Examining AV Enterprise at a Regional Academic Archive

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University of Utah Audio-Visual Archive

- One of 7 Special Collections departments at the J. Willard Marriott Library
  - Manuscripts
  - Photographs
  - Audio-Visual
  - Print & Journal
  - Rare Books
  - Book Arts
  - University Archives & Records
- 1971: First AV item documented
- 2001: First full time archivist hired
Growth of Audio-Visual Archive 1993-2013

- Items Accessioned
- Total Items in Archive
- Approximate Total Hours in Archive

From 1993 to 2011, the archive has seen a significant increase in the number of items and hours.
Our First Video Grant Project

Remaining AV Archive

KUTV

EXTRA Show Tapes Digitized
Old Model AV Digitization at the U

**PROS**

- In-house digitization
- Rapid turnaround
- Items become accessible as requested by patrons and donors

**CONS**

- Bargain equipment
- No additional lab facilities
- No dedicated technical expertise
- Physical preservation and metadata processes suffer
- No preservation quality digital masters
Quality Issues with Deteriorating U-matics

U of U - “click capture, press play”

MediaPreserve - lab facilities
Pre-Digitization

Jessica Breiman
Pre-Digitization

- Selecting projects for grant funding
- Selecting the appropriate funder
- Navigating bureaucracy and communicating your message
Preparing to Write a Grant

- Select projects/collections to write white papers about
- Write white papers for several collections or grants
- Select a fund-able project
Selecting a Funder

- Local funders: LSTA grants administered by state libraries, Humanities and Arts Councils, historical societies, university-wide grants, etc.
- National funders: NEH, NEA, IMLS, DPLA
- Subject or format specific: NFPF, ARSC,
Interim Director of IT points out how much data grant will produce and how much it will cost to digitally preserve that data.

We are told to ‘not digitize anything’

Grant application is put on hold.
<table>
<thead>
<tr>
<th><strong>CURRENT UIT COSTS TO ML</strong></th>
<th><strong>LSTA GRANT PROPOSAL</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Data storage</td>
<td>100 60-min videos</td>
</tr>
<tr>
<td>Tape backup - fixed</td>
<td>48 30-min videos</td>
</tr>
<tr>
<td>Tape usage</td>
<td>124 hours</td>
</tr>
<tr>
<td></td>
<td>7,440 min's</td>
</tr>
<tr>
<td></td>
<td>1.4 GB/min video (std def)</td>
</tr>
<tr>
<td></td>
<td>10.4 TB's</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>ANNUAL UIT COSTS</strong></th>
<th><strong>DATA ARCHIVE COSTS</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Data storage</td>
<td>1 year $9,541</td>
</tr>
<tr>
<td></td>
<td>3 years $28,623</td>
</tr>
<tr>
<td></td>
<td>6 years $57,246</td>
</tr>
<tr>
<td>Tape backup - fixed</td>
<td></td>
</tr>
<tr>
<td>Tape usage</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>COST PER TB (Archive, only)</strong></th>
<th><strong>DPN Charges (per TB)</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>1 year</td>
<td>1 year</td>
</tr>
<tr>
<td>$916</td>
<td>$850</td>
</tr>
<tr>
<td>3 years</td>
<td>20 years</td>
</tr>
<tr>
<td>$2,748</td>
<td>$5,000 (or 5.9 years equivalent)</td>
</tr>
<tr>
<td>6 years</td>
<td></td>
</tr>
<tr>
<td>$5,496</td>
<td></td>
</tr>
</tbody>
</table>

**Alison's Folklore Music Grant (LSTA-2012)**

- 32 hours of audio
- 87 GBs total
- $0.84 per GB per yr (UIT cost then was $0.07)
- **$8.40 per GB for 10 years**
- **$731 total charge to grant**

**Current rate of capture for audio**

- 0.02 GB/min

**Ratio of video to audio**

- 70 to 1
Addressing the Problem

• Communicate our message clearly and coherently
• Communicate with grant administrators about the issue
• Come to a compromise
Final Grant Request

