Digital Asset Management
The Art of Archiving

by Teri Ross

As the industry evolves into technology driven businesses, an increasing number of companies are reaching a critical pain threshold in needing to control and manage their vast amounts of digital media assets. Technically speaking, a digital asset is any form of media that has been turned into a binary source. Digital assets, which for textile mills include everything from artwork, logos and photos to PowerPoint presentations, text documents and even e-mail, are proving to be valuable assets in terms of both productivity and company valuation. However, an asset is only an asset when you can find it, or you know that you have it in the first place.

The statistics tell a convincing story. According to GISTICS research, an average of $8,200 per person per year is spent on file management activities which include searching, verification, organization, back-up and security. Creative professionals spend an average of 1 out of every 10 hours of their time on file management. Searches alone account for a full third of that time!

According to Canto Software, developers of asset management software with more than 120,000 licensed seats worldwide, the average media user manages over 7,000 files distributed over a variety of storage mediums. The average creative person looks for a media file 83 times a week and fails to find it 35% of the time. Their research shows that digital asset management solutions will drop that figure to 5%.

Digital asset management (DAM) saves not just time, but money. Research indicates that the ROI on DAM is between 8:1 to 14:1. Where do the savings come from, you ask? Labor reduction is a primary contribution, allowing employees to spend less time locating assets and more time working on current projects. Re-purposing is another key benefit. The ability to find and research existing work facilitates the reuse of valuable creative assets from previous projects. A by-product of this benefit is faster development. The ability to take advantage of work performed on prior projects will reduce turnaround time. And last, but not least, workflow efficiency — DAM enforces a consistent workflow.

There are additional benefits which, though difficult to quantify, contribute substantially to the value of DAM. The process insures that only approved brand elements are used and are used in the proper context. The process automates the workflow, with the ability to keep track of version or routing the asset to its next destination. DAM helps to build relationships by supporting the ability to share assets over an extranet with clients and suppliers. In addition, with the ability to allow clients or other departments to observe creative works in progress, DAM fosters communication and collaboration.

While the term DAM implies its use for strictly computer generated artwork, a growing number of textile mills and product manufacturers are finding DAM applications an ideal tool for cataloging the years and years of hand drawn artwork they have purchased as a part of each new development season. These companies have begun scanning or photographing these assets and building a database that not only makes it easy to find and use purchased assets, but provides a valuable tool for insurance valuation.

The Spectrum of Digital Asset Management (DAM) Applications

A Digital Asset Management application is simply a tool for organizing digital media assets for storage and retrieval. When searching for a digital asset management system, the first thing to identify is your objective. What solutions should it provide to what problems? Do you simply want to find media content on demand? Create collaborative creative environments? Systematize efficient workflow? Manage rights and permissions complete with automated tracking and accounting? Implement full-blown electronic commerce? Let the priority of one or more of these goals be your guiding principle in sorting through the facts and marketing hype.

The marketplace offers a broad range of solutions, ranging from individual workstations to enterprise-wide solutions.
Desktop solutions represent the simplest type of DAM. They serve the needs of individual users using relatively small collections of content. This model can be to a handful of stations in a low-security file-sharing network and sometimes even to larger studios, if one person is managing one type of media asset, such as design files. While desktop solutions allow for descriptions and keyword searches, they typically only catalog thumbnails and references to the actual files, as opposed to the files themselves.

A collaborative solution is the likely choice if your objective is sharing work-in-progress and finished media among a tightly knit group of co-workers. The content itself can be stored on a central server or across individual workstations - including offline storage, such as CD-ROMs and tape cartridges. The more sophisticated offerings include annotation capabilities and strong communications support for efficiently transferring files between remote users.

Process-oriented solutions focus on workflow, orbiting around a centralized database of project management information that allows a producer to assign, prioritize, and track a project's progress across the entire production team. These systems track the history of what has happened to a file, including edits, conversions, and sign-offs. Given that workflow varies greatly across different types of enterprises, process-centric solutions are often tailored to the needs of specific vertical markets.

Industry-centric solutions extend the sharing of an enterprise's media assets to suppliers, contractors, and other partners. Such systems include high-level security that allows the primary enterprise to work with multiple parties without commingling proprietary assets.

Merchant-centric solutions for e-commerce enable an enterprise to serve a high volume of online customers who will browse and purchase media assets. Merchant-centric systems routinely process secure financial transactions, drive order fulfillment processes, interface with inventory systems, and report to accounting systems that can manage things like royalty payments to represented parties.

Some businesses find that one vendor can handle all of their needs, while others implement multiple systems according to the disparate needs of various departments. In the latter case, the use of an open system architecture can allow these multiple systems to act on one central repository of data.

**Media Catalogs v. Asset Repositories**

DAM applications are characterized by architectural differences. The playing field can be subdivided into two basic categories, media catalogs and asset repositories.

