

Digitization in the Real World

**Lessons Learned from
Small and Medium-Sized
Digitization Projects**

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Digitization and Access of Louisiana Oral Histories: One Oral History Center's Experience in the Digital Realm

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Abstract

The Louisiana State University (LSU) Libraries Center for Oral History began an effort to digitize at risk and high demand collections in 2007. The Center acquired digitization equipment, server space, and collaborated with the Libraries Special Collections Digital Services librarian to offer digitized oral histories online via the statewide Louisiana Digital Library (LDL). This paper details the history of the ongoing development of a digitization program for oral history materials using two staff members and limited resources. Decisions about what materials to digitize and how, equipment and software, and issues with access and preservation will be discussed.

Keywords: Audio digitization standards, CONTENTdm, Digitizing audio, Digitization equipment, Digital library, Digitization workflow, Oral history, Oral history interviews.

Introduction

The Louisiana State University (LSU) Libraries T. Harry Williams Center for Oral History began to digitize at risk and high demand collections in late 2007. Planning for the systematic digitization of the primarily analog collection began a year prior to any digitization efforts. The Center sought advice from an expert in the field, acquired

digitization equipment and server space, hired a full time employee to manage digitization, and collaborated with the Libraries Special Collections Digital Services Librarian to offer digitized oral histories online via the statewide Louisiana Digital Library (LDL).

The Center staff and the Digital Services Librarian have prioritized collections for digitization based on fragility or patron demand, made decisions about organization and access of the audio materials for the public, and addressed copyright issues. Only a small number of oral history collections have been added to the LDL, although over 700 hours of tape have been digitized so far.

This paper details the history of the ongoing development of a digitization program for oral history materials with one full time staff person and partial effort from another staff member. Decisions about what materials to digitize and how, equipment and software, and issues with access and preservation will be discussed. Results of the digitization and online access efforts have been mixed, but may serve as an example for oral history programs wishing to develop a more programmatic approach to digitization.

Center History and Description

The T. Harry Williams Center for Oral History at LSU Libraries Special Collections documents the social, political, and cultural history of LSU and the state of Louisiana by conducting, collecting, preserving, and making available to the public oral history interviews of folk artists, war veterans, governors, congressmen, state and local officials, civil rights activists, and other historically prominent figures in Louisiana. The Center maintains over 4,000 hours of tape-recorded interviews. The three person staff and a number of student workers transcribe, index, and deposit oral history interviews for archival storage at LSU Libraries Special Collections.

The Center, opened in 1991, is named after a man who helped legitimize the field of oral history. Dr. T. Harry Williams, a popular and acclaimed southern history professor at LSU spent more than ten years researching the biography, Huey Long. Published in 1969, this Pulitzer Prize and National Book Award winning book drew upon

Williams' tape-recorded interviews with nearly 300 individuals. Williams used a 30 pound Webster Electric Ekotape reel-to-reel tape recorder to capture the interviews.

The primary mission of the Center is to document the history of LSU. Since the history of the state and university are closely intertwined, many broader Louisiana subjects are documented as well. Public outreach through training workshops, consultations, and collaborations with individual researchers, community groups, classes, and institutions, enhance oral history collections throughout the state. Often, the collections are donated to LSU Libraries for preservation and public access. In many cases copies are provided to libraries, schools, museums, providing access for members of the communities in which the oral histories were collected.

The Center differs from some oral history centers in its commitment to providing fully edited transcriptions of all recorded interviews. Barring any restrictions placed on interviews by the interviewee or interviewer, the audio and a full transcription are made available to scholars and the general public. Because of the large volume of interviews that are collected each year, the Center maintains a backlog of interviews that are not fully processed (i.e., digitized if applicable, transcribed, audited, and cataloged). Interviews are organized into more than 40 different series, including Civil Rights, Military History, and Political History.

