
Case studies

Digital asset management system implementation at American Express Publishing

Received (in revised form): 28th July, 2013



Chad Beer*

has worked with digital asset management (DAM) for 15 years in a range of business environments including museums, fashion, advertising and publishing. His work has focused on the major aspects of DAM integration: workflow development, rights management, metadata development, system design and implementation, process change management and user adoption.



Holly Boerner**

is the Business Intelligence Manager at Grey New York. At the time of writing this paper, she occupied the role of Manager of Digital Assets at American Express Publishing, where her responsibilities included developing, implementing, and managing the company's first DAM system. She has worked in the digital asset management field for over ten years while at The Museum of Modern Art, Martha Stewart Omnimedia, and J. Crew, before occupying her current position. Holly has extensive experience with installing and managing DAM systems in enterprise-wide deployments, overseeing user training and adoption, and managing custom taxonomy development and metadata standards.

American Express Publishing, 1120 Avenue of the Americas, New York, NY 10036, USA

*Tel: +1 212 382 5685; E-mail: chad.a.beer@aexp.com; **Tel: +1 212 827 6417 ; E-mail: hjoerner@gmail.com

Abstract This paper presents an analysis of the successful implementation of a new digital asset management (DAM) system at American Express Publishing (AEP). At AEP, the DAM team was faced with surprises when the system passed from a theoretical planning stage to the realities of a production workflow. Real-life demands on user groups and system functionality forced the DAM team to quickly adjust course multiple times. Their ability to find successful solutions proved the value of the team's prior planning, education, and relationship building. Post roll-out, the team learned lessons about enabling a successfully operating system to meet the search and access needs of end users. Detailing the critical decisions and actions that led to that success, the paper defines important best practices applicable to system implementations at any enterprise.

KEYWORDS: digital asset management, keywords, implementation, workflow management, publishing.

INTRODUCTION

The summer of 2010 represented an exciting moment at American Express Publishing (AEP), as the company stood

ready to kick off its first digital asset management (DAM) system implementation. AEP, a small publishing company responsible for print and digital

magazine, web, tablet, mobile and social content, produced under the brands *Black Ink*, *Departures*, *Executive Travel*, *Food & Wine* and *Travel + Leisure*, took an ambitious track when defining the roles that the new DAM system would fulfil within the enterprise. The system was planned to integrate with the brands' editorial workflows and manage all image content through its production workflows (print to web). It would also function as a static asset repository that could serve up image content to all AEP.

This paper will look at three important moments of the implementation that represent the deepest challenges that AEP faced when rolling out and how those challenges were successfully met. The paper will examine how the DAM team tasked with the implementation were able to switch gears mid-stream to quickly reinvent a long-planned DAM-enabled production workflow after the initial architecting fell short in meeting real-time production demands. The paper will review how the team responded to crippling performance limitations that emerged when the DAM system was overwhelmed with a plethora of equally prioritised tasks. Finally, the paper will look at how the challenge of building a truly robust, penetrable image library that fulfilled the search needs of end users was met.

Three years later, in the summer of 2013, it can be enthusiastically confirmed that AEP's DAM system has been successfully implemented, having met and surpassed its initial project goals. At the core of this success story lies the knowledge that what got the team to this point was the time it took to test and learn the nuances of the system and to build collaborative and trusting relationships with the user base. A deep understanding of the system and its users served as the richest resources that were drawn upon when facing implementation

challenges. Responding to those challenges with flexibility and nimbleness, born from understanding the system and users, is what enabled the team to successfully meet AEP's DAM project goals.

ESTABLISHING FUNDAMENTAL SYSTEM GOALS

AEP began its DAM implementation by assembling a three-person DAM team to execute the project, comprising Chad Beer and Holly Boerner from AEP's digital assets and rights department and a third individual, Philip Blake, from AEP's IT department. It was already known that the DAM system was meant to serve two fundamental enterprise goals. First, the system would serve as a work-in-progress (WIP) image management system. It would hold and manage image assets as they were acquired and shared between the photo, art, production and online teams as part of the print-to-web production workflow. Secondly, the DAM would serve as a penetrable image library that held all editorial image content, published or unpublished, serving it up to all of AEP for reuse and repurposing.