The primary characteristic of media catalogs is the utilization of proxies, such as thumbnails, in an indexed database that can be quickly searched by keyword. The actual source files are left untouched and under control of the operating system. The benefits of media catalogs include low cost, ease of installation and administration, and scalability across multiple divisions of an enterprise.

Since media catalogs do not actually manage the content itself, anyone with system access can typically view, change, move, or delete any content element. This usually precludes such features as check-in/check-out of content, rights management, and automatic versioning (the latest version of a print, for example). Media catalogs can also become sluggish with very large catalogs, especially if distributed across multiple servers or geographic locations.

In asset repositories the content itself is physically stored inside a secure database. This results in a host of benefits, including security levels, replication, referential integrity, and centralized data management. Also included is the comfort of full hierarchical storage management and disaster recovery.

Solutions based on the asset repository model are ideal when systematizing studios with industrial workflow, managing rights and permissions (such as the intellectual property of either your company or a third party), and structuring global access by employees, contractors, suppliers, partners, and customers.

This centralization of all assets into a single or distributed storehouse for safekeeping requires significantly higher performance hardware such as high-end UNIX servers, formidable online storage, and very high-speed networks.
According to a report in New Media Magazine, it also demands a capital investment 10 to 50 times that associated with media catalogs, as well as a commensurately higher level of system administration.

**Off-the-shelf or Custom?**

Another important question to be answered is how much technical expertise is required in the installation and maintenance of a DAM solution. Much like CAD systems, the selection ranges from totally integrated off-the-shelf packages to custom solutions. Since the best-integrated application suites are built around process knowledge, they are ideal for business models centered on methodologies well established within a given industry. Such solutions are often easy enough to install that they can be set up by end users.

The middle ground is populated by higher-level prebuilt components, enabling a business to utilize their more unique business knowledge in configuring a partially customized application. While the orchestration of prebuilt components will require modest knowledge of systems integration, this genre represents an excellent vehicle for creating a uniquely branded service.

On the high end of the spectrum are universal server databases and search engines that enable systems integrators to assemble the best of breed for their unique needs. Each consists of a self-contained module automating one business function or the activities of a single employee. This toolkit approach definitely requires expertise in complex system integration.

**Planning For Electronic Archiving**

One of the most important decision points in implementing DAM is also one of the most frequently overlooked: Who are your users and how do they work? Their technical level, their comfort with existing platforms and networks, as well as their current workflow will all be major factors in the success, or failure, of a new system. Champions and evangelists within the various departments of an enterprise are often critical to the success of this kind of new technology.

Once the personnel and technical issues are addressed, workflow will define the process. In most cases, applications dictating workflow should be avoided. Instead, efficiencies should come from the automation of proven workflow tasks. Of course, emulating poor workflow will only let your staff be inefficient more quickly.

Having already identified the goals of your DAM system, step number two in the planning stage is to draw a flowchart of your current imaging and storage processes. Identify what you like or don't like about your current workflow, and map out the recommended changes. This step should include participation from any and all employees involved in the process, as they will all be affected by any changes that are made.

The next step is to create the attributes and keywords that will be supported by the database (See Sample Descriptive Label exhibit below — courtesy of Dee Dee Davis, Springs Industries). Attributes include categories such as business unit, type of asset, design family, ground effect, geometry, design elements, scale, layout, technique or style, etc. Within each of these categories, your users can identify keywords they might use when looking for a particular type of artwork, such as floral, plaid, stripe, directional, impressionist, etc. Dee Dee Davis, former CAD archivist and digital imaging specialist for Culp and now a CAD designer for Springs Industries, advises that all departments needing to use the archived files be included in this developmental stage, as classifications used by the design department are often different from classifications and descriptions needed by other departments in the company.
Now you are ready for your system design plan, which will identify how equipment pieces will need to be connected to one another. How will non-digital artwork be digitized, what equipment does it require and who will do it? Who will administer the archiving and who will have access to it? What file formats need to be saved in order to support various departments? If you need a variety of formats for the re-purposing of the files, will this be done at the time of archiving or at a later date as needed? A map of the new workflow should identify who does what, when they do it and how they do it. (See Sample Archiving Workflow exhibit at bottom of page — courtesy of Dee Dee Davis, Springs Industries).

The final step in the planning process is to identify and develop the system standards that will identify workflow issues such as file names, versions, folders, directories and servers. Failure to do so will simply undermine the system and make it difficult to locate the "correct" version of a file.

Digitizing Traditional Artwork and Fabrics

While archiving digitally generated artwork is a fairly straightforward process, archiving the vast libraries of fabric samples and traditional hand drawn artwork that has been collected for many years (if not decades) provides for some unique challenges and opportunities. Not only will digitizing artwork make it easier to find, use and re-purpose, but archiving your artwork can also prove to be very valuable for an insurance claim in the event of fire or theft.