The Center Director has taken a more programmatic rather than project-based approach to the digitization of the collected oral histories. To ensure that preservation issues are addressed and collection access is a top priority, the Director employs a full time sound technician/webmaster at the Center. Center staff also works with the Special Collections Digital Services Librarian to mount oral history collections to the Louisiana Digital Library (LDL) (<http://www.louisianadigitallibrary.org>).

The Center makes available materials that are not restricted by the interviewee or interviewer. Interviews are digitized on demand for patrons, for preservation purposes, and for public access on the LDL. Prior to the acquisition of digitization equipment, patron requested

copies were recorded from cassette tape to cassette tape. Now materials are delivered to patrons via CD unless a cassette tape is requested. Copies are provided for a fee to patrons, although a small number of oral histories maintained by the Center are available for listening free online in the LDL. Center staff generally digitize fewer than five interviews per month for patron requests.

The funding for the Center is a mix of Libraries monies and endowment funding. The Libraries pays the salaries of the Director and two full time employees. Student workers' pay, a portion of travel money, and some supplies are also paid for by the university. The Libraries purchases and provides support for computers for the Center staff and student workers. Endowment funds cover most travel expenses, the majority of the equipment (specifically the field recorders, digitization station, software, fax machine, scanner), any Graduate Assistantships, additional student workers, and the majority of the transient workers' (e.g., professional interviewers, transcribers, editors) wages

Early Forays in Digital Access

One of the earliest digital projects the Center was involved with was a pilot project to digitize oral histories that are part of the University History Series sub-series, Integration and the African American Experience at LSU. The sub-series contains interviews with black students, faculty, and administrators at LSU during integration (1950-1970), plus interviews with lawyers and their clients who were involved in key lawsuits, as well as politicians and others who were vocal opponents or supporters of integration. The resulting digital collection, named "Integration and the Black Experience at LSU" (2003) contains audio files and transcriptions of three individuals interviewed between 1985 and 1998.

This legacy digital collection is scheduled to be revamped soon. The ".rm" or ".ram" audio files are available for listening only in RealPlayer and must be downloaded to the listener's computer before playing. The digital files were created more than eight years ago, so the sound quality could be improved and the information about

equipment and digitization method has been lost. The analog tapes will be re-digitized and optimized using current technologies.

Between 2001 and 2005, the Center utilized the skills of their part time webmaster and other staff members to create several online exhibitions and presentations (*T. Harry Williams Center for Oral History Exhibits and Presentations*, 2009) using readily available software and tools: simple HTML, PowerPoint, and Windows Movie Maker. Notable among these is the digital exhibition, “Baton Rouge Bus Boycott of 1953. A Recaptured Past” (2009) which includes a background and chronology of the event complete with photographs and audio excerpts. “Leaving Vietnam” is a nine minute presentation of audio clips from the Americans in Vietnam collection, featuring stories of escape from three Vietnamese refugees who immigrated to Louisiana around 1975 while fleeing Communist takeover. The presentation debuted at the 2005 Oral History Association annual conference and is currently available on YouTube, where it has been viewed over 6,000 times. Two other presentations were also mounted on YouTube to provide ease of access.

Center staff also began digitizing oral history transcriptions that were only available in paper format in 2004. They had some success using a HP Scanjet 5590 document feed scanner and an early version of Readiris optical character recognition (OCR) software. The software was lost, and the Libraries Systems department replaced it with Readiris Pro 11. Subsequent digitization efforts have been stymied by problems getting good readable OCR text, so the project has been put on hold. Student workers often are tasked with re-keying transcriptions.

In 2007 the Center Director, with the help of the LSU Libraries Special Collections Exhibitions Coordinator, curated a physical exhibition called “Have you Heard?: The Past in First Person from the T. Harry Williams Center for Oral History”. The extensive exhibition contained ephemera and narrative relating to more than a dozen oral history collections. The Libraries provided two “listening stations”, computers loaded with web-based presentations in the exhibit hall. In addition, exhibit-goers could check out MP3 players with pre-

recorded narration of the exhibition contents and snippets of oral history interviews. These digital offerings were made available with little cost using spare computers and a staff member as the voice of the narrator. No previous Libraries exhibition had employed technology in these ways. The Center Director counts the exhibition a success, as it led to a few collection development opportunities and awareness of the Center and its mission.

