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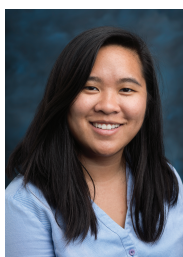Part of the Library and Information Science Commons

# Digital collection self-migration at Loyola Marymount University: Assessing platforms and managing implementation

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**Abstract**    In 2017, the William H. Hannon Library at Loyola Marymount University (LMU) used a locally hosted licence of CONTENTdm for managing its digital collections. Then LMU was informed that CONTENTdm would no longer be supporting locally hosted instances of CONTENTdm. The Systems & Digital Initiatives (S&DI) department took this change as an opportunity to assess a range of digital asset management systems. After an initial assessment period and review of several product options S&DI decided to self-migrate the library's content to Adam Matthew's new platform, Quartex. This paper describes LMU's assessment of digital asset management systems and the process of self-migration, and highlights the challenges associated with self-migration for early adopters of a platform.

KEYWORDS:   self-migration, digital asset management system assessment, digital asset management system migration

## INTRODUCTION

The William H. Hannon Library at Loyola Marymount University (LMU) in Los Angeles engages in the sustainable stewardship of digital collections in support of academic excellence, local and global citizenship, and the Catholic intellectual tradition. The library engages in careful, sustainable stewardship to preserve and grow physical and digital collections in support of the university's mission to encourage learning, educate the whole person, and

service faith and the promotion of justice. LMU is a medium sized R2, private Jesuit university with an enrolment of 10,000 undergraduate, graduate and law school students.

Presently, the William H. Hannon Library has a staff of 40 members, including 19 librarians. The Systems & Digital Initiatives (S&DI) department was created in 2017 and combined the Systems Department and the Digital Library Program. This newly formed department included the head of S&DI, a digital initiatives librarian, a digital scholarship librarian, a systems librarian and a library assistant. S&DI managed a range of responsibilities from digital collections, digital scholarship, institutional repository and systems administration. In 2017, the William H. Hannon Library began a digital asset management (DAM) system migration project managed by the S&DI department.

LMU's Digital Collections features unique materials digitised from the William H. Hannon Library, as well as from LMU's Center for Ignatian Spirituality and Student Media Department. The digital resources represent historically significant documents, photographs, audiovisual recordings, manuscripts, scrapbooks, maps, postcards and diaries. Many of the collections focus on the history of Southern California, Catholicism in Los Angeles and Loyola Marymount University. The collection also includes rare books and manuscripts highlighting the early centuries of Jesuit imagination as well as key polemics of the Protestant Reformation. Other collections showcase LMU's distinctive holdings, such as the Werner von Boltenstern Shanghai Photograph and Negative Collection and a robust collection of postcards from around the world.

## LITERATURE REVIEW
### Motivation for migration

When migrating DAM systems, several factors are influencing an increasing number of libraries to adopt open source solutions.[1]

Libraries contending with the financial strain of budget cuts view licensing fees and the increasing costs of software production[2] and maintenance as increasingly untenable[3] when viable open source options are available. But while financial factors may be providing the main impetus for migrations, the functionality of proprietary DAM systems is also increasingly unsatisfactory. The proliferation of modern metadata and preservation standards, file formats and types of digital content being created and preserved requires greater adaptability, scalability[4] and customisation for the users of these platforms.[5] Open source platforms with their 'more diverse talent pool of programmers'[6] tend to have more or better functionality. They provide the opportunity to develop local code and features and to engage with a larger community of developers.[7] All that said, the main concerns with open source DAM solutions are the same as any other open source solution: a lack of technical support and the increased pressure and personal responsibility it puts on staff in terms of required expertise and time dedicated to system maintenance.[8]

### Migration planning and assessment of systems

Despite the increased functionality of modern open source platforms, none has been developed that will satisfy every customer.[9] When planning any migration of library software, it is critical to develop clear parameters to guide project scope and goals with tangible outcomes. This, in turn, will provide better guidance when assessing more specific technical questions. To this end it is up to the project team to develop a rubric or other standard by which to determine which platform best fits the needs of the implementation team,[10] library technology leaders and the larger user community.