It was clear that, by establishing the workflow processes that comprised the WIP system, through which assets would be ingested and tagged, the team would go a long way toward laying the foundation that would populate the DAM's library side. With this understanding, the DAM team embarked on what would be an ongoing partnership with the creative teams involved with production. Over the course of many meetings and workflow-user interviews the DAM team became intimately familiar with the existing production workflows, which led to a collaborative relationship where the new workflows that would come with the WIP system were mutually designed. Two essential goals of the WIP DAM emerged over the course of this process: (1) that

assets would be ingested into the DAM system as soon as they were acquired by AEP; and (2) that those assets would begin to accumulate metadata at the very first stages of their DAM life cycle. Together, these goals provided the framework for the testing and development of the WIP-side of the DAM, which was seen as ultimately feeding the library side of the DAM by extension.

TESTING AND PLANNING A SOFT ROLLOUT

Simultaneous to the development of the WIP DAM's workflow components, the team also embarked on basic examination and testing of the system's technical functionality. Over this period, the team painstakingly did everything it could to put the system through its paces, to anticipate any and every nuance that might arise during the rollout. The system's functional details were shared with all of the creative teams already partnered with via the workflow design. First, this included reviews of in-progress wireframes as the system was being built by MediaBeacon (the system vendor), followed by live demos of the system's alpha build and, finally, hands-on classes offered to creative teams when there was a beta build in-house. The classes ran for two to three sessions per creative team per brand, during which each team member was walked through the new workflows, given sample assets to try workflowing through the DAM system in the same way they would soon workflow real production assets. Feedback was gathered at each testing phase from everyone who was involved. This sometimes resulted in requests for adjustments to the system customisations or the anticipated workflows and the team weighed how best to address requests or concerns. By diligently working with end users and exhaustively testing the system's technical

components, it was hoped that no big surprises would hit anyone once the system went live.

Finally, the team was ready to translate the testing period's results into an implementation plan. The implementation was still only meant to be a soft rollout in which the DAM's behaviour as a WIP system could be put through its paces in a real-time production environment, while remaining officially in beta. The soft rollout was seen as a important moment — an ideal opportunity in which to analyse how the system would perform when tasked with image workflow production.

Three of AEP's titles were slated to be workflowed through the DAM by the end of the rollout process: *Departures*, *Food & Wine and Travel + Leisure* magazines. Comparing the three, *Food & Wine* emerged as the ideal first candidate to test using the DAM system for production. *Food & Wine* is a monthly publication whose production deadlines provided an appropriate representation of what all three titles faced. It also represented a good middle ground in terms of the volume of image content acquired for publication consideration per issue. Therefore, *Food & Wine* was seen as the best potential indicator of how the DAM-facilitated image workflow would shake out. The team aimed to make the shift from the existing workflow to DAM-facilitated workflow as cleanly as possible and, to do that, it was decided that an entire issue, rather than just one or two stories here or there, would be produced using the DAM system. Therefore, in the autumn of 2011, after a year of system testing and demonstrations, *Food & Wine*'s creative teams began work on their January 2012 issue using the DAM system exclusively for image workflow. As thorough as the testing and planning was, the team was about to learn that truly thorough testing of a new system can only

be accomplished under real-world scenarios.