$4988 Salaries

Includes salaries of project supervisors and a metadata intern

$4956 Digitizing services

$1100 Event planning/website creation

$3664 Digital Storage and Preservation

Total Grant Request = $14,708
Post-Digitization: Our Grant in Practice

Molly Rose Steed
What We Asked For

- Contract digitization services
- Digital preservation costs for period of grant
- Hourly assistant for metadata, QA & access
- Funds to promote use of digitized collection
What We Received

• Contract digitization services
• Digital preservation costs for period of grant
  - Hourly assistant for metadata, QA & access
  - Funds to promote use of digitized collection
What We Have Done So Far

• Contracted for digitization of EXTRA showtapes
Reality of Digitized Items

U-matic Digitization Success
- Failed Digitization, 14, 10%
- Successful Digitization, 123, 90%

Total Media Types Digitized
- 1-inch, 7, 4%
- 2-inch, 19, 12%
- U-matic, 137, 84%
What We Have Done So Far

- Contracted for digitization of EXTRA show tapes
- Uploaded digital files to server with tape backups
Reality of Content Generated

- Tapes Digitized: 163
- Episodes: 243
- Stories: 637

Data (GB): 11,565
What We Have Done So Far

- Contracted for digitization of EXTRA showtapes
- Uploaded digital files to server with tape backups
- Quality assessment of digital files using QCTools
<table>
<thead>
<tr>
<th><strong>Drop-out Activity:</strong></th>
<th>Low</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Picture Quality:</strong></td>
<td>Good</td>
</tr>
<tr>
<td><strong>Audio Quality:</strong></td>
<td>Good</td>
</tr>
<tr>
<td><strong>Playback Condition Comments:</strong></td>
<td>N/A</td>
</tr>
<tr>
<td><strong>General Comments:</strong></td>
<td>There are bars and tone on the tape that break up. Audio is channel 1 only. There are dropouts and RF Signal noise in the tape. Head switching is visible in the bottom of the frame.</td>
</tr>
<tr>
<td>Title</td>
<td>Duration</td>
</tr>
<tr>
<td>-----------</td>
<td>----------</td>
</tr>
<tr>
<td>Mac Haddow</td>
<td>6:40</td>
</tr>
<tr>
<td>Simon Wiesenthal</td>
<td>5:23</td>
</tr>
<tr>
<td>Speed Week</td>
<td>6:23</td>
</tr>
<tr>
<td>Alice Kne</td>
<td>5:22</td>
</tr>
<tr>
<td>Las Vegas Wddings</td>
<td>6:02</td>
</tr>
<tr>
<td>Mac Haddow Reply</td>
<td>1:14</td>
</tr>
<tr>
<td>Bugman</td>
<td>5:03</td>
</tr>
<tr>
<td>Vaudeville</td>
<td>4:54</td>
</tr>
<tr>
<td>Prison Family Home Evening</td>
<td>7:55</td>
</tr>
<tr>
<td>Handicapped Cuts</td>
<td>4:55</td>
</tr>
<tr>
<td>Eagles (Glacier National Park)</td>
<td>5:30</td>
</tr>
<tr>
<td>Clean Air Act</td>
<td>7:20</td>
</tr>
</tbody>
</table>
Improvements on Imperfect Images

Before

After
What We Have Done So Far

• Contracted for digitization of EXTRA showtapes
• Uploaded digital files to server with tape backups
• Quality assessment of digital files using QCTools
• Story-level metadata and compressed derivatives for upcoming streaming access
Reality of Content Generated

