

Digital Asset Management System for a Local History Museum

Mary Koeven

School of Information, San José State University

INFO 282: Seminary in Library Management: Digital Asset Management

John Horodyski

May 14, 2025

Digital Asset Management System for a Local History Museum

A local history museum and archive needs a Digital Asset Management (DAM) system that can help them achieve their mission to engage with the public and help people of all ages form a personal connection with history. The museum receives donations of items frequently, as well as inquiries about local history. They have a backlog of historical artifacts to digitize and need to be able to quickly find artifacts that answer patrons' questions and create new, engaging exhibits. They would like to create online exhibits and engage with the public on social media to help bring more visitors in the door and raise more revenue through admissions and monetary donations.

Users of the DAM system will be staff and volunteers working at the museum. The system needs to be easy to use, or at least not have a steep learning curve, because the users have varying levels of experience with computers. The system should integrate with the museum's existing Collection Management System, which uses the Access to Memory (AtoM) software. Users need to be able to easily import images, audio, video, and other files that are digital representations of items in the collection. They also need to easily find items based on the current location of their physical counterparts, as well as the events, locations, and people they represent. The DAM should also help the museum organize correspondence, social media posts, website content, and media that records changing exhibits and public events at the museum.

Digital Assets

The main thing the museum wants in their DAM is their Collection Management System, which keeps track of the objects in the museum. However, Susan Barrett points out in her presentation, "Essential DAM Planning for Museums" that there are many other assets museums should continue tracking in their DAM system. She lists the following:

- Accreditation or legal documentation
- Assessments or valuations
- Audio recordings
- Donation records
- Insurance documentation
- Lesson plans
- Loan or borrowing information
- Maps
- Moving and still images [including those of visitors enjoying the museum and special events]
- Physical condition reports
- Purchase receipts. (Barrett, 2014)

Museum staff and stakeholders will need to consider all of these as possible inclusions in their DAM system.

Metadata Model

A good digital collection contains three types of metadata: descriptive, administrative, and structural (Agnew et al., 2007).

Descriptive metadata should be enough to allow users to find what they are looking for. It needs to include fields for description of the resource, its provenance, the creator and other people associated with it, the format of the digital object, the format of the physical object if it is a digital copy, locations, dates, and time periods it is associated with.

Administrative metadata should include things that help the organization keep track of records and their copyright status, such as creation dates, file formats, when an asset was last opened or modified, what type of licensing it has, and who owns the copyright.

Structural metadata groups like assets together and connects them with other related assets. Assets that serve different purposes, such as digitized museum artifacts and email correspondence, should be stored in different folders, but they can also be linked together if necessary. For example, if an email discusses a particular exhibit but is not part of that exhibit, it should be linked to the exhibit. These relationship links can be included in the metadata.

The existing collection management system contains all of these types of metadata using the Dublin Core framework within the AtoM software. Metadata models for the DAM system should be similar to the ones used in the Collection Management System to ensure cross-compatibility.

An example of a metadata model for an item in this collection is shown below:

- Title
- Item number
- Repository name and location
- Date created
- Date digitized
- Last modified date
- Level of description (exhibit, collection, folder, item, page)
- Part of/contains (link to parent/child items for exhibit, collection, folder, item, page)
- Extent (number of pages or file size)
- Creator
- Scope and content
- System of arrangement
- Conditions governing access
- Languages
- Custodial history
- License information
- Existence and location of originals
- Related archival materials
- Rules or conventions followed in description
- Location

Time period
Categories
Names of people (link to biographies)

Taxonomy and Search Interface

The files will be organized by purpose, with the following main categories: digitized artifacts, correspondence, museum events, and exhibit information. Users will need to be able to search by type of artifact, historical event, exhibit, names of people, location, collection name, date acquired, date updated, and historical date or time period. Users need to be able to clarify whether they are searching for museum artifacts or for items related to museum management or correspondence, and search results should not mix up the two types of objects. Thumbnail images should be displayed for all museum artifacts. Digitized artifacts with multiple pages should be grouped together in the interface, but the fact that there are multiple pages should be clearly marked.

