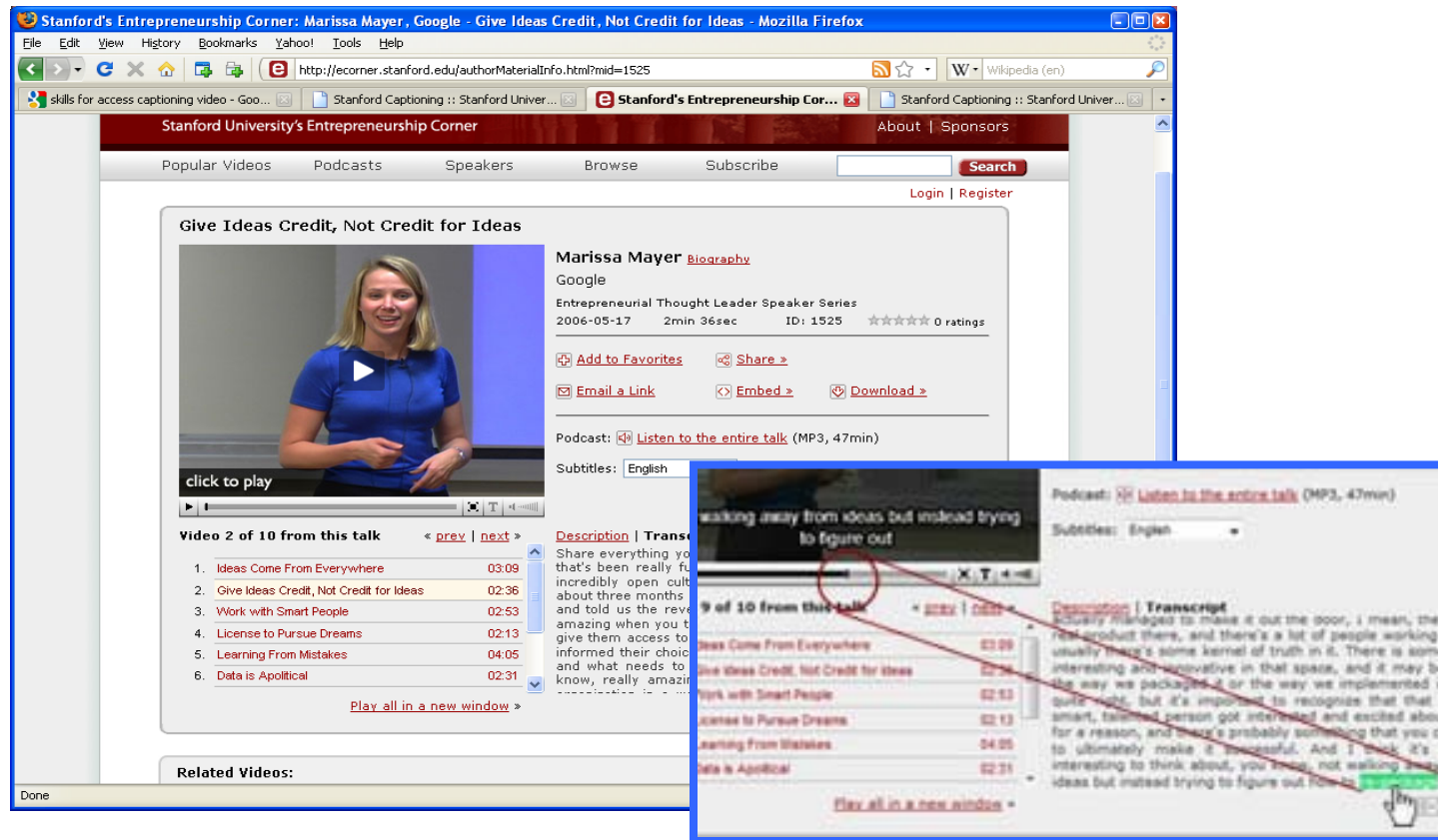
Caption File Converters

- **.srt to DFXP Converter**

<http://captioning.stanford.edu/convert.php>

Example: Searchable Video

ecorner: Stanford's Entrepreneurship Corner



Example: Accessible Video

- Perkins School for the Blind Webcasts, showcase for embedded Flash videos containing both captions and audio descriptions