Reflecting this need to assess DAM systems according to local standards prior to selecting a new platform, the literature relating to the assessment of DAM systems

devotes considerable discussion to the various criteria that different libraries have used to evaluate such systems. Common factors include technical support and maintenance, content management and ingestion, collection reporting and statistics gathering, interoperability with other library platforms, metadata administration[11] and simplicity of user interface.[12] Some studies get more technical, and include additional factors such as access and privacy settings, standards compliance and automation tools.[13] Others include broader long-term goals such as barriers to a potential future exit from the platform and alignment with strategic goals and planning.[14] Both approaches provide useful templates for local decision making around the acquisition of a new DAM system.

### Migration as an opportunity to enrich metadata

DAM system migrations provide a unique opportunity to enrich digital collections. Migrations can also involve a re-examination of metadata schemas and controlled vocabularies throughout the collection. A repository may represent a variety of metadata schemas and controlled vocabularies as digital collection guidelines and standards have evolved. By analysing the metadata, metadata inconsistencies and metadata quality can be addressed.[15] Institutions will find many legacy collections utilise custom-developed local fields. During the migration process, the migration team can develop a new uniform metadata standard for the entire repository. Many digital collections employ a Dublin Core element set with custom-developed local fields for each collection.[16] During the migration, the team can crosswalk the metadata into a simplified, standard Dublin Core element set without custom fields to meet new, updated metadata standards. By analysing the legacy metadata, librarians can identify weaknesses in their metadata creation workflow. This process can be labour-intensive as the process cannot

always be automated. Migrating from CONTENTdm can be a very tricky process. CONTENTdm's mechanisms for bulk metadata editing are very complicated and not always possible.[17] Therefore, the metadata must be exported into spreadsheets for standardisation.

## THE EXISTING ENVIRONMENT — CONTENTDM

The William H. Hannon Library launched a digital library programme in January 2009. At the time, the programme consisted of three collections housing 649 digital objects. In the past decade, the library's digital collections have grown to more than 10,000 items and 18 unique collections, equating to about 125 GB of master TIFF images. Prior to the migration, the William H. Hannon Library curated the digital collections using CONTENTdm. The library's instance of CONTENTdm was supported under a direct licence user contract, allowing the library to host locally on LMU ITS servers and included long-term storage of the master files in OCLC's Preservation Archive. At the end of 2017, S&DI was notified that CONTENTdm would no longer be supporting locally installed licences. Whether S&DI decided to adopt CONTENTdm's hosted version or not, any decision on how to move forward would require a migration. Given that regular users were only minimally satisfied with CONTENTdm's design and administrative functionality, the department seized on this opportunity to assess the market of digital asset management systems and potentially identify a new platform for managing the library's digital collections.

## SELECTING A DIGITAL ASSET MANAGER SYSTEM

Once it was determined that DAM system migration was necessary, the head of S&DI began to solicit proposals and demos

from vendors. Although the adoption of open source DAM systems is becoming increasingly popular with libraries, the William H. Hannon Library has no internal IT staff, so S&DI reviewed proprietary platforms only. S&DI created a list of required features. The new platform needed a user interface that would be easy for students and researchers to navigate. Staff also wanted a platform that provided bulk editing and a simple mechanism to download assets for duplication requests. The platform also needed to comply with the demands of the Americans with Disabilities Act 1990 and Web Content Accessibility Guidelines.

A new feature S&DI prioritised was an audiovisual player. To better promote the digital collection, S&DI also hoped a new system would allow for greater integration with other library platforms such as the library's discovery layer.

Due to the small size of the digital collection, S&DI would lead the migration process as a cost-saving measure, instead of outsourcing the migration process to the vendor. Members of the Archives and Special Collections (A&SC) department, the primary internal stakeholder of the digital collections, were asked to participate in the proposal review process and provide feedback. The group reviewed OCLC CONTENTdm and Preservation Archive, Adam Matthew Quartex Platform, LUNA and TIND DA.