- Tapes Digitized: 163
- Episodes: 243
- Stories: 637
<table>
<thead>
<tr>
<th>A</th>
<th>Title</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>31</td>
<td>Fawn Brodie</td>
<td>07:49</td>
<td>KUTV (Television station: Salt Lake City, Utah)</td>
<td>Judy Hallet</td>
<td>Fawn Brodie talks about her controversial Joseph Smith biography, &quot;No Man Knows My History&quot;</td>
<td></td>
</tr>
<tr>
<td>32</td>
<td>Coal Special</td>
<td></td>
<td>KUTV (Television station: Salt Lake City, Utah)</td>
<td>Reece Stein</td>
<td>Coal 1: Strike miners experiences of the community. Introduction to the health issues and dangers.</td>
<td></td>
</tr>
<tr>
<td>33</td>
<td>Snowmobile</td>
<td>09:53</td>
<td>KUTV (Television station: Salt Lake City, Utah)</td>
<td>Karl Idoaog</td>
<td>Snow mobile: Trip from Heber City UT to West Yellowstone National Park passing thru South.</td>
<td></td>
</tr>
<tr>
<td>39</td>
<td>Rick Bennett</td>
<td>08:25</td>
<td>KUTV (Television station: Salt Lake City, Utah)</td>
<td>C. Larry Roberts</td>
<td>Haggath machine that analyses voice patterns to check for truthfulness.</td>
<td></td>
</tr>
<tr>
<td>100</td>
<td>NBC Update</td>
<td>01:00</td>
<td>KUTV (Television station: Salt Lake City, Utah)</td>
<td>Karl Idoaog</td>
<td>NBC late news report showing News chains can be human.</td>
<td></td>
</tr>
<tr>
<td>101</td>
<td>Barbershop Quartet</td>
<td>05:27</td>
<td>KUTV (Television station: Salt Lake City, Utah)</td>
<td>Lucky Severson</td>
<td>Barbershop quartet performance, explanation, experience and introduction.</td>
<td></td>
</tr>
<tr>
<td>102</td>
<td>Sergio Moore</td>
<td>06:56</td>
<td>KUTV (Television station: Salt Lake City, Utah)</td>
<td>Lucky Severson</td>
<td>UT Medical Examiner experiences, personal recollections &amp; Reun do not air.</td>
<td></td>
</tr>
<tr>
<td>105</td>
<td>Heroine Witness</td>
<td>07:25</td>
<td>KUTV (Television station: Salt Lake City, Utah)</td>
<td>Brad White</td>
<td>Drug Bust Mexican Connection Connie Hale witness protection program experience.</td>
<td></td>
</tr>
<tr>
<td>103</td>
<td>Computers</td>
<td>09:48</td>
<td>KUTV (Television station: Salt Lake City, Utah)</td>
<td>Trent Harris</td>
<td>University of Utah Music and Art Introduction experiences by Alkaline Ferrer with computer</td>
<td></td>
</tr>
<tr>
<td>104</td>
<td>Contractors</td>
<td>07:43</td>
<td>KUTV (Television station: Salt Lake City, Utah)</td>
<td>Karl Idoaog</td>
<td>UT illegal contractors, overcharging and scamming people with new and old houses. How the</td>
<td></td>
</tr>
<tr>
<td>106</td>
<td>Black Boy Scouts</td>
<td>13:17</td>
<td>KUTV (Television station: Salt Lake City, Utah)</td>
<td>Karl Idoaog</td>
<td>Utah's Boy Scout program received bad publicity when the LDS Church restrictions prevented</td>
<td></td>
</tr>
<tr>
<td>107</td>
<td>Chiefs</td>
<td>04:30</td>
<td>KUTV (Television station: Salt Lake City, Utah)</td>
<td>Judy Hallet</td>
<td>Judy Hallet tastes culinary delights and interviews chefs at Hotel Utah's classical French dinner</td>
<td></td>
</tr>
<tr>
<td>108</td>
<td>Dulcimer</td>
<td>01:12</td>
<td>KUTV (Television station: Salt Lake City, Utah)</td>
<td>Judy Hallet</td>
<td>Musician Mark Nelson serenades KUTV with a song on his dulcimer.</td>
<td></td>
</tr>
<tr>
<td>109</td>
<td>Shirley Haycock</td>
<td>05:40</td>
<td>KUTV (Television station: Salt Lake City, Utah)</td>
<td>Lucky Severson</td>
<td>Utahn Shirley Haycock talks about her three failed attempts to cross the Atlantic Ocean in her</td>
<td></td>
</tr>
<tr>
<td>110</td>
<td>Ed Abbey</td>
<td>10:58</td>
<td>KUTV (Television station: Salt Lake City, Utah)</td>
<td>Diane Orr</td>
<td>Author and environmentalist Edward Abbey discusses his play &quot;Best of the West.&quot; This segment</td>
<td></td>
</tr>
<tr>
<td>111</td>
<td>Verbosity</td>
<td>01:51</td>
<td>KUTV (Television station: Salt Lake City, Utah)</td>
<td>Karl Idoaog</td>
<td>This segment is about the government's problematic tendency to use complicated words and</td>
<td></td>
</tr>
<tr>
<td>112</td>
<td>Miss Utah Pageant</td>
<td>08:02</td>
<td>KUTV (Television station: Salt Lake City, Utah)</td>
<td>C. Larry Roberts</td>
<td></td>
<td></td>
</tr>
<tr>
<td>113</td>
<td>Charlie Sheen</td>
<td>10:07</td>
<td>KUTV (Television station: Salt Lake City, Utah)</td>
<td>Judy Hallet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>114</td>
<td>Mark Eubank</td>
<td>07:13</td>
<td>KUTV (Television station: Salt Lake City, Utah)</td>
<td>Judy Hallet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>115</td>
<td>Solar Energy</td>
<td>06:41</td>
<td>KUTV (Television station: Salt Lake City, Utah)</td>
<td>Diane Orr &amp; Lucky Severson</td>
<td></td>
<td></td>
</tr>
<tr>
<td>116</td>
<td>Robert Bedford</td>
<td>05:18</td>
<td>KUTV (Television station: Salt Lake City, Utah)</td>
<td>Diane Orr &amp; Lucky Severson</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
What We Have Done So Far

