



Reader ROI

- Content management systems solutions are generally designed for content aggregators, distributors, and retailers.
- Digital asset management systems are created for content creators and studios.
- Content management systems do not store and pull master source elements from a repository and create derivatives as do digital asset management systems.
- Enhanced content management systems integrate with third-party hardware/software applications to support simple content transformation and editing needs.

Understanding Content Management and Digital Asset Management Functionality

Overview

Content management systems (CMS) and digital asset management systems (DAM) are used to manage, publish, and distribute content. However, there are clear differences between the use of the technologies and the way in which content is handled by each.

Content management systems (CMS) solutions are generally designed for content aggregators, distributors, and retailers. CMS systems usually support content including graphic images, video and audio files, metadata, XML files, HTML, and documents.

Digital asset management (DAM) solutions are created for content creators and studios. The primary purpose of a DAM system is to re-purpose high-resolution digital master source files, creating a wide variety of outputs from stored files.

Each solution helps manage the content workflow. However, the workflows involve different tasks. While the systems involve very different functionality, they can be used in conjunction with one another and, in some cases, businesses will require both.

CMS content lifecycle

Content management solutions involve three main phases—creation, preparation, and delivery.

During the creation phase, content is acquired, aggregated, and ingested into the system. The CMS assigns a unique asset identification number when the asset is ingested for tracking purposes

Phase two involves enhancing and editing files and assuring their quality. During this phase, meta-data is assigned to that specific asset (e.g., publishing targets, date created, and other metadata field attributes such as price, rating, synopsis, title, episode name, status, contract start/end dates, etc.). Some CMS solutions have quality assurance (QA) subsystems that enable business users to view content or “assets” before publishing it to an audience, and to “activate” or “deactivate” assets from a specific publishing group.

The delivery phase involves the packaging, publishing, and distribution of content. The packaging step determines where an asset resides within the production environment. For example, the movie *Spider-Man* is programmed to appear in the “movies” category as well as in the “action” subcategory for a specified period of time. The publishing step prepares the asset(s) for deployment to production server(s) or a commercial platform, typically through an integrated CDN. Most CMS publishing components include the processes for distributing files to end-point servers; however, file distribution is sometimes a separate automated or manual process as a subsystem to the CMS.

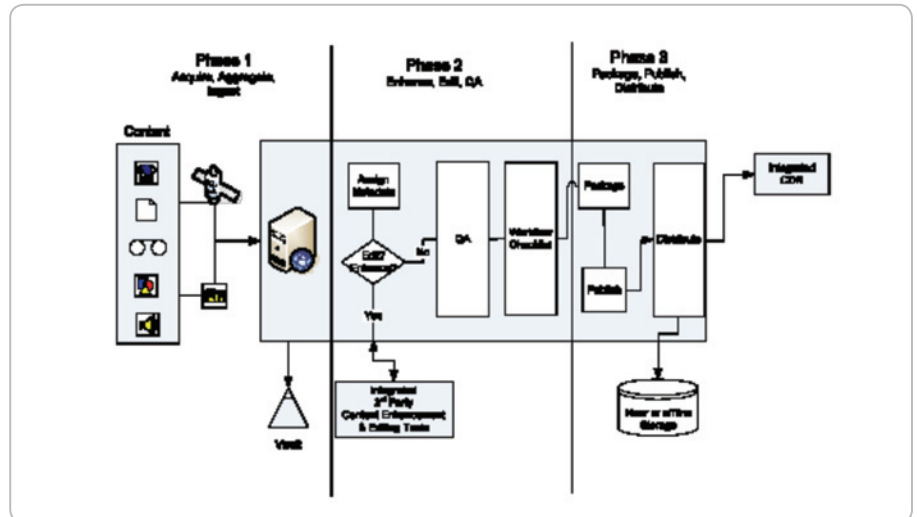
In most cases, CMS systems provide the business user with the ability to generate ad-hoc reports based on any and all metadata search criteria, e.g., what content was published, where, and when.

CMS workflow gives the business user an opportunity to check off a series of steps—from inception to completion—that are required to publish content. These may include submit, edit, approve, publish, and archive (phase 2). Some solutions allow users to access the workflow section and check off the tasks that have been completed to ensure quality and bring the content closer to its publication.

Note: Web CMS solutions provide business users the tools to easily manage and publish content to web servers with little to no programming (e.g., HTML) language skills.

Figure 1 provides a graphic illustration of the CMS workflow.