The head of S&DI developed a scoring system that used a four-point scale to rate each the following criteria: user interface, usability, accessibility, sharing and download capability, staff interface, staff functionality, image viewers, audiovisual viewers, integrated archives services, capability to host A&SC digital content and greater integration with library platforms. Individuals attending vendor presentations were asked to provide their feedback and to rate each system according to this scoring system.

Despite the scoring system, S&DI's decision to select Adam Matthews' Quartex was not straightforward. The initial review

ranked Quartex third out of the four products reviewed. However, given that the William H. Hannon Library would be early adopters, the possibility of being able to influence development plans was much higher than S&DI expected compared with the other systems reviewed. By the time S&DI finished the review, Quartex had continued development on the platform based on feedback the department had provided during the initial conversations. The team reassessed Quartex after these updates, which caused S&DI to adjust the scores, placing Quartex in joint first place according to the scoring system. Ultimately the implementation of a digital video player, the ability to batch edit metadata and the promise of future developmental flexibility cemented the decision to select Quartex as the library's new DAM system.

Adam Matthew — a SAGE company — created Quartex as a hosted solution for curating digital assets. It was important to S&DI that the administrative interface provided wide functionality and configuration options. At the time, Quartex was the only solution reviewed with the capacity to curate audiovisual content with built-in players. A built-in player was important to the growth of digital collections because Loyola Marymount University has a film school and A&SC has a large media archive. In addition, Quartex offers innovative features for research including, handwritten text recognition (HTR), and the discovery of Adam Matthew and partner institution content through Quartex. Quartex thus offered an innovative solution for managing digital assets at William H. Hannon Library.

## PREPARING FOR MIGRATION — ASSESSMENT AND IMPLEMENTATION DECISIONS

Before migrating any of the library's content from CONTENTdm to Quartex, S&DI strategised the ideal way to manage

the digital collections moving forward by assessing how they were managed in CONTENTdm. The content migration team comprised of the head of S&DI, the digital initiatives librarian and the library assistant. The digital scholarship librarian handled the front-end customisation. The systems librarian managed the implementation of Google Analytics and testing front-end performance.

Given the history and evolution of S&DI and shifting metadata management priorities, one of the first steps in this process was to analyse the organisation of the digital assets and centralise master files in a single location to stage the migration to Quartex. In general, access files were organised on a local server in sequentially numbered files organised in folders by collection. Master files were less centralised. Most were located in the OCLC Dark Archive with original file names, again organised in folders by collection. However, a history of different digital collections managers had resulted in several different procedures for storing master files. Just because an asset was in CONTENTdm did not mean the team necessarily had all the preservation masters. Files were spread across the OCLC Dark Archive, a cloud-based departmental storage area, as well as a physical hard drive. To ensure the preservation of the assets, the library assistant fully inventoried all 10,000 objects to determine if S&DI had access records, master records, or both for all objects. Any missing master files would be ingested into Quartex from derivative files. The exported CONTENTdm metadata provided S&DI with a list of all LMU's digital assets and compound folders. This provided the team with an inventory of the library's assets to determine the number of compound folders that needed to be created, the number of images each compound object should have and the total number of files in each collection. While the storage of assets seems disorganised, this process merely highlights the evolution of best practices, procedures

and technological innovation over the last decade within digital collection management. The migration provided Hannon Library the opportunity to ensure the legacy collections were updated to reflect the present best practices in digital collections.

As the team worked on centralising the master files, S&DI also analysed the process of metadata creation. After exporting the metadata from CONTENTdm, S&DI discovered that 62 different metadata fields were being utilised across the 18 collections. Throughout the history of the Digital Library Program, a prior iteration of S&DI, each of the previous collection managers utilised metadata schemas and standards based on a collection's needs. For example, one digital collection's metadata standard replicated MARC cataloguing, but another one reflected Dublin Core. Between 2012 and 2016, the William H. Hannon Library had a special collections metadata librarian in the Archive and Special Collections Department. During this period, the special collections metadata librarian and digital library programme librarian developed best practices for descriptive metadata for LMU Digital Collections. However, by 2017, both positions were dissolved. Therefore, the team revised and remapped the 62 different fields into 29 standardised Dublin Core fields based on the LMU Digital Collections best practices. S&DI also revised the library's best practice metadata standards with 'less process, more product' ideology in mind to simplify the process of metadata creation for future collections. The digital initiatives librarian remapped the existing metadata into the new fields.