- Contracted for digitization of EXTRA showtapes
- Uploaded digital files to server with tape backups
- Quality assessment of digital files using QCTools
- Story-level metadata and compressed derivatives for upcoming streaming access
- In progress: EAD
- Next: upload to Digital Library
Copyright

Complication:
- KUTV News still owns copyright
- Donor agreement (+fair use) allows educational use
- Does this extend to the Digital Library?

Solution:
- Start with on-campus access, then explore expansion
Ultimate Results

- New academic, historic, and artistic resource preserved
- New digitization & preservation strategies
Post Digitization: Digital Preservation

Tawnya Keller
Marriott Library digital preservation

Started in 2008

Initial policy written in 2010. Currently being heavily revised

Rosetta DPS, live in 2014
- 70+ TB ingested
- 120+ waiting
Preservation of EXTRA

• 11+ TB on 4 node QC208 Qumulo cluster NAS
• Tape backups in Perpetual Storage Granite Vault
• Rosetta ingest planned for Summer of 2016
EXTRA challenges

Sustainability

• How much $ to preserve this stuff long-term?
• How do we pay for it?
• File sizes
  o uncompressed?
  o losslessly compressed?
  o which codec to use?
Projects that sprang from EXTRA

AV digital preservation assessment pilot

• Lossless compression testing group

• UMATICS in-house digitization

• Strategy for a sustainable DP program
AV digital preservation assessment pilot

• Evaluated high-risk, high-value collection.
  o Which items to digitize from collection?
  o Redundancy between collections?

• Results
  o Created evaluation criteria for which items in a collection to digitize
  o Evaluation Matrix
Evaluation Matrix

1. Risk of content loss
2. Existing level of processing
3. Ease of providing access
4. Donor demand
5. Existing patron demand
6. Relevance to research specialty subjects
7. Probable uniqueness
Lossless compression working group

Policy

• Compile all research documentation for Library staff
• Conduct ABX testing with Library staff
• Formal recommendation to move to losslessly compressed video

Tech

• Department of Infrastructure Development to develop script for batch processing
• Investigate capturing straight to FFV1 for U-matic video
• Convert existing archival video to FFV1, based on format?
U-Matic video digitization program

11,400 tapes

Approximately 9,000 hours of material

Currently working on:

• Grant opportunities
• Survey to gauge interest within region
Strategies for sustainability

1. Digital Preservation Services for campus, community
   a. Software hosting
   b. Server storage

2. Budget line funding
   a. Library level
   b. University level?
The End

Document processes to accurately estimate and demonstrate time and staffing needs

Communicate and collaborate

Consider sustainability and preservation

Create a “Plan B”

Start somewhere

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