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# Digital Asset Management and Audiovisual Preservation: Will We Be Glad We Did This in Ten Years?

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## **Digital Asset Management and Audiovisual Preservation: Will We Be Glad We Did This in Ten Years?**

*By Bert Lyons*

Audiovisual resources are technological by nature. Most carriers (with few exceptions) require machines to encode and to decode the information. As technology advances, so, too, do the complexities of audiovisual resources management. Because of the increased (and now almost exclusive) nature of audiovisuals as digital objects, archivists charged with preserving and maintaining information in the audiovisual realm must be in tune with digital management in order to succeed in providing long-term care to audiovisual collections.<sup>1</sup>

Archives that manage audiovisual materials need systems and protocols to classify digital objects; to differentiate between versions of digital objects; to track preservation needs for digital objects; and to identify, discover, retrieve, disseminate, and update digital objects. As archivists, we have great tools for managing these tasks in the physical world with physical collections. We also have tools for digitally managing physical collections. However, we are just now building and acquiring the tools and the resources to manage digital objects in a digital world.<sup>2</sup>

The contemporary archivist knows that creating a digital object through a process of digitization is only one method through which digital content comes into being. Increasingly, many documents have no corresponding analog versions and exist only as born-digital items. An effective digital preservation program will handle files created through a digitization workflow as well as items that are born digital.

Digital preservation is a group of managed activities necessary for ensuring both the long-term maintenance of a digital file and continued accessibility of its content. It is not the equivalent of backing up digital data, but comprises specific policies, strategies, and actions.<sup>3</sup> It is the sum of all of the efforts necessary to create, select, collect, arrange, describe, store, provide access, and secure digital content into an indefinite future.

The preservation of digital content is one of the main purposes of digital asset management, known commonly by its initials, DAM. This way of approaching digital assets has been pioneered most notably by the broadcast industry, specifically the Public Broadcasting System.<sup>4</sup> While there are many possible definitions of a digital asset, most simply

it is any form of information that is or has been encoded into a binary format and that is valued for some purpose by a repository.<sup>5</sup> If an archives is in custody of a digital asset and is responsible for it, that archives will need to know where it will reside, how it will be stored, what it will be called, and what the long-term preservation plans for it are. DAM is the process of providing solutions for such needs.<sup>6</sup>

This article will not review DAM software systems, but will outline the component parts of a DAM system as a form of digital collections management and, therefore, as a means of preserving digital assets. Much has been written and published on these topics in the past few years.<sup>7</sup> Following are overviews of each component with links to related sources and tools.

### **Defining Digital Objects**

For audiovisual archivists, digital audio and video objects are the core assets with which DAM is concerned. There is not a perfect file format or compression scheme for either audio or video objects.<sup>8</sup> An institution needs to specify its target and keeper formats, document those choices, and be consistent.<sup>9</sup> Each digital object will require a unique identifier, and decisions need to be made about how to manage metadata associated with the object.

### **Metadata**

“Metadata” is a generic term that refers to information that can be kept about a digital object to define its identity, management, characteristics, and provenance. Whether embedded in or appended to an object, metadata supports the discovery, use, storage, and migration of digital objects over time. Types of metadata include descriptive, technical, administrative, rights management, and preservation. It is important to be aware of resource description formats,<sup>10</sup> digital library standards,<sup>11</sup> content standards,<sup>12</sup> and authorities,<sup>13</sup> as well as format-specific technical standards.<sup>14</sup> An institution must make selections locally regarding standards and should base decisions on applicable standards that promote long-term interoperability and functionality.<sup>15</sup> Again, consistency of application is vital.

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### **Storage**

Most long-term management schemes for digital assets include specifications for digital storage on either networked hard drives or digital tape.<sup>16</sup> All storage solutions need to be backed up properly. Also, storage hardware will need continual updates and replacement as technologies change. The failure of any storage device or carrier could mean the loss of anything from a single asset to an entire collection. In the absence of automated software for managing digital assets, keeping an up-to-date inventory, just as one would with any physical collection, is a wise practice.