CHALLENGE 1: PROPOSED WORKFLOW MEETS REALITY

The biggest shift implicit in moving from a server-based workflow to a DAM-based workflow was that creative teams would now be tasked with using the DAM's front-end website to complete tasks traditionally done via a file server. Photo teams were tasked with uploading image content into the DAM at the earliest point of their acquisition process and then asked to indicate their file selections via metadata tags recorded in the DAM website, rather than through Adobe Bridge or Photoshop. Meanwhile, the DAM system was configured by AEP to hold these files in a flat folder structure with the idea that all content within a folder would be organised by categorical metadata tags. Instead of having a master folder for a story (eg 'Puppies') with subfolders of sub-categorical content ('Labs', 'Bull Dogs', 'Poodles'), all of a story's image content would exist in a master story folder and be tagged with metadata relevant to the story's content. In the DAM system, 'Puppies' might exist as a master story folder, but the subcategories of 'Labs', 'Bull Dogs' and 'Poodles' would be represented as metadata tags applied to image files.

Consequently, as the next step of the new workflow, once the photo team had uploaded images, made the image selections and assigned categorical metadata tags, the art teams would log into the DAM website and use it to search for images based on the categorical tagging performed by the photo team. In its pre-DAM workflow, the art team used to browse through departmental folders and subfolders of image content, dragging what they liked from the server into InDesign to lay out a story. Now, using the

DAM system, when the art teams found desirable image content by searching, it could be selected from the graphical user interface and drag it into InDesign without ever needing to stop off at a server to grab a file.

This web-based workflow was made possible by a few features native to AEP's DAM system. First, the system came with a plug-in that allowed for images to be viewed in a web environment and dragged directly into an Indesign file. Secondly, the system's out-of-the-box features provided a tremendous amount of flexibility for user interface and metadata field configuration. It was therefore possible to build web interfaces that complemented a user group's specific tasks. The system also provided the out-of-the-box tools that allowed for the rapid and easy creation of the metadata fields that were critical to facilitating the categorical image tagging that replaced folder-defined image organisation.

These feature sets are what facilitated the translation of the two most critical workflow components — file organisation by the photo teams and file accessibility by the art teams — to be performed in the DAM system's web environment. Unfortunately, as it came to be proven, there was a third element wrapped up along with server-to-DAM shift and this was the amount of time required to complete workflow tasks executed in the DAM web environment.

Over the course of *Food & Wine's* production of the January 2012 issue, the feedback most repeatedly communicated by the creative teams was concern about the amount of time it took to save metadata into files (rather than just move them quickly into a folder) or to drag files one by one from the DAM website into InDesign (rather than accessing them on a server, via InDesign's user-friendly key-command and bulk selection features). When the January issue was finally put to

bed and all the creative team's feedback gathered, it was clear that the new web-based workflow did not sufficiently serve the users' efficiency needs.

Solution: Utilise the knowledge gained through testing to quickly reinvent workflow

When it became clear the workflow did not work, it became necessary to quickly invent and implement a plan B that would still meet the fundamental goals of the DAM project. Because of the knowledge built from the deep system testing before the soft rollout, and because of the exhaustive rounds of end-user interviews that taught a deep understanding of the creative teams' workflows, it was possible to nimbly shift gears to develop an alternative yet still DAM-enabled workflow that successfully served magazine production.

Upon taking a step back and reflecting upon the new workflow's pain points, it became apparent that a lot of the new methodologies required of the web-based workflow were not offering improvements to the established, server-based workflow. Asking for users to engage with web-hosted metadata tagging, file organisation and file acquisition may have been the fastest, most direct route to meeting DAM project goals, but that did not mean they were the only way to meet those goals; particularly if they came at the cost of hampering an already proficient workflow. The server-based workflow had never broken; it worked well for moving images through production at the pace they needed to travel. It was clear that, at a minimum, the DAM's workflow methodologies needed to be adjusted to better mirror the existing server workflow and to layer in additional improvements from that already solid base.

