Audiovisual Accessibility: Evaluating Workflows for Closed Captioning and Transcripts

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INTRODUCTION
The University of Utah’s J. Willard Marriott Library is working on a grant-funded project to explore methods for generating and displaying closed captions and transcripts for digital audiovisual resources. Without a text analog available for this type of content, users with a disability such as hearing impairment are not able to fully use the resources, and the potential for scholarly digital analysis of the materials is limited. By testing different tools and workflows for creating this data in-house and examining options for outsourcing some or all transcription of audiovisual items, this project will help to ensure that audiovisual content becomes more accessible to all users regardless of their needs.

Building upon the work of other archivists dedicated to achieving full accessibility for their audiovisual collections, this poster outlines the parameters of the University of Utah’s ongoing project.

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METHODS AND WORKFLOWS

<table>
<thead>
<tr>
<th>Department</th>
<th>Function</th>
<th>Project Role</th>
</tr>
</thead>
<tbody>
<tr>
<td>Audio-Visual Archive</td>
<td>Collects unique regional moving images and sounds</td>
<td>Select and analyze files of various representative genres, formats, and quality for project tests</td>
</tr>
<tr>
<td>Digital Library Services</td>
<td>Conducts digitization, digital preservation and metadata creation</td>
<td>Oversees creation of captions and transcripts by student transcriptionist, Google Speech-to-Text, vendor Rev.com</td>
</tr>
<tr>
<td>Digital Infrastructure Development</td>
<td>Manages the technical framework of the digital library</td>
<td>Set up outsourced transcription APIs, integrate transcript and captioning display into the digital library public interface</td>
</tr>
</tbody>
</table>

Potential Tools and Media Players to Review

- HPSTAS
- Google Cloud Speech-to-Text
- Oral History Metadata Synchronizer
- oTranscribe
- Moviewapper

Workflow for Student Digital Audiovisual Transcriptionist

Manually transcribe audio using oTranscribe and Moviewapper

Review and correct automated transcriptions created by Google API

Review transcriptions created by vendor service Rev.com, correct as needed

ASSESSMENT AND RESULTS

Comparison of Transcription of a Poor Quality Audio Clip from A0236 International Women’s Year: Employment

<table>
<thead>
<tr>
<th>Manual Transcription by Student</th>
<th>Google Automatic Transcription</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time to manually transcribe and QC</td>
<td>00:12:41</td>
</tr>
<tr>
<td>Time to transcribe 1 min of audio</td>
<td>$2.07</td>
</tr>
</tbody>
</table>

DISCUSSION

Accessibility needs to be at the forefront of all library projects to make sure that we are meeting the needs of our patrons. It can be difficult to know all of the needs to our digital library users since we do not have face-to-face interactions with the majority of them. If a digital library patron is not able to get the information they need from our resources because we have not done the necessary work to make them accessible, we are not serving our patrons to the best of our abilities. This project will give the Marriott Library and its industry partners the practical information we need to effectively implement a program to make digital audio and audiovisual collections fully accessible to all users, including the hearing impaired.

PROJECT DELIVERABLES: SUMMER 2019

- Project test files selected
- Student Digital Audiovisual Transcriptionist hired
- Manual transcription begun
- Automatic transcription begun

Example File Selection Grid and Statistics

<table>
<thead>
<tr>
<th>Collection</th>
<th>Title</th>
<th>Creation date</th>
<th>Date digital</th>
<th>Duration</th>
<th>Sample rate</th>
<th>Bit depth</th>
<th>Genre</th>
<th>Original format</th>
<th>Speed</th>
<th>Audio quality</th>
<th>Audio channels</th>
<th>Speakers</th>
<th>Time to manually transcribe and QC</th>
<th>Cost for manual transcription (per hour)</th>
<th>Time to transcribe 1 min of audio</th>
</tr>
</thead>
<tbody>
<tr>
<td>A026 Golden Spike Oral History Project audio recordings</td>
<td>Mayne Wells Lower</td>
<td>1974</td>
<td>2010</td>
<td>0:47:43</td>
<td>44.1</td>
<td>16</td>
<td>oral history interview</td>
<td>1 ⅞ ips</td>
<td>poor</td>
<td>1 mono</td>
<td>2</td>
<td>9:52</td>
<td>$2.07</td>
<td>00:12:41</td>
<td></td>
</tr>
<tr>
<td>A1909 Les Miller collection of broadcast radio audio recordings</td>
<td>Heart Throbs of the West: The Dixon Woman</td>
<td>1947</td>
<td>2011</td>
<td>0:11:49</td>
<td>44.1</td>
<td>32</td>
<td>radio program</td>
<td>photograph record</td>
<td>33 rpm</td>
<td>very poor</td>
<td>1 stereo</td>
<td>multiple</td>
<td>3:22</td>
<td>$2.85</td>
<td>00:17:09</td>
</tr>
<tr>
<td>A0409 Carl Swimmer collection of Mayor May Bellucci audio recordings</td>
<td>Dr. Maud May Babcock’s final address given before the Speech Association of America</td>
<td>1950</td>
<td>2014</td>
<td>0:12:44</td>
<td>44.1</td>
<td>16</td>
<td>speech, lecture, or teleseminar</td>
<td>photograph record</td>
<td>33 rpm</td>
<td>poor</td>
<td>1 stereo</td>
<td>2</td>
<td>1:19</td>
<td>$1.03</td>
<td>00:06:20</td>
</tr>
<tr>
<td>A0236 International Women’s Year audio recordings</td>
<td>Employment</td>
<td>1977</td>
<td>2013</td>
<td>0:50:26</td>
<td>44.1</td>
<td>16</td>
<td>public event</td>
<td>photograph record</td>
<td>1 ⅞ ips</td>
<td>poor</td>
<td>1 stereo</td>
<td>1</td>
<td>16:02</td>
<td>$3.18</td>
<td>00:19:07</td>
</tr>
</tbody>
</table>

DISCUSSION

Workflow adjustments, time required, and costs incurred for each transcription method and each genre, format, and quality situation will be assessed throughout the project. After transcripts and captioning have been created for some audiovisual content, we will ingest that content into our digital library to make it accessible to all patrons. Once these files are online, we will conduct an evaluation of the new content with some of our digital library users to make sure that the accessibility and user experience has improved for all patrons.