Digitization Station

After attending a digitization workshop at the Oral History Association annual conference in 2006, the Center Director decided that the systematic digitization of at risk and high demand analog collections should become a central focus for the Center. With the idea of “going digital” but with little research in hand they initially purchased two standalone analog to digital Lucid AD9624 converters, which are designed to work in a recording studio setting. They realized belatedly that the converter units themselves were not useful without a digitization station, which would cost several thousand dollars. The Center made the all too common mistake of purchasing equipment without a clear plan how the individual hardware or software will interface with existing equipment. Fortunately they were able to later purchase a digitization system that uses one of the Lucid converters.

In order to ensure that in the future the Center made sound investments in technology and established a digitization workflow appropriate to their needs, the Director sought advice from oral history expert Doug Boyd at the University of Kentucky. Dr. Boyd visited LSU in March 2007 to evaluate the Center and conduct an introductory digital audio workshop for the Libraries staff. He generated a seven-page report with recommendations for equipment, collection development, and staffing.

Recommended Analog to digital work station equipment and software

1. Lucid AD9624 A/D Converter
2. RME Hammerfall DSP 9632 PCI Audio interface
3. 2 Yamaha HS50M 5" Active Monitor

4. 1 Tascam 202MKIII Dual Recorder Cassette Deck
5. 4 BP20 20' TRS - TRS Cable
6. 8 DKQR10 10' Dual RCA - TS Cable
7. 1 Furman PL8II 15 Amp Power Conductor w/Light
8. 1 DT770pro Closed Studio Mon Headphone
9. 1 Presonus Cent. Station Audio Control Center
10. 1 Plextor PX-716UF External CD-R/DVD+-RW
11. Sony Sound Forge 8.0 Audio Editing Software
12. Sony Noise Reduction 2.0 Noise Reduction Plug-In

The equipment recommended in the report was purchased with endowment funds nearly a year after Boyd's initial visit. Boyd returned to the Center to help set up the equipment and train a newly hired staff member.

Although not all institutions have the funds to hire a consultant, this less than \$2,000 expenditure has proved money well spent for the Center. Without the vetting of the digitization program, the listed recommendations for equipment, and Boyd's encouragement to pursue positioning the Center as a leader in digitization efforts in the state and the profession, the Libraries administration might not have acted so quickly to support the endeavor. The administration approved reallocating funds to hire a full time staff member for the digitization and in less than two years, the Center has been able to digitize over 700 hours of interviews with their single digitization station.

With the addition of a dedicated digitization station and full time staff member to manage the process, the Center was ready to begin digitizing in earnest. It was immediately apparent, though, that server space and file redundancy would be an issue. The average file size of one hour of digitized uncompressed audio from analog tape is around 1.5 Gigabytes (GB). The Center only had access to a relatively small 74GB drive when digitization began.

Working with the Digital Services Librarian and the Libraries Systems Administrator, the Center temporarily located all digital audio files to a 5TB networked server that primarily serves as storage for TIFF images. In late 2009, a regional corporation donated used

storage equipment to the Libraries. The Libraries' Systems Administrator was able to configure four 2TB Raid 5 storage arrays, totaling approximately 8TB, for the Center's long term storage. This unexpected gift enabled the Center to continue digitization efforts, although they will still have to be selective.

The Center exists not just to archive, but to conduct research-based oral history interviews and to educate the community about conducting interviews. To fulfill this mission, the Center keeps a stock of digital audio field recorders to loan for oral history projects. As noted earlier, this equipment is purchased with endowment funds. The Center currently has four Edirol R-09 recorders, two Marantz CDR 310 recorders, and five Zoom H2 Handy recorders for loan. Center staff uses a Marantz PMD 661 for interviews.