As it is with the implementation of a DAM system, you must determine your objectives before digitizing any artwork. There are four quality standards that need to be considered for the use of your digital files: 1) Product development and pre-publishing reference, 2) Intra-company report enhancement, 3) Business to business for sales and marketing and 4) Direct to consumer e-commerce. Your goals will establish the quality standards, resolution and file formats for the digital files.

While there are several capture devices to consider for use in digitizing artwork, including digital cameras, flat-bed scanners and drum scanners, most experts agree that a high-end digital camera is the best solution for the broad range of texture, repeat size and color challenges that textiles present. While it is possible to capture artwork on a conventional camera and have the slides or negatives converted to digital data, this method is not recommended, as there are too many variables in the conversion process that can cause degradation of the image in both quality and
color. In addition, digital photography is both less expensive and faster than conventional photography, which requires a series of time consuming and costly steps to get to the digital file format.

Another important advantage to using photography over scanning is the ability to control the lighting with the use of a camera. Scanners use only one light source that "scan" the entire image, often missing nuances of special textures, yarns, finishes, and colors. The use of a camera will allow you to use multiple lighting sources that can be modified to highlight the features of a variety of fabrics. In controlling the light source, you can also minimize the effect of the fabric construction while trying to capture just the print. While there are software applications such as Pointcarré from Monarch that will allow you to remove the fabric construction from a print, this is a step that can be avoided by obtaining a proper capture to start.

Digital cameras range in price from $500 to $25,000. The less expensive cameras are not as color accurate, capture less data and are prone to "digital noise" that will create unacceptable artifacts and mottled solid colors. The best-of breed for low end digital cameras according to Richard Lerner, president of RSL Digital in NYC who has over 25 years of photography experience, is the new Nikon Coolpix (list price $995, street price of $850-$950). This camera includes many attributes of the high-end cameras, including a flash sync for setting off studio strobes, excellent color contrast and balance controls, and it works well in a number of automatic modes.

While you may be able to obtain a desired image quality from a low end digital camera, you should review your workflow and processing time when evaluating cameras. "Using a low end camera is like trying to pass a lot of data on a floppy disk," states Randy Parker, President of Digital Images in Research Triangle Park, NC, a firm that specializes in the photography and archiving of textiles. "You are constantly performing ‘sneaker net’ and are required to run back and forth between the camera, which has limited storage capacity, and the computer’s hard drive. High-end digital cameras have a direct SCSI connection to the computer that will eliminate the need for repetitive data transfers. If you are capturing a lot of images, this capability alone will more than offset the cost of the more expensive camera.

The digital files will range in size from 2 MB to 25MB or more depending on the physical size and intended use of the artwork. Resolution requirements range from 72 dots per inch (dpi) for images to be viewed only on a computer screen, 150-300 dpi for printing to fabrics (contingent on the type of fabric and amount of color coverage) and 300 dpi for printing to press for sales and marketing materials. The rule of thumb is to capture a minimum of the same number of dots per inch as the line screen of the output device, up to a maximum of twice the line screen. Again, it is very important to know your intended output or goals before beginning the archiving process.

Digital Asset Management is not just about having the proper equipment, software and workflow, but about having qualified talent to produce and manage the archiving process. Digital photography is an art in the same way that computer aided design is an art. Buying the requisite tools does not compensate for the skillset needed to produce quality archives. Experts advise that professional photographers be used to create the digital files.

**Budget Considerations**

Budget will play an important role in your decision regarding appropriate hardware, storage, backup, and communications infrastructure. DAM software solutions come in many different packages, from a "per seat" basis for client licenses, to server solutions that allow unlimited access via Web browsers.

If paying per seat, it's important to understand the user mix. Licenses that dedicate one installation per seat can be more costly compared to those allowing a given number of clients to be online at once.

More critical than the price tag alone is a projection of cost savings, ROI and growth catalyst. While archiving, many companies have discovered they were archiving duplicate artwork purchased by different divisions of the company, a practice which could be avoided through proper asset management. The time savings, as outlined in part one, is an obvious ROI. In many businesses, especially media-intensive ones, an investment in the optimal digital asset management solution can even kick profitability into high gear and be critical to sustaining a competitive advantage. Remember, besides your employees, your library of product samples and references are one of your company’s most
valuable assets.

Conclusion

Evaluating digital asset management solutions that best suit your specific needs requires that you keep your primary goals in mind. The reality is that no one provider offers a solution ideal for every company, and it is entirely possible that no single vendor's solution will solve all of your needs. As Henry Norris, former technology solutions manager for Nine Rivers Technology which developed Culp’s custom DAM system states, "Digital asset management is an evolution. It’s a constant work in progress."

All of which means that you may find yourself not only integrating components from several providers but your needs will grow and change as you use the system. Common sense dictates the selection of a solution that is extensible, scalable, offered by an established provider and built on open standards.

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