### **Access and Delivery**

A DAM system requires intermediary solutions to make connections between stored digital assets and their associated metadata. Whether or not digital audiovisual assets can be presented to the public on-line, archives still need simple access to digital assets for at least administrative purposes.

### **Preservation Planning**

Preservation planning is the equivalent of both technology monitoring and a continued administrative commitment to the maintenance of digital files, software tools, and hardware.<sup>17</sup> Depending on the sustainability of file formats and compression schema, digital files may need reformatting or migration. Hardware for storing digital files will need to be refreshed or upgraded as technology advances. Storage capacity will need to be expanded as both holdings and file sizes grow.

### **Policy Development and Updates**

Sustainability in any digital asset management program comes from policies and procedures that are well documented and applied consistently across collections. All questions regarding digital audiovisuals can be addressed at the policy level, and changes can be applied generally across all objects in the collection. It is important to document institution-wide digital plans and policies in order to guide growth and development of audiovisual assets.<sup>18</sup>

### **Physical and Digital Collections Integration**

One final, often overlooked aspect of DAM in archival repositories is the need to secure strong connections between digital collections and physical collections. Some relationships between physical and digital materials may be derivative relationships; others may be intellectual or contextual relationships, especially when hybrid collections with both physical items and born-digital items are acquired. With audiovisuals, content and associated docu-

mentation, such as a script or record label, are common examples. Clearly defining relationships between digital assets and physical collections is a valuable cornerstone to any archival program.

### **Conclusion**

Digitization by itself is only one part of the digital package, and can represent a kind of roadblock beyond which many of us may be hesitant to proceed, especially when confronted with the complexities of audiovisuals both digitally reformatted and born digital. DAM and digital preservation constitute the remainder of the package. Together, these policies, strategies, and activities are spelled out in a system that incorporates both the traditional archival practices and processes—their creation, selection, collection, arrangement, description, storage, access, and security—and a deliberate preservation of archival resources in digital form. Digital audiovisual assets require new tools and methods to accomplish these familiar roles. Ten years from now, will we be glad we did it? You bet!

### **Selected Resources**

- Austerberry, David. *Digital Asset Management*, 2nd ed. Burlington, Mass.: Focal Press, 2006.
- Blue Ribbon Task Force on Sustainable Digital Preservation and Access. <http://brtf.sdsc.edu/> (accessed May 13, 2010).
- Digital Preservation at the Library of Congress. <http://www.digitalpreservation.gov/> (accessed May 13, 2010).
- Krogh, Peter. *The DAM Book: Digital Asset Management for Photographers*. Sebastopol, Calif.: O'Reilly, 2005.
- Mauthe, Andreas, and Peter Thomas. *Professional Content Management Systems: Handling Digital Media Assets*. Chichester: John Wiley & Sons, 2004.
- Spiro, Lisa. "Archival Management Software—A Report for the Council on Library and Information Resources," January 2009, [http://www.clir.org/pubs/reports/spiro/spiro\\_Jan13.pdf](http://www.clir.org/pubs/reports/spiro/spiro_Jan13.pdf) (accessed May 13, 2010).
- Sustainable Economics for a Digital Planet: Ensuring Long-term Access to Digital Information*. [http://brtf.sdsc.edu/biblio/BRTF\\_Final\\_Report.pdf](http://brtf.sdsc.edu/biblio/BRTF_Final_Report.pdf) (accessed May 13, 2010).