The Edirol R-09 and Marantz CDR 310 are portable CD recorders and the Zoom H2 Handy records employ flash memory. Individuals borrowing the equipment are trained and instructed on its use. Digitally recorded interviews are brought to the Center either on CD or on secure digital (SD) flash memory cards. Interviews are saved to the Center's server and eventually processed.

Digitization Workflow

The digitization process is handled by one staff member, although he has recently trained a student worker to help run the digitization station. The staff member samples the audio to determine the optimal hardware and software settings and reformats the analog tape to a lossless uncompressed digital master WAV file. This master file is captured at a bit depth of 24 and a sample rate of 96 kHz in stereo.

The master WAV file is stored on a networked server, which is routinely backed up to a tape drive. This "master file" is not altered after the initial digitization process. Whenever possible, barring any time or funding constraints, a copy of every collection is also stored on an external hard drive as well as burned onto a gold archival CD.

The staff member then creates an optimized file from the master WAV file. Using Sound Forge software, he improves the signal strength and removes distortion from the audio. The optimized file is

saved as a WAV file to a different location on the server. He then generates a compressed MP3 file from the optimized file. This MP3 file is the use copy, and it is also saved to the server.

Unprocessed collections are digitized prior to processing to facilitate time stamping of the transcriptions. The Center uses Express Scribe Transcription Playback Software (<http://www.nch.com.au/scribe/>) and adds time stamps to the transcriptions based on the actual run time. Old transcriptions will be re-audited and time stamps added because the tape time stamps are arbitrary, often reset every time the tape player is used.

Metadata for the entire collection is kept in a Microsoft Access Database. All oral histories entering the center are processed based on a 13 page processing checklist. The processing checklist steps include 1) Accession 2) Transcribe 3) Audit 4) Send to Interviewee 5) Edit. This process is time-tested and thorough. The majority of the oral history collection is cataloged according to AACR2 standards in MARC format in the LSU Libraries online catalog (i.e., OPAC). The Dublin Core metadata in the digital collections is often copied directly from these catalog records.

Implementation and Access

The Center does not currently have a formal collection development policy to determine which oral histories are digitized. The interviews that have been digitized thus far were identified as “high risk” on unstable medium or they were considered to be of particular interest to researchers and the public. Materials are also digitized “on demand” for patrons for a fee.

Tapes that were created prior to the Center opening in 1991 and later donated were assessed for deterioration and digitized as a means of preservation. For example, the 60 interviews in the Americans in Vietnam series, recorded between 1974-1977, were identified as at risk and were prioritized for digitization. Because of the content of the interviews, however, the digitized audio will not be offered via the LDL. In this situation, preservation of the materials outweighed the need to provide access.

Particular interviews and/or series of interviews, such as the Hurricane Betsy Series or the McKinley High School Series, were digitized because of their potential value to researchers and the general public. These collections will be uploaded to the LDL as soon as they are fully processed. Patron requested interviews that were digitized on demand for a fee are also candidates for the LDL.

During the past two years the Center staff and Digital Services Librarian have discussed workflows for uploading audio to the LDL. They consulted collections mounted by the University of Louisville (<http://digital.library.louisville.edu/>), Ball State University (<http://libx.bsu.edu/>), University of Nevada, Las Vegas (<http://digital.library.unlv.edu/>), and the University of California, San Diego (<http://ceo.ucsd.edu/index.html>) to facilitate decision making about the organization and display of online oral history materials.

The LSU Libraries serves all digital library materials via the Louisiana Digital Library, which was developed at the start of this decade by LSU Libraries and the LOUIS Library Consortium. LOUIS staff maintains the LDL for the nineteen participating institutions, including historical societies, libraries and museums. Individual institutions add content to the LDL and all materials are available for public use. The digital library is powered by CONTENTdm software and hosted by OCLC. LOUIS staff assists LDL institutions with customization of the software. LSU Libraries Special Collections maintains over 35 collections in the LDL.