The breadth of the DAM system's features went a long way in facilitating this adjustment. Rather than require the photo

teams to do their photo editing and organisation via metadata tagging, direct access to the DAM system's back-end file server was opened up, allowing them to directly drop in images and organise files in folders in the same way they did on their departmental servers. The system also was natively written to perform its metadata reading and recording to image files' XMP spaces. Therefore, it was possible to allow the photo teams to do metadata tagging into file XMP via Adobe Photoshop or Bridge, knowing the DAM system would then read, record and reflect that metadata in its web environment. The creative teams were thus freed to access, organise and tag image files on the DAM file server via Photoshop, Bridge and InDesign, and the actions taken through those programs would be accounted for and reflected in the DAM's web environment. The DAM project goals that image content be ingested and tagged in the DAM at the point of acquisition were thereby met, while preserving everything that was already successful about the tried-and-true server-based production workflow.

Being able to quickly reinvent the image workflow by leveraging the understanding of the creative workflow in tandem with the system's myriad features was really only half of the success story. The other half came in being able to deliver a solution to end users that they were happy with. It returned to them the well-deserved and massive service they performed by participating in long-going, intensive interviews and by their willingness to try their hand with the original, UI-driven workflow over the course of an entire magazine issue's production. Deeply knowing one's system and deeply knowing and appreciating one's users' needs proved fundamental to being able to duck and weave in response to the challenges of the DAM rollout.

CHALLENGE 2: CRITICAL CUSTOMISATIONS BEGIN TO FALTER

With the workflow challenges overcome, AEP's DAM system rollout was back on track. As the rollout progressed to include teams and assets from additional magazines, a new hurdle presented itself. The system began to fail at the most critical and elaborate of the system's customisations: automated metadata stamping. This functionality was intended to handle many important aspects of core metadata entry. Critical metadata would be attached to assets as early as possible after delivery to AEP, accurately, and without adding to the workload of production teams. Complete reliability of this behaviour was fundamental to the system's success and could not be compromised or dispensed with.

Metadata stamping involves its own workflow, starting with a completely different home-grown system, AEP's Editorial Tracking System (ETS). ETS tracks all AEP magazine articles, documenting basic provenance information such as magazine name, issue date and story title. ETS also logs the authors and photographers assigned to the stories, with information about the rights that AEP acquires to the contributed assets. Upon creation of a story record in ETS, an XML record describing story-specific metadata is sent to the DAM system, which creates a folder directory for the story. After receiving image files, photo editors would copy the files to the appropriate story's folder. The assets would be automatically stamped with story provenance and rights metadata that originated in ETS. Photo editors were tasked with monitoring the stamping by checking the assets' XMP fields in Bridge. After the stamping was complete, that metadata would remain in the assets, freeing photo editors to move the files to a more free-form folder directory that they could create and manage, for the

remainder of the production life cycle.

When metadata stamping began to fail, it did so to varying degrees. Sometimes the stamping would take hours to complete. At other times, some files in a given batch would simply never get stamped. Both situations resulted in long wait times, repetitive checks of the assets' XMP fields, manual patching of metadata by the DAM team and frustrating process interruptions experienced by all involved.

Solution: Modifying system behaviour to better manage demands

After a few weeks of observation by the DAM team and the system vendor, the team deduced that the failures were caused by the system's task load and its inability to prioritise. The increasing number of users and assets meant too many tasks were hitting the system. The tasks included the logging of any asset moves or manual metadata edits and several behaviours involved with ingestion of new assets: metadata stamping; creation of an asset record; cataloguing an asset's pre-existing metadata; creation of a preview image. The system simply did not know how to prioritise the various tasks when hit with multiple demands. Aggravating the situation was the fact that the system had to continually monitor the growing story folder directory to identify any newly added or moved assets and then act accordingly to ingest or recatalogue them.

The solution, realised by the system vendor, involved establishing a method whereby the system could prioritise the most time-sensitive task first. This was clearly the metadata stamping, as it was a required first step before an asset could move into the production workflow. The DAM vendor provided a two-pronged solution. First, the metadata stamping of a new asset was prioritised above all other tasks. Then the system was given a small subset of folders to monitor for new assets. To enable this, the functionality of creating

a story's folder directory was changed. Within each story folder directory, a 'To be stamped' folder would now be created. Photo editors would upload new image files to that folder. The DAM would survey only those folders for new assets. If an asset was found in a 'To be stamped' folder, the stamping of story metadata into those files would be prioritised above other tasks. Performance improvements were seen immediately. Stamping occurred reliably and with surprising speed.