The team also addressed and standardised the library's asset naming convention. The most recent naming convention schema addressed the repository and the collection's abbreviated name. The migration process gave the team an opportunity to reevaluate the naming convention of the entire digital collection. S&DI developed a new naming convention to allow for the

quick identification of Loyola Marymount University and the archival collection. The goal of the team was to create a naming convention that mirrors the archive. The new naming convention contains LMU's OCLC institutional symbol and the Archives record group identifier. This new standard allowed staff to see that the digital collections were being curated from multiple archival collections. The library assistant used Bulk Rename Utility to apply the new naming convention to 10,000 assets and compound folders. Bulk Rename Utility was selected as it is easy to learn and allows the user to preview the changes before applying them to the files. The renaming process within migration provided an opportunity to ensure all assets in a collection were accounted for. Renaming over 10,000 objects is not an easy feat, especially maintaining quality control. The team utilised Beyond Compare to compare lists of new identifiers from the new metadata spreadsheet and the old filenames from CONTENTdm to identify errors throughout the renaming process.

The digital initiatives librarian embedded the new metadata into the assets with Visual Resources Association Bridge Metadata Toolkit to further preserve the assets and metadata. By permanently encoding the image with metadata, the library's technical and descriptive metadata could be encoded to make the information more accessible to users and provide a persistent link to the William H. Hannon Library.

Throughout the process, S&DI wanted the future of digital collections to be systematic, consistent and scalable in order to satisfy the needs of stakeholders. To this end, S&DI wanted to create a standard that would ensure that all content files were identifiable and meaningful to the A&SC department for fulfilling requests and for the internal management of content. The team standardised master asset naming conventions and metadata fields. These standards would then be applied as the library expanded its digitisation projects and holdings in digital collections. As the William H. Hannon Library prepares to hire a new digital projects librarian in an effort to ramp up the development of digital collections, this format will be used to create a clear standard for metadata creation, which should scale to an increasing number of assets in digital collections. With such decisions made, the team was now ready to begin the actual content migration.

## MANAGING THE IMPLEMENTATION PROCESS

As the content migration was managed by the digital initiatives librarian and library assistant, they implemented Trello, a free project management tool, to centralise communication and notes, chart out expectations and provide an accountability mechanism. Trello was a great tool to provide a smooth migration. Trello centralised communication and standardised quality control processes. The team built a workflow: Staging a Collection, Metadata Restructuring of a Collection, Rename Assets in Collection, Embedding Metadata into Collection Assets, Ingest and Quality Control Post-Ingest.

Each collection had its own card, and as the card moved along the workflow, the team would embed a checklist into the card for quality control and assign tasks to each member of the team. The cards had the ability to track activity and comments, which allowed the team to keep track of conversations, decisions, issues and questions.

## CHALLENGES

Migrating to a new platform is very exciting. However, being a small department, there were many challenges that arose throughout the migration. At the beginning, the head of department, digital initiatives librarian and library assistant relied heavily on verbal communication. The department's worst habit was to make decisions on the

fly without documentation or consulting the entire department. As the most of team shared an office suite, it was too easy for team members simply to talk to each other whenever someone had a new idea. The team was unable to restrain from continuously brainstorming and developing new ideas during the migration. As a result, the digital initiatives librarian and library assistant had to redo parts of the migration to incorporate new ideas. To curb the temptation to throw out new ideas in passing, the digital initiatives librarian initiated weekly migration meetings to discuss the process and progress with the library assistant and head of department. The library assistant kept minutes for all meetings pertaining to the migration for the department to document decisions and issues. During a migration, it is very important to communicate with the entire department and document decisions.

Balancing responsibilities outside of Digital Collections became another challenge for the team. The digital initiatives librarian was also the institutional repository manager, the Archive-It manager and manager of the audiovisual digital preservation system. On the other hand, the library assistant was balancing projects for digital scholarship and systems, while also managing the department's student employees. With Trello, the team could track the length of each step to assist the department in developing better time management. When the team stalled on a particular step of implementation, the digital initiatives librarian and library assistant could articulate to the rest of the department the need to reprioritise projects by stating the time needed to reallocate time for migration processes and resources to untangle issues.