Adding audio collections to the LDL has been a slow process that seems to move in fits and starts. Center staff and the Digital Services Librarian have held many meetings and exchanged numerous emails about serving digitized oral histories online. Debate about the topic centered around how the interviews would be organized and displayed. Many interviews, especially the life narratives, are topically related even though they are in different series. For example, university history overlaps with civil rights history in several interviews. Organizing the interviews both topically and by series can be achieved by using CONTENTdm custom queries to unite items from different digital collections, although this method does require

staff to re-create the collection custom queries and topics or series are added.

The CONTENTdm software seems more suited for its original purpose to serve digital images, and the default treatment of audio files is rather clunky. Audio does not play automatically, but instead the text “Access this item” appears at the top of the screen and metadata for the item below it. This presentation of the audio is somewhat confusing, because it is not even immediately clear that it is an audio file. Some institutions using CONTENTdm have devised workarounds that make serving audio in the software more usable.

In order to better group interviews together with the transcriptions and other related content, the Digital Services Librarian began uploading files as “compound objects” or multi-part files in CONTENTdm. Figure 2 illustrates this with the different files, abstract, transcription, and audio, hyperlinked in the left column. This display is not ideal since the metadata for the interview is on a separate screen and the “Access this item” text is still present. In addition to the cumbersome nature of the audio display, patrons wishing to listen to it are forced to download the often very large file to their computer. The Director felt strongly that other options not requiring the patron to download the audio be explored. Copyright would be difficult to manage if the audio was copied to different computers.

After reading about Ball State University development of a user-friendly embedded Windows Media Player above the PDF file within CONTENTdm (Hurford & Read, 2008), the Digital Services Librarian contacted LOUIS about implementing this method. LOUIS staff worked with the LSU Information Technology Services (ITS) department to obtain access to a streaming server from which the audio could be served. MP3 files are uploaded to the server via FTP software and the file path is linked to the item in CONTENTdm in the metadata field “Stream File”.

The embedded player facilitates ease of use by providing the searchable PDF transcription to the patron as they listen to the audio. It does not require listeners to download the audio, thus it better

protects the copyright of the files. Information about copyright is included in the metadata for each item and future transcriptions may be watermarked with a copyright statement.

To organize the oral history collections in the LDL, the Digital Services Librarian used the “collection of collections” model that CONTENTdm employs to organize user collections on their website (<http://www.oclc.org/contentdm/collections/default.htm>). The individual series or collections are cataloged as a whole in the overall Center LDL collection. The series are represented by an image and selecting that image displays metadata taking the patron to the interviews. CONTENTdm software allows the creation of custom queries that will link the different collections and enable patrons to search across them. The individual series can be added to and the interviews and other materials in the collections will remain together, searchable alphabetically by title.

Problems and Some Solutions

Every digitization endeavor has its problems, but it is the individual institution’s staffing, resources, and prior experiences that dictate the solutions. The Center, although small, is supported by a large university library. Digitization is a luxury that can be afforded because the Center has endowment money to purchase equipment and to provide staff with continuing education in the field. The time it takes to digitize resources is not a major factor in the continuation of digitization either because digitization is accepted as a part of the overall processing workflow. Digitization at the Center will be funded indefinitely and a full time employee will be dedicated to the effort if at all possible.

The Center is now two years into their programmatic digitization effort. At this point the digitization workflow has been well established and interviews from a few collections have been uploaded to the LDL. This section of the paper details problems encountered, such as legacy digitized collections, prioritizing digitization efforts, storage solutions, staffing, and digital access and display via CONTENTdm software, and how the Center staff and the Digital Services Librarian resolved or

did not solve them. Many problems could have been mitigated with more long-term planning, but the degree to which digitization efforts are currently supported and the ramifications of beginning a digitization program were not known at the start of these efforts.