The DAM vendor provided an additional layer to the solution that proved highly beneficial. After completion of stamping, assets would be moved from the 'To be stamped' folder to a 'Stamped' folder within the same story. This relieved photo editors from having to manually check the XMP files of new assets. Instead, they only had to check the 'Stamped' folder, knowing that, as assets appeared there, they were stamped and ready to be moved along the workflow.

Performance glitches like these, tied as they were to enterprise-wide asset and user-volume, are often impossible to predict in controlled environment testing. They may arise only after a system is put into a demanding real-life workflow. Flexibility and patience was required from all AEP teams to continue putting the system through its paces until a solution was found. The DAM vendor's dedication also proved critical in diagnosing the problem and creating a solution.

CHALLENGE 3: GETTING SUBJECT AND LOCATION METADATA INTO ASSETS

Having worked through the challenges of implementing the WIP side of the DAM system, attention was shifted to understanding and enhancing the experience of the non-production end user. Almost immediately, a new and different set of needs arose from user

groups who interfaced with the DAM from a primarily search and retrieve perspective.

Tremendous energy and focus up to this point had been directed at solidifying the DAM-enabled workflow process for the sake of meeting two fundamental goals: (1) that all assets acquired by AEP were ingested into the DAM system at the point of acquisition; and (2) that at the point of ingestion, all assets were tagged with high-priority, critical metadata. The metadata determined to be critical were anything that centred on publication information (magazine title, issue date, story title) or rights information (image credits and rights codes that defined reuse parameters). All of this information was invaluable information that end users would rely on referencing when encountering assets in the DAM system. To be able to look at an image, know when and where it was published and to know whether it could be repurposed for a new project without having to go through formal rights inquiry procedures were huge efficiencies facilitated by the DAM system. By emphasising these two types of referenceable metadata, a third, just as critical, type was initially overlooked: basic subject and location metadata. Upon rolling out the DAM system to AEP end users, the feedback very quickly became: 'Great, I can check rights to an image or I can look something up by the story it was associated with ... but what if I just want to find a picture of a hamburger, or beach, or fine jewellery?'

DAM-held images were not totally without subject and location tags that users could search against when attempting topical searches. Some contributors added subject and location tags before sending their image content to AEP and, internally, published magazine images got tagged with a light layer of subject tags as part of the production

workflow. This meant that by targeting only published material, less than 10 per cent of DAM-held image content ever got tagged with subject or location metadata. Ninety per cent of an image library is a lot to bypass when an end user needed to find the perfect picture of a hamburger — especially when a quick Google-like search in any third-party stock library could serve up just that.

Solution: Subject tagging completed by Master of Library and Information Science students

It was clear that DAM-held images needed more robust subject and location tagging in order to fulfil end-users' needs. Thus, the next step became figuring out how to meet that requirement. First, it was necessary to define what specific types of subject and location tagging should be represented in the images and then how that tagging would be completed. The 'what' proved the easy component to tackle. A new round of DAM-user interviews began, this time enquiring among the content producers as to the subjects and internal vocabulary they employed when referencing content in their day-to-day work. Meanwhile, content searchers and reusers were also interviewed to get a sense of what their search needs were, both in terms of content and search strategy. Once these data were gathered, they were compiled and streamlined to form a sort of hybrid, partially controlled vocabulary and tagging guideline set. The guidelines provided rules for tagging important, high-value subjects as they appeared in image content, while leaving open the methodologies for tagging content that did not explicitly fall within the boundaries of AEP brands.

