

**The Magnetic Media Crisis:**

The majority of our cultural heritage memories and stories are still on magnetic media or tape and have often been stored in conditions not designed to ensure their stability and preservation. Existing media collections are in the hands of individuals or organizations with limited resources to properly store, maintain or even catalog their recordings.

Multiple generations of artistic work are in imminent danger of being lost. These magnetic recordings deteriorate over time and after decades of neglect can be rendered unplayable. Adding to the crisis, the required media playback equipment, videotape and videocassette players are becoming obsolete and almost impossible to repair and maintain.

**What's the Role of an Archive Producer?**

The Media Archive producer helps define your overall project objectives and helps guide you through the media preservation process.

What are your archive project's goals and objectives? Are you interested in developing a comprehensive media archive structure that defines content descriptions and technical metadata for each asset or are you just trying to swap a random box of tapes for a hard drive file folder with random data files?

Are you considering multiple digitization standards delivering both a "master archive preservation format" of the highest possible quality and a smaller file size for a more compressed resolution for an "access distribution file"? Is your ability to complete the metadata steps dependent upon viewing the media after the content is digitized? Any pre-conversion media playback will impact the quality and potentially damage the recorded media. In addition to the pre-conversion visual inventory that captures the media asset status and condition, tape case and label information, an additional descriptive metadata step can be re-engaged after digital conversion, to add more content descriptions.

**What's the biggest obstacle in digital converting video to media files?**

The videotape medium, whether open reel or videocassette, is subject to deterioration. Collection integrity can be based on the storage environment, dust, temperature ranges, humidity levels, magnetic interference and recent playback activity. Often videotapes can also contain mold. However, the most prevalent issue with "damaged media" is the separation of the metal oxide (recording medium-dull side) from the acetate binder (shiny side of the tape). This is called "Sticky Shed Syndrome" caused by moisture retention and can be stabilized through de-hydrolysis, a dehydration or tape baking process.

**Sharing media with your audience:**

Based on your preservation goals, what are you planning to do with the new digital files and how are you going to share them? These plans should include a lossless file codec for the master preservation copy and subsequent smaller compressed format for possible sharing or posting for streaming media. "Just making me a Video DVD" (a potential obsolete medium and also compressed Mpeg 2 format) request may not provide the best preservation quality. A better approach is to request your files be converted to preservation high quality masters with lower quality access versions copied to a data disc, Stick or thumb drive, portable hard drive, or posted on a file-sharing site.

**Definition of Media Archiving:**

*"Archiving is not just the media digitization, but the planning and organization process that precedes it and the distribution or sharing plans that follow it."*

**What are the steps involved in preserving my media collection?**

Here are eight suggested steps..

**1- Archive Organization and Collection assessment**

**Identification:** What media types and formats are included in the archive collection? Is their existing visible damage or deterioration? Is the media playable? Can you easily separate early generation masters from their distribution copies?

**Description and Cataloging:** Do you know the media asset's information; title, contents, location, production dates and significance of the content? Can you provide a contextualized description from the label or program notes? Once you complete the inventory process, you can then start to develop your "preservation plan". This plan forms the foundation for our next steps.

**Storage:** The two steps of preservation involve safe storage of original analog content and transferring or digitizing to a new digital format with storage in mind. A safe storage environment is critical for both steps. Digital conversion allows for multiple copies or back-ups, with options including Hard Disk Drives, The Cloud, (someone else's hard drives) and Linear Tape (LTO) cartridges, (Hardware dependent). Storage concerns should continue beyond the transfer process. Will you trash the original media or continue storing it safely? How and where will the new media files be stored?

**2. Developing your preservation plan and defining your desired outcomes for sharing.**

Who is my audience and what channels or methods can I leverage to reach them? Define your media conversion specifications to reach these audiences. Good Preservation guidelines require you to capture your media at the highest possible quality and resolution to match the source materials. Preservation Masters are large high-quality .mov files while Access masters for sharing are smaller and more compressed .mp4 files.

**3. Determining your available resources.** Do I have the skillset and available resources to attempt a Do it Yourself approach. Digital migration requires both functional media playback equipment and the knowledge to keep it operating. Most conversion systems also include a computer interface to create the new digital files and store them.

**4. Identifying and resolving any media playback issues.** Good problem solving skills are also required to assess and provide solutions when encountering problems during media transfer. De-Hydrolysis (dehydrate) to reduce absorbed moisture in the tape substrate caused by high humidity, evaluate any cassette shell damage and repair or replace and build confidence in your content summary as documented in your visual inventory spreadsheet. You might find it more efficient and often better quality to outsource your media conversion to a qualified vendor resource.

**5. Define prioritization criteria for the media conversion process.** Based on your collection assessment, quantities, formats and media conditions, what tapes should be converted first? How will you make that assessment?

**6. Media Conversion DIY or Outsource:** Essentially this means that you are moving your content from the obsolete tape formats to a new digital medium where you'll have the best future playback success. Most projects suggest a dual format process; a Master File and separate Access File will be created with different resolutions, files sizes and storage requirements.

**7- Post conversion actions:** Checking your media over time: It's highly recommended to inspect and play your media both immediately upon transfer for quality control purposes as well as over time, to ensure stable storage. Content matching: confirming descriptive metadata generated from labels against actual content and length on new digital files.

**8- Media Distribution beyond archive.** Once again, as part of your project goals, are you considering sharing or distributing your content to others? This is where your distribution vs. archive format comes into focus. This also gets into content ownership and copyright issues. Do you own or have the rights to distribute this content, even on a no fee basis? *(Copyright ownership documentation may also impact a producer's ability to get tapes professionally transferred. Duplication and Transfer facilities want to protect themselves, so they often require "proof of content ownership" before the transfer process is started, often with a blanket statement that they will not transfer any commercial copyrighted materials.)*

## **What is "Metadata" and why should I care?**

Metadata ensures that you will be able find data, use data, and preserve and re-use data in the future. Metadata makes it much easier to find relevant data and content of your new digital files. Metadata also makes digital media assets easier to find because it explains exactly what the asset is about. There are three main types of metadata: descriptive, administrative and technical. For example, a visual inventory of your media collection may include; unique asset ID number, data points on the video content, who, what, why, when, along with the running time or sequence number.

Often the video case or cassette label information is transcribed or photographed. Condition of the analog media asset itself is noted, the manufacturer, integrity and any visual damage. Once converted, these unique asset numbers become the new file names along with descriptors to ID the video resolution or quality. Metadata can also be embedded back into the file for future readability and search purposes.

## **Is Media Preservation Costly?**

What is the value of the history, memories or cultural heritage assets you are planning to preserve?

I highly recommend a visual inventory process to better define your collection's status and identify critical metadata information. If you just want to transfer "found tapes", there are some low-cost national vendors that can transfer "consumer home movies as is" for under \$25 per tape.

However, the better approach is to use professional resources to address the important tape preparation process to prevent "sticky shed or transport" or "tape damage" playback issues. \$50-125 per tape. There are also resources to convert some of the legacy formats from the early 1970s, open reel EIAJ 1/2" and 1" Type C videotapes and 3/4" U-matic video cassettes \$150-\$250 per tape. In addition to conversion costs, you should also budget costs for storage hard drives, shipping and handling.

In most cases, you should still complete a visual inventory of your analog media assets. This "collection care" step will provide the scope and asset quantities you will need for gathering digital conversion estimates. Remember the better organized you are in this initial step, the greater organizational benefits you will see throughout the preservation process.

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