The Center holds some legacy digital collections that do not meet the current standards for digitization. Prior to acquiring the digitization station and hiring an audio technician, Center staff did some preliminary digitization of analog tape using an external cassette tape deck connected to a computer. The sound was collected using a low end sound card to ram (Real Media Player) format in a process like the one that Washington State University Libraries used for their African-American Oral History collections (Bond, 2004). These early recordings were deemed important enough to place in the queue to be re-digitized according to the Center's current standards. For practical purposes, an institution may choose to keep legacy digitized items even if they do not meet current standards because the cost to re-digitize is high. For the Center the lessons learned with early experiments in digitization were important in shaping the future decisions to allocate more funds and staff to the digitization efforts in order to produce better quality sound.

The Center's at risk materials were digitized first, however, some of these materials are not good candidates for online access. The files will need to be stored long term, but because of restrictions they will be largely inaccessible. This falls within the mission of the Center, which includes collecting in addition to providing access to oral histories. Some audio files do not have completed transcriptions, rendered them unacceptable for immediate uploading to the LDL. The interview editing process is very time consuming and there is little immediate results (Bond and Walpole, 2006). Digitization priorities may differ depending on the institutional mission. If the mission is to provide access and preservation is secondary, then more popular or relevant collections should be digitized first. Institutions not supported by a parent institution, such as the Center is by LSU Libraries Special Collections, may not have the luxury to digitize collections just to archive them.

Another ongoing issue is long term storage solutions for the digitized files. The Center hoped to have files saved in at least three different places, a dedicated server in the main library, CD, and offsite storage. Some files are saved to an external hard drive in addition to the networked server, and born digital audio is saved to Gold CD. Ideally a copy of each master WAV file would be stored in offsite storage in a similar set up to the University of Kentucky (Weig, Terry & Lybarger, 2007), but this has not been implemented. The Libraries' server on which all audio files are saved is backed up incrementally to magnetic tape every night. Full backups take 40-120 hours because of the amount of data contained on the servers, so they are conducted once monthly. It is a secure system, but there is always a chance for failure. Future plans call for the Center to assess file storage and redundancy options.

The document "Sound Directions: Best practices for digital audio preservation" provides recommendations for long term preservation storage (Casey & Gordon, 2007), however many recommendations may not be feasible for small centers. The authors emphasize that file redundancy which is neither labor-intensive nor costly in media (e.g., CD or flash memory), should always be implemented. The majority of institutions will likely not have multiple terabyte servers and staff to keep them running, but files can at the very least be backed up to a more affordable storage medium such as portable hard drive or CD. Any storage medium can fail, however, so careful attention to this matter is imperative if an institution is interested in long term storage of files.

An issue that may require further review and assessment is the current standard of capturing audio at the higher sample rate of 24 bit 96 kHz. As server space fills and the Center and Libraries' budgets decrease, however, this standard may be reduced. Capturing audio at 16 bit 44.1 kHz reduces the file size by nearly half, and according to some experts it does not substantially decrease the quality of the WAV file (Weig, Terry & Lybarger, 2007). If the server is filled the Center may elect to save the derivative optimized WAV file to CD rather than the server. File optimization is time consuming, often taking the

length of the recording to complete, so deleting these files is not an option.

Before embarking on a digitization project, an institution should estimate the number of files that will be created and storage space needed. An institution may choose to capture audio at a lower and still acceptable rate to expedite the digitization process and conserve storage space. The institution should conduct an assessment of whether file optimization and multiple WAV files are needed before creating additional files that must be saved over the long term. Any derivative files can be recreated, so they should always be deleted or copied to more affordable storage media if server space is at a premium.

Another issue related to the audio capture standards is the Center's lack of written standards and best practices. Workflow principles and digitization methods are generally adhered to, but there is no guide or manual, just institutional knowledge. The workflow is based on recommendations by oral history expert Doug Boyd, who served as an advisor to the Center and also wrote the tutorials and information found on the Oral History Association website (<http://www.oralhistory.org/technology/>). The Center should apply the same level of detail and documentation to digitization workflow as they have for the processing workflow.