You Tube

- Intellectual property or privacy concerns?
- Upload video
 - Formats: .AVI, .MOV, .WMV, .MPG
 - Maximum size: 2 GB
 - Maximum length: 10 minutes
- Captions & Subtitles
http://www.youtube.com/t/captions_about



YouTube Auto-Captioning

Need:

- YouTube account
- Your video in English-language (uploaded to YouTube)

After login to your YouTube Account:

1. Go to My Videos & select video to “Edit”
2. Captions and Subtitles > “Request Processing”
 - Only shown if video has not been processed
3. “Machine Transcription (processing)” under caption tracks
 - Available after few days



YouTube Auto-Timing: Transcript Tips

- Identify long pauses (3 seconds or longer) or music in the transcript with a double line break.
- Use double line breaks anytime you want to force a caption break.
- Descriptions inside square brackets like [music] or [laughter] to convey sound effects.
- Use >> at the beginning of a new line to identify speakers or change of speaker.



YouTube Auto-Timing

Need:

- YouTube account
- Your video in English-language (uploaded to YouTube)
- Transcript in English (.txt) of your video

After login to your YouTube Account:

1. Go to My Videos & select video to “Edit”
2. Captions and Subtitles > “Add New Captions or Transcript”
3. Attach your transcript and select type: “Transcript file”.
4. If desired, provide file name (English by default).
5. Select “Upload file”
6. Displays under “Available Caption Tracks”



YouTube Captioning

Need:

- YouTube account
- Your video in English-language (uploaded to YouTube)
- Caption file (.SUB or .SRT) of your video

After login to your YouTube Account:

1. Go to My Videos & select video to “Edit”
2. Captions and Subtitles > “Add New Captions or Transcript”
3. Attach your caption file and select type: “Caption file”.
4. If desired, provide file name (English by default).
5. Select “Upload file”
6. Displays under “Available Caption Tracks”



YouTube Caption File Download

Need:

- YouTube account
- Owner of video

After login to your YouTube Account:

1. Go to My Videos & select video to “Edit”
 2. Captions and Subtitles pane
 3. Under Caption Tracks, Download – English: Machine Transcription
 4. Captions.sbv file will be saved
- Text file with timecode information – use with caption software or open in text editor (i.e. Notepad)

Tips for Optimizing Flash Video Access

- Assign text equivalents
- Animation: looping elements inaccessible, user control of motion
- Use accessible components – enable Accessibility()
- Enable control over reading order
- Facilitate keyboard access to all controls
- Provide captions
- Provide accessible video controls
- Enable control over audio playback
- Expose structure
- Expose state of controls
- Use color wisely
- Validate for accessibility

Accessible Video: Handheld Media & Mobile Devices

- What You Need
 - Video file: .mov
 - Closed caption file: .mp4
 - Specialized tools, time – only on Mac
- Resources:
 - [Captioning Media for iTunes](http://captioning.stanford.edu/itunes.php)
<http://captioning.stanford.edu/itunes.php>
 - [Creating Accessible iTunes U Content](http://deimos3.apple.com/WebObjects/Core.woa/Browse/wgbh.org.2010579900)
<http://deimos3.apple.com/WebObjects/Core.woa/Browse/wgbh.org.2010579900> - [PDF](http://ncam.wgbh.org/file_download/103): http://ncam.wgbh.org/file_download/103
 - [Captioning Solutions for Handheld Media and Mobile Devices](http://ncam.wgbh.org/invent_build/web_multimedia/mobile-devices)
http://ncam.wgbh.org/invent_build/web_multimedia/mobile-devices



Examples: Captioned Podcast



[Academic Technology Report Podcast](#)

[ASL Video Podcast on Disability Law](#)

[Disability Law Lowdown \(DLL\) Podcast](#)

[Disability Law Lowdown \(DLL\) Podcast in Espanol](#)



Advancing Accessible Video

- Model policies & standards
- Develop accessibility statement
- Advocate for more captioned media
- Promote awareness of accessibility
- Show your appreciation of captioned media
- Participate and support training on captioning
- Compile & share resources



Questions...

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ADA Audio

CONFERENCE

NATIONAL NETWORK OF ADA CENTERS

Accessible Technology On-line Seminar Series

ada-audio.org

A Project of the ADA National Network by DBTAC

Toll-free: (800) 949-4232 [voice/tty]

Web: adata.org

Coordinated by the DBTAC: Great Lakes ADA Center

Toll-free: (877) 232-1990 [voice/tty]