As LMU was an early adopter, the platform was in development and LMU's development needs prior to making the digital collection live became more pressing towards the end of the migration. Working with a platform still in development provided a unique migration experience. Unlike what might be expected with already established platforms, Adam Matthew and S&DI had to work together to define transparency. In addition, the team had to constantly rewrite workflow procedures, as well as identify new bugs as Adam Matthew developed and improved the system throughout the migration. Nevertheless, the experience of the collaboration was quite rewarding. The digital initiatives librarian and systems librarian became the team's own troubleshooting pros as they learned intimately how Quartex works. In addition, they learned all the quirks of Quartex's system and learned how to communicate issues with the Adam Matthew team more efficiently.

The team had to learn how to push back respectfully and speak up about the institution's needs. The digital initiatives librarian and library assistant developed a document for tracking issues and questions. The digital scholarship librarian also demonstrated issues by sending the vendor screen recordings. The team began to convert all e-mails from the vendor into PDFs and saved them to a shared department folder to ensure all communication was recorded and easily available to the team. Vendors want their product to work for their clients. As front-end development accelerated, Adam Matthew began to use Basecamp, a project management web software package, to streamline communication and keep tickets on the issues the digital scholarship librarian was experiencing. Basecamp was excellent in centralising the support and communication between the Adam Matthew team and S&DI.

## AFTER IMPLEMENTATION

Finishing the migration process and implementation of Quartex is just the beginning of improving how William H. Hannon Library will manage the digital collections. The library expects to continue to work closely with Adam Matthew support

to continue improving the user experience with Quartex, especially the digital exhibition feature. After the completion of the migration, Adam Matthew and S&DI maintained Basecamp as a space to continue to provide feedback to support and to receive release updates. Today, Adam Matthew has a community discussion and support portal called Quartex Community Platform. With the launch of LMU's Digital Collection in Quartex, the department has received many compliments on the friendly appearance and growth of the library's digital collection since implementation. The digital initiatives librarian worked extensively with Student Media to ingest digital copies of the school's newspapers and yearbooks to further preserve the history of Loyola Marymount University.

S&DI was disbanded in early 2021 due to staffing issues relating to the COVID-19 pandemic. Despite the continued evolution of digital projects and systems at William H. Hannon Library, the systems librarian and the digital initiatives librarian (now the scholarly communications librarian) have begun to plan a student-focused usability study. Much of the feedback during implementation came from internal stakeholders. The next step of assessment will be focused on the broader user experience. The team will use this study to examine student and researcher access and ease of usability of digital collections to determine what digital collections instruction is needed. The goal of the study is to present these findings to Adam Matthew to improve functionality and usability of Quartex for future users.

The migration to Quartex also reflects the William H. Hannon Library's strategic plan to increase the development of digital collections. As part of the strategic plan, the library would like to ramp up production of digital collections. To this end, the library has hired a digital projects librarian in the Archives and Special Collections department to act as primary manager of digital collections moving forward. This person will oversee any new digital collections initiatives and as such will take over as the primary Quartex administrator. There is still plenty of work to be done developing LMU's digital collections and it is hoped that the migration to Quartex will make that easier to manage.

## CONCLUSION

The William H. Hannon Library was among the first academic libraries to implement Quartex. This resulted in an extremely labour-intensive migration process. Following on from the five months it took to select a new platform, the digital initiatives librarian and library assistant dedicated a year to the content migration of digital collections, while the front-end implementation, redesign and troubleshooting took a further three months.

As challenging as this process was, however, it provided an amazing and unique opportunity to redevelop processes for 10,000 asset files and corresponding metadata to create and apply standards-based practices for filenames, descriptive metadata and embedded metadata. The library is excited that the new platform provides functionality that improves the library's capability to curate digital content and patrons' ability to access and engage with LMU's unique collections.

## ACKNOWLEDGMENTS

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