There are only two staff members who work with the Center's digital files, which could pose potential problems if either leave and has often caused bottlenecks in the workflow. At the Center all digitization is handled by one staff member with some student support. Other Center staff members do not have time to perform these duties, so little cross-training has been done. This is a risk because if the staff person leaves it will be difficult to continue digitization efforts. In the same vein, only the Digital Services Librarian currently uploads items to the LDL. This duty is usually shared by graduate assistants, but financial constraints have prevented hiring any additional help. Digitized files often do not get uploaded quickly because they are placed in a queue with all Special Collections digital materials. Cross-training between the digital

technician and Librarian is an option that should perhaps be explored. At the very least the two individuals, who are separated geographically across campus should establish better communication and more effective workflows. Information about which collections are ready to be uploaded to the LDL is sent ad hoc via email and there is no current mechanism for tracking the LDL files via the Accession database. Institutions should establish a clear workflow and assign responsibility for different aspects of the digitization process early on in a project. This will alleviate any potential miscommunication or turf war situation.

Before purchasing equipment and hiring staff to digitize audio, an institution should assess the environment where they will be located. At the Center the digitization station is equipped with the right hardware and software, but its location is less than ideal. The Center is located in an 80 year old house that is poorly insulated. The room in which digitization takes place is in the center of the house next to the building air handlers. The sound technician must use headphones while optimizing audio. If the Center is relocated much thought will be put into the location of the digitization station. In addition, Dr. Boyd recommended the Center purchase two digitization stations. When funding is available, the Center will explore this option.

A very important aspect of digitization efforts is providing access. The Center works with the Digital Services Librarian to upload items to the LDL, which uses CONTENTdm software. The software is less than perfect in its treatment of audio files, and efforts to retrofit the software to better serve audio are time consuming dependent on LOUIS staff expertise. LOUIS controls server access so software customization must go through them. The Center benefits from being a part of this consortium environment where an infrastructure is in place and support is offered at all times, but there are some constraints that this relationship brings. Small or not well-funded institutions interested in mounting collections online may be better served entering into a partnership with a larger institution or consortium.

An issue specific to the retrofitting of the software potentially affects patron access and sustainability. The embedded audio player that LOUIS retrofit for audio display does not display a time stamp so patrons cannot skip to a specific section of the interview. The audio player works well in the most current version of CONTENTdm, but the software is scheduled to be upgraded soon. Changes may affect the workflow and change the player functionality. The Center will rely on LOUIS consortium staff to recreate the embedded player in the upgraded software. Some institutions may not be able to expend a great deal of staff time continually addressing the interface when the software is upgraded, so this should be considered when addressing the sustainable access points.

In many ways the process for adding audio collections to the LDL has just begun. In 2008 all processed oral history collections which had been on a cataloging backlog were cataloged in the Libraries OPAC and WorldCat, which facilitates the metadata creation of records in the LDL. Changes in the CONTENTdm software in the past few years have made it more customizable. In 2009 the Center staff began producing audio and video podcasts with images and sound from the collections. The podcasts and information about them are available on the Center's blog (<http://oralhistory.blogs.lib.lsu.edu/>). In order to maximize the amount of digitized materials that are available online, key players should outline a digital access plan wherein all materials that are currently ready for public display are listed and other materials are prioritized.

Conclusion

The T. Harry Williams Center for Oral History began a digitization program a little more than two years ago. Since then the Center has acquired digitization hardware and software, hired a full time staff member to perform digitization duties, and mounted several collections to the Louisiana Digital Library. By all accounts, the Center's efforts have been successful, although they hope to develop more sound workflows for digital access to enable them to add additional interviews to the online collections in the future.

Institutions wishing to emulate the Center should consult experts in person or through the literature, follow industry standards set forth by the Oral History Association (<http://www.oralhistory.org>), and, formulate plans based on best practices such as the CDP Digital Audio Working Group Digital Audio Best Practices (<http://www.bcr.org/dps/cdp/best/digital-audio-bp.pdf>). It is essential to plan ahead for storage space needs, keeping in mind that what one thinks you'll need is probably less than the reality.

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