The guidelines established, the next step became figuring out how this tagging would be completed. It was crucial that these sensitive metadata were entered by

discerning individuals who not only could be trusted for accuracy and care, but who had the time and diligence to approach this as a primary workflow task. As previously mentioned, a basic gloss of subject and location tagging had always been performed internally by user groups who happened to intersect with image content as part of the editorial production workflow. Unfortunately, this tagging was never a prioritised task among these groups, nor was it something they would have the resources to take on in a dedicated way. Consequently, the solution for completing this tagging came in the form of hiring a team of interns, culled largely from local library science graduate programmes, to perform the task.

Intern-staffed DAM projects had already been executed over the course of the rollout, centred on ingesting and tagging AEP's collection of closed issue content into the DAM. Employing local library science students to perform DAM work proved ideal, in that it provided AEP with the type of staff best situated to oversee sensitive and detail-oriented tagging work and additionally provided individuals from an academic community with a bridge into the professional DAM community. Students were granted an opportunity to get exposure to DAM work in a corporate setting and to gain footing within the larger DAM industry, creating a win-win situation for both AEP and the interns employed.

Given these past successes, it was decided to revisit employing intern help for the purpose of tagging DAM content with subject and location metadata. Three to four intern roles were created and staffed on a rolling basis. The tagging project was then structured so that each intern was assigned an issue to tag at its close, applying subject and location tags to all content (published and unpublished) associated with the issue. If an intern finished tagging an issue's content before

the next one closed, she/he would work on tagging older issue content already archived in the DAM. If an issue was particularly large, a second intern could be assigned help complete that issue's tagging. One year into this tagging project, 73 issues representing approximately 205,000 images and spanning over two years of magazines have been subject and location tagged.

The success of this project cannot be understated. Just a few months into its execution, end-user feedback started to trickle in along the lines of how amazing the DAM tagging was and, in turn, how useful the DAM was in meeting end users' content acquisition needs. The DAM was now able to serve up a deeply penetrable image library, where users could easily search for whatever topically relevant content they needed and then reference its publication and rights metadata as needed. With this third layer of subject and location metadata in place, the DAM system was truly able to meet end users' needs for self-driven research and image acquisition.

FINAL LESSONS: THE BEAST MUST BE WATCHED AND FED

The keywording challenge shone a light on two final lessons of AEP's DAM implementation: (1) administering a DAM system requires ongoing time and resources; and (2) the costs of those must be continually monitored. AEP relies on a combination of automation and manual metadata entry from several teams to meet new metadata requirements. This spreads the work among several teams, but a final check-and-grooming is needed to maintain data integrity and a dedicated DAM administration team is essential for this. That same team can be tasked with important auditing of

additional pockets of system use, from workflow compliance to the patterns of end users' asset acquisitions. The ongoing need for such a team should be anticipated from the early stages of planning any new DAM implementation. Managing this expectation with executive sponsors is one of the most critical responsibilities of a DAM programme lead, making clear the need to continually monitor return on investment.

Calculating cost per asset (ie time spent entering and grooming metadata) against costs saved (ie user's self-serve and subsequent reuse of assets held in the DAM) is absolutely essential to maintaining the value of any DAM system. The beast must be fed and a good DAM team will make sure that their enterprise is aware of the costs and especially the benefits of that investment.

Throughout all of the challenges of the system implementation, the team returned again and again to three touchstones: (1) a deep knowledge of affected end-user teams and their workflows; (2) a deep knowledge of the DAM system; and (3) the core enterprise functions the DAM system was meant to fulfil. With each challenge, the team had to decide whether to change the implementation road map or plough through as planned. The team's knowledge of the workflows and system enabled it to know the options as each decision was faced. Continually revisiting the core implementation goals guided the team in making the best choices for getting where it needed to go. It knew what to hold on to, what to let go of and how both could be done. Relying on these tools, by balancing collaboration and flexibility with an unflagging awareness of what AEP needed from the new system, the team was well served and able to make possible the successful implementation of AEP's DAM system.