Workflow

The workflow of the system looks different for different projects and assets. Existing workflows should be evaluated for efficiency and accuracy, starting with the workflows for digitization of existing artifacts and entering metadata into the content management system. Discussion and analysis of staff members performing these tasks shows that the digitization workflow should ideally look like this:

- A series of related artifacts are scanned or photographed.
- Metadata is added to the images in bulk in a spreadsheet-style format. Several of the fields will have the same information because the images are from the same collection.
- Individual descriptions and other data specific to each object can be added individually.
- Images are assigned a folder in the system.

- All metadata and organization tasks should be completed for this set of images before digitizing another set of artifacts.

The system should allow for automatic integration of the existing Collection Management System. It should also have features for automatically integrating or adding metadata to born-digital items like emails and digital photography. Users will need bulk entry options to categorize items that are in the same exhibit or cover the same topic. Users will need to group together images that represent multiple pages of the same document, or transcripts of a digital scan or audio file.

Digital Preservation

Assets will need to be backed up in multiple places, and plans need to be made for changing formats to retain compatibility. The museum will follow the digital preservation portion of the Capability Maturity Model as described by Crowston and Qin and analyzed by Ball (2012). Museum staff will:

- *Store, backup and secure data.* Files should be accessible from a central location, either a networked computer or a cloud server. Ideally there should be both a hard drive backup on site and an offsite cloud server backup. Backing up files should take place automatically. DAM software should include security protocols that can protect the data from hackers.
- *Manage schedules for archive generation, validation and delivery.* When staff members have completed a project, they will move project files to the archive folder. The DAM team will schedule times for regularly reviewing archived files and performing the other tasks on this list. They will also regularly evaluate the data to determine if there are files in the system that need to be deleted or archived. Files that are only kept for tax and legal

purposes and are not needed after a certain period of time may be deleted automatically by software. However, care must be taken when implementing automatic deletion software.

- *Curate data.* Staff members will analyze data from completed projects for their usefulness in future exhibits, research projects, web content, or other purposes. They will add metadata tags that will help make them discoverable for such uses.
- *Perform data migration.* The museum will maintain a list of filetypes that are compatible with museum systems. When necessary, files should be migrated to those filetypes when archived.
- *Build digital preservation network.* A network will be set up to connect each device used by staff members to the DAM system, and that each staff member will be trained to use it. Team members should ensure that archived files are stored in the folders that are set up for automatic backup.
- *Validate data archives.* Team members will analyze data to ensure that duplicate files are not present in the system. There is only one final version of the file in the archive, unless for some reason the older versions are desired to be kept, in which case they should reflect the version number in their filename. They will also check that filenames and metadata are consistent and appropriate for the content of the files. Automated software can be used to flag blank spots, errors or inconsistencies in the metadata.
- *Package and deliver data archives.* Files should be regularly exported to a Trusted Digital Repository (TDR) for offsite storage. Staff members may need to prepare the files and metadata so that they fit the format used by the TDR. Provenance records are especially important in a historical museum, and files should include metadata related to

provenance, such as where a file was obtained, who created it and when, and every time it has been modified.

Licensing and Copyright

Each digital asset must have licensing fields in the metadata, including a field for the current copyright holder and one for what type of license is associated with the asset (e.g. public domain, limited use, etc.). There should also be room in the metadata to track whether and when permission was obtained to use the copyrighted asset, with the option to link related licensing documentation to the asset.

Some archived content belonging to the museum may have been originally obtained using subscription services that the organization no longer has a license to, whether that be access to content or a software license. There also may be content from traveling exhibits that are owned by other institutions. Making filetypes accessible that were created using an obsolete software may require getting a software emulator and/or converting the content to a new filetype. The museum may risk breaking copyright laws in these types of situations and must be careful to ask for permission from the copyright holders whenever possible.

Staff members will obtain and record copyright permissions when processing digital assets as part of preparing for a publishing project or new exhibit, and when preparing for preservation. The museum should also keep records of any assets whose rights they have sold to others.