Notes

1. Technology affects digital content management in differing capacities at every level: object, collection, repository, platform, organization, standards, external dependencies, and staff competencies.
2. There is, however, a long history of the idea of digital preservation. It is not a new concept, nor a new problem. The core documents that defined and provided a foundation for the development of the digital preservation community are “Preserving Digital Information,” May 1996, <http://www.clir.org/pubs/reports/pub63watersgarrett.pdf>; “Trusted Digital Repositories: Attributes and Responsibilities,” May 2002, <http://www.oclc.org/research/activities/past/rlg/trustedrep/repositories.pdf>; and “Open Archival Information System Reference Model,” January 2002, <http://public.ccsds.org/publications/archive/650x0b1.pdf>.
3. Robin L. Dale, “Tools and Services for Preserving Digital Objects,” presentation at Stewardship of Digital Assets Workshop, Library of Congress, October 27–28, 2009.
4. See, for instance, the development of PB Core, a metadata and management schema for audiovisual broadcast materials, <http://pbcore.org/2.0/>.
5. A. J. van Niekerk, “The Strategic Management of Media Assets; A Methodological Approach,” Allied Academies, New Orleans Congress, 2006. See also Richard Pierce-Moses, “What Is a Digital Asset?” [http://www.lib.az.us/diggovt/documents/pdf/NEDCC\\_DigitalAsset\\_2006.pdf](http://www.lib.az.us/diggovt/documents/pdf/NEDCC_DigitalAsset_2006.pdf).
6. Although there is a strong relationship between descriptive cataloging and DAM, DAM encompasses more.
7. For example, Priscilla Caplan, “The Preservation of Digital Materials,” *Library Technology Reports* 44, no. 2 (2008); Katherine Skinner and Martin Halbert, eds., *Strategies for Sustaining Digital Libraries* (Atlanta: Emory University, 2008); Stijn Hoorens, Jeff Rothenberg, Constantijn van Orange, Martijn van der Mandele, and Ruth Levitt, *Addressing the Uncertain Future of Preserving the Past: Towards a Robust Strategy for Digital Archiving and Preservation* (Santa Monica, Calif.: Rand Corporation, 2007), [http://www.rand.org/pubs/technical\\_reports/2007/RAND\\_TR510.pdf](http://www.rand.org/pubs/technical_reports/2007/RAND_TR510.pdf).
8. Chris Lacinak, *A Primer on Codecs for Moving Image and Sound Archives*, April 2010, [http://www.avpreserve.com/wp-content/uploads/2010/04/AVPS\\_Codec\\_Primer.pdf](http://www.avpreserve.com/wp-content/uploads/2010/04/AVPS_Codec_Primer.pdf).
9. For an exploration of sustainable audiovisual formats, see <http://www.digitizationguidelines.gov/formats.html>.
10. Encoded Archival Description (EAD), <http://www.loc.gov/ead/>; MARC, <http://www.loc.gov/marc/>; Metadata Object Description Standard (MODS), <http://www.loc.gov/standards/mods/>.
11. Metadata Encoding and Transmission Standard (METS), NISO Metadata for Images in XML Schema (MIX), Preservation Metadata Implementation Standard (PREMIS), Technical Metadata for Text (textMD), <http://www.loc.gov/standards/>.
12. Describing Archives: A Content Standard (DACS), <http://www.archivists.org/governance/standards/dacs.asp>; Resource Description & Access (RDA), <http://www.rda-jsc.org/rda.html>.
13. Library of Congress Authorities, <http://authorities.loc.gov/>; International Organization for Standardization, <http://www.iso.org/iso/home.html>.
14. Extensible Metadata Platform (XMP), <http://www.adobe.com/products/xmp/>; Tagged Image File Format (TIFF) fields, <http://partners.adobe.com/public/developer/en/tiff/TIFF6.pdf>; Broadcast Wave Format (BWF) Bext Chunk fields, <http://tech.ebu.ch/docs/tech/tech3285.pdf>.
15. Robin L. Dale, “There’s a Standard for Every Occasion: Understanding When to Look at Digital Preservation Standards,” presentation at Stewardship of Digital Assets Workshop, Library of Congress, October 27–28, 2009.
16. An overview of storage hardware, <http://www.dpbestflow.org/node/387>.
17. Any digital preservation program will consist necessarily of technology monitoring—a holistic and collaborative approach to assessing, forecasting, managing, preparing for, and adapting to technological shifts.
18. Tyler O. Walters, “Implementing a Preservation Strategy,” presentation at Stewardship of Digital Assets Workshop, Library of Congress, October 27–28, 2009.

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