IBM® AbilityLab™ Digital Media Captioner & Editor
IBM Media Library Metrics

Great portion of all media content on Media Library does not have captions or transcriptions

Total media count = 78,546
Media w/o transcript = 93%
Matrix of Media and Technology Components

This is complex – there are many components – such as the media itself:

- Broadcast - TV
  - Live
  - Recorded
- Broadcast – Radio
- Web
  - Webcast
  - Podcast
  - Audio
  - Video
- Lecture Presentation
  - Speaker notes
  - Charts
- VoIP
  - Teleconference
  - One-to-one
- Internet
  - IM
  - A / V Chat

And the process:

1. Digital Recording
2. Media Transformation
3. Transcription
4. Edit Translation
5. Edit Media Generation / Synchronization
Media Captioning & Editing Technology Effort

Corporate requirement to caption videos published on www.ibm.com and w3

Provide Captioning, Transcription and Editing Capability for Ever Increasing Multimedia Content on IBM w3 Intranet

A Collaborative Effort between IBM Research Groups

Human Ability & Accessibility Center
China Research Lab
Tokyo Research Lab

Using state-of-the-art IBM Automatic Speech Recognition
Captioner and Editor Users

HA & AC Deploys Video Captioning and Editing System (Nov 2008)

• Embraced by W3 team to caption executive videos
• Alternative to current expensive commercial captioning service
• Result is a more cost effective and faster solution

What W3 Team is Saying

• “Love this tool ... was able to transcribe/caption a 4 minute video in under an hour. This could really change how the w3 team does a lot of things …”
• “I’m really, really happy with the results. Really happy. Thanks for a great tool.”
• “I’m getting more and more people up and running on Captioner & Editor ...”

The Project

• World-wide collaboration between HA & AC, CRL, TRL and WRL
• Speaker independent Automatic Speech Recognition WRL
• Caption Editing Client (CES) – TRL
• Closed-Caption Media (BCC Platform) – CRL
• API design, communication architecture and deployment – HA&AC
Used to caption IBM Executive videos for www and w3
Captioner and Editor is Easy to Use

Speech Recognition

Caption Correction

Merged Media Creation
Captioner & Editor Jobs and Captioned Media Stats

Captioner & Editor Jobs & Captioned Media Hours - To-Date: July 2010

Total Jobs: 2100 (+44)
Total hours: 596 (+23)
System Overview and Architecture

Objectives:
• Video captioning based on speech recognition with editing capability

Status:
• Internal Use
• Available on IME for external users – 2011 (March - April)

ASR Components:
• Web Service – SOA
• ASR
• Timing and Files

CES Components:
• Controlling GUI
• Editing – Master / Client

BCC Components:
• Open-Caption / Closed-Caption
• Media generation
• Sync

ASR

Chrome

Captioner & Editor Server

Server Services

Browser

Today

Yesterday

Tomorrow ????

RCP

VB GUI

Client

HTML

SMIL

Transcription

Text
Usage Scenario

**Who will use this?**
- PwD – deaf / hard of hearing
- Captioning of media archives
- Search engines
- Data mining

**Examples:**
- IBM
- NCSU
- NASA
- National Archives
- Broadcasting companies

**How to use this?**
- Login to the Web

- Upload *appropriate media format* to server

- Notification e-mailed - “Caption Ready”
- If still logged in, status gets updated on Web GUI

- Edit the captions, as needed, synchronized with audio track

- Submit for final merge – Open caption / Closed caption

- Show-off your handy work and get bonuses
Possible Business Model

**Client & Web Services Model**

**Client:**
- Direct sale
- Updates
- Upgrades
- Training

**SOA Services:**
- Services-based
- Registration fee
- Usage fee
- Can be upgraded w/o any service interruption

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**Enterprise Solution Model**

**Enterprise Sale**
Complete sale and service inside
where i bring you information on new and emerging technologies from i. b. m.
IBM Research Labs Experimental Technology Site

Welcome to the IBM Research Labs Experimental Technology Site.

Come play with our latest research experimental technologies. We invite you to experiment with these and future beta technologies with us. Your feedback will be essential - we look forward to collaborating with you!

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Manages and distributes real time multi-user transcriptions of conversations using speech recognition
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Enable virtual worlds to be accessible for blind users.
05 Nov 2010 | 5★  5★  5★ | 1 Ratings | View Details

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http://www.researchlabs.ibm.com/portal/
Features Rolling out on Research IME

► Look for Media Captioner & Editor on IME
  – March – April
  – Features will be activated as they are certified

► User community
  – Allow multiple people share the editing tasks
  – Who edited which line?

► Closed-caption

► Creating other caption file format

► Creating sample HTML drop-in code-segment
  – ccPlayerAS3.swf FlashPlayer (WGBH), swobject.js (Google)

► Post-ASR processing

► Additional ASR languages