Review of DAM Vendors

Local history museums have limited resources, so the DAM for the museum needs to be affordable. Many DAM vendors are targeting retail and marketing corporations rather than cultural heritage institutions. Not only do such corporations have more money than museums,

but they also have different needs. DAM Vendor ResourceSpace points out in their blog that “relying on automated metadata tagging alone won’t work for [museums],” because they have specific artifacts that need to be cataloged with specific metadata, rather than generic images that can be used for marketing (ResourceSpace, 2025a). This is true. Automated metadata tagging may be helpful to some extent for some assets, but museum staff will still need to go in and catalog individual items. They need software that enables them to do it quickly. This museum already has a Collection Management System (CMS) that they are paying for. The DAM, ideally, needs to do what the CMS does and more. It should either integrate with or replace the CMS and import its content, while allowing for additional features that help manage the other assets listed above.

There are a few vendors that stand out as having features that will meet the museum’s needs. These vendors have case studies on their website explaining how their DAM software is already being used by museums, universities, and/or non-profit organizations. Although the exact price of the DAM cannot be determined without first negotiating with the vendor, some of these vendors seem to be fairly affordable compared to others. Vendors that stand out are ResourceSpace, Fotoware, and NetX.

ResourceSpace

Features

- Integrates with Microsoft Office, Google Suite, Adobe Suite, Canva, Facebook, Flickr, and Collection Management Systems TMS (The Museum System), Emu, and MuseumPlus (ResourceSpace, 2025e).
- Uses IIIF API which allows for more integrations with Collection Management Systems like Access to Memory (Webster, 2025)

- Can search by metadata field values (ResourceSpace, 2025c).
- Uses checksums to find duplicates files (ResourceSpace, 2025c).
- Has automatic metadata tagging features (ResourceSpace, 2025c).

Pricing

- A basic 10GB system can be set up for free. This would not be enough to store the museum's assets but would be a good way to test the software (ResourceSpace, 2025d).
- The software is open source, so the software license is free. Support packages, auto tagging, and cloud storage for 1 TB and 25 users starts at \$442 per month (ResourceSpace, 2025b).

Strengths

- This is Open-Source software, so probably more affordable than proprietary software, along with more potential for future customizations.
- Integrates with existing Collection Management System.

Weaknesses

- Some reviewers mention that the software can be difficult to learn to use and set up (G2, n.d.-c).

Fotoware

Features

- Integrations include Microsoft, Google, Adobe, and Collection Management Systems Axiell and MuseumPlus.
- Not clear if it supports IIIF API, but there are options for custom integrations with content management systems.
- Automatic keyword tagging for photos (Widerberg, 2025).

- Custom templates and macros can be created to automatically tag assets with specified metadata upon ingest (Koh, 2025).

Pricing

- Need to request a quote for custom pricing (Fotoware, n.d.).

Strengths

- Reviewers rate it as easy to use (G2, n.d.-a).

Weaknesses

- Not clear if it will link to Access to Memory.
- Price is probably high.

NetX

Features

- Integrates with collection management systems TMS, Emu, Embark, Past Perfect, Rediscovery, MuseumPlus, OPAS, Qi, and CollectionSpace (NetX, n.d.-b).
- Uses IIIF API which allows for more integrations with content management systems like Access to Memory (NetX, n.d.-c)
- “Asset views” feature allows multiple files to be associated with one asset, such as captions, transcripts, photos from different angles and resolutions, etc. This keeps the images associated with the asset but prevents them from cluttering search results (NetX, 2025).
- “AutoTasks” are custom templates and macros that can be created to automatically do tasks such as giving assets certain rights and permissions based on the folder they are stored in, mark assets or their rights as expired, create derivative images of lower resolutions, or add watermarks or captions explaining licensing status (Kwak, 2018).

Pricing

- Need to request a quote for custom pricing.
- Can create unlimited number of free users to access read-only content (NetX, n.d.-a).

Strengths

- Supports the most museum collection management systems, including Access to Memory.
- Their website specifically advertises to museums, and reviews on g2 from museums and institutions have rated it as very useful and easy to use for museums (G2, n.d.-b).

Weaknesses

- Price is probably high.

From this analysis, it seems that NetX would be the most useful software for this institution because of its features and ease of use, however it may be too expensive for the museum to afford. Despite this, the way it will help them manage their content and engage with patrons means the return on investment will be high. Perhaps the museum can collaborate with other related institutions and pool their resources to get a joint subscription, making the software more affordable while giving staff and patrons even more access to historical content.

Final Thoughts and Conclusion

This is only the beginning of the process of implementing a DAM system for this museum. Staff members will need to meet together and discuss this proposal, gather more information and test out the DAM software, make any desired changes, assign tasks and deadlines, and plan for training. Regular meetings, along with scheduling and assigning tasks, will enable the DAM to be fully implemented and accepted into the museum's system. The museum may also want to consider collaborating with other historical museums in their region to

share assets and software costs, which could enable them to share their historical knowledge with more people.

References

- Ball, A. (2012). *Review of Data Management Lifecycle Models*. University of Bath.
- Barrett, S. (2014, July 16). *DAM Guru Program: Essential DAM Planning for Museums*. YouTube. <https://www.youtube.com/watch?v=VufImeDgl04>
- Agnew, G., Wetzell, K. A., Stephenson, C., Koelling, J., Hsieh-Yee, I., Gill, T., Fleischhauer, C., Caplan, P., & Baca, M. (2007). *A framework of guidance for Building Good Digital Collections: A NISO recommended practice* (3rd ed.). National Information Standards Organization (NISO). <https://www.niso.org/sites/default/files/2017-08/framework3.pdf>
- G2. (n.d.-a). *Fotoware |DAM reviews 2025: Details, pricing, & features*. <https://www.g2.com/products/fotoware/reviews>
- G2. (n.d.-b). *NetX |DAM reviews 2025: Details, pricing, & features*. <https://www.g2.com/products/netx-dam/reviews>
- G2. (n.d.-c). *ResourceSpace |DAM reviews 2025: Details, pricing, & features*. <https://www.g2.com/products/resourcespace/reviews>
- Koh, E. (2025, April 10). *How DAM helps Museums Transform Collection Management*. How DAM helps museums transform collection management. <https://www.fotoware.com/blog/how-digital-asset-managment-helps-museums-streamline-operations>
- Kwak, J. (2018, October 18). *Eliminate busy work with DAM autotasks*. NetX. <https://www.netx.net/blog/netx-autotasks>
- NetX. (n.d.-a). *NetX pricing: Digital Asset Management Software cost*. netx digital asset management. <https://www.netx.net/pricing>

NetX. (n.d.-b). *Sync your CMS or PIM data to your DAM platform.*

<https://www.netx.net/blog/sync-your-cms-or-pim-to-your-dam-with-the-netx-data-source-sync-tool>

NetX. (n.d.-c). *The Leading Digital Asset Management Platform (DAMS) for museums: Netx.*

netx digital asset management. <https://www.netx.net/museums/>

NetX. (2025, March 3). *Asset Views.*

<https://support.netx.net/hc/en-us/articles/4409800536599-Asset-Views>

Pricing. Fotoware. (n.d.). <https://www.fotoware.com/pricing>

ResourceSpace. (2025a, April 10). *Digital Asset Management Best Practice: Arts & Heritage.*

<https://www.resourcespace.com/blog/arts-heritage-best-practices>

ResourceSpace. (2025b, May 6). *DAM service pricing (GBP).* DAM Service Pricing (GBP).

<https://www.resourcespace.com/pricing>

ResourceSpace. (2025c). *Features.* <https://www.resourcespace.com/features/>

ResourceSpace. (2025d, May 6). *Free DAM software.* <https://www.resourcespace.com/free>

ResourceSpace. (2025e, May 6). *Seamlessly integrates.*

<https://www.resourcespace.com/features/integration>

Webster, N. L. *Access to memory.* The American Archivist Reviews Portal. (2025, February 26).

<https://reviews.americanarchivist.org/2025/02/26/access-to-memory/>

Widerberg, A. (2025, April 15). *How the National Historical Museums of Sweden succeed with DAM.* Fotoware Home.

<https://www.fotoware.com/blog/national-historical-museum-sweden-fotoware-dam>