Figure 1: Content Management Workflow



Integrated third-party enhancements for CMS solutions

Enhanced content management systems integrate with third-party hardware/software applications to support simple content transformation and editing needs. This is where the line between CMS and DAM becomes grey. Unlike DAM systems, CMS systems do not store content and pull the master source elements from a repository and create derivatives. If two separate files need to be concatenated, or if video needs to be edited, third-party software can be integrated in order to support this task.

For example, the end of a local car commercial is required to showcase local dealership information. The local regions would do some non-linear editing work using packaged software; audio is usually done on third-party tools; and graphics are completed in standard third-party applications. The CMS user would have access to these tools via a web-based interface.

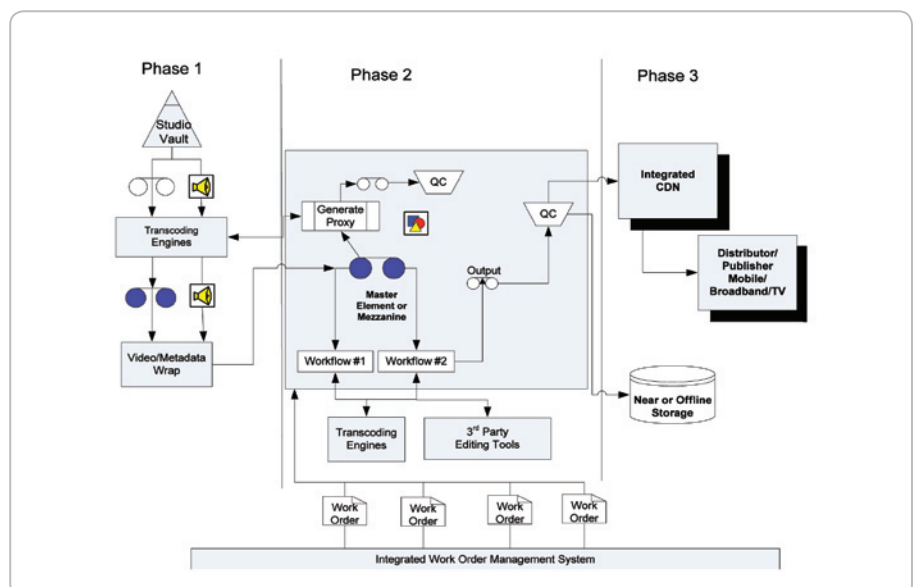
Digital asset management system functionality

DAM systems use the latest in transcoding technologies and editing tools to re-purpose master elements, or “mezzanine” versions of master elements, to any number of possible output specifications via automated workflows.

DAM is an effective solution for streamlining workflows, automating labor-intensive processes, and lowering operational costs for content creators and studios. DAM solutions involve three phases—master element ingestion, content transformation, and file distribution.

Figure 2 provides an illustration of these phases.

Figure 2: DAM Lifecycle Overview



Content creation using DAM

The first phase of the DAM cycle prepares content for management and exchange.

Some DAM systems employ tools that “wrap” metadata with video and/or audio files in formats known as Material eXchange Format (MXF) or Advanced Authoring Format (AAF). This multimedia format enables content creators to easily exchange digital media and metadata across platforms and between systems and applications along with essence analyzers that can determine key video/audio parameters from the file (e.g., file structure, formats, frame rates, audio channels, aspect ratios, location, time, date, and version number). This “wrapping” of metadata and video/audio occurs before content is ingested into the repository. This step simplifies project management, saves time, and preserves valuable metadata, which, in the past, was often lost when media was transferred between applications.

Content transformation

DAM services typically employ the best-of-breed third-party applications in order to support content creation and transformation. These applications access the repository and are integrated into a specific workflow for automation. Some examples of common workflows in DAM systems include disassembling, linking, and compounding assets; on-the-fly requirements such as re-sizing or color conversions; transcoding assets to conform to output specifications; image recognition tools to acquire specified screen shots or frame grabs; text indexing; and watermarking assets.

Advanced DAM systems can support audio layover workflows that allow a content creator or studio to automatically separate audio from a video file and then mix a foreign language audio track into the asset. This process is also known as audio conforming.

During the content transformation phase, low-resolution proxies are created from every master source element in the system. This gives business users the ability to quickly and easily view assets in the system instead of streaming or downloading heavy master source files. This step occurs as soon as the master element is ingested into the system.

DAM supports a number of output specifications including: mobile, cable VOD specs, PPV, broadband and online Electronic Sell Thru (EST), commercial airline, and Captive Audience Network (CAN).

Each output must conform to video/audio parameters based on the specification that is executed in the automated workflow. These include: specification name and specification version number, wrapper, video encoding rate, video format, audio encoding rate, audio format, channels, VBR/CBR, aspect ratios, and frame rate.

File distribution

The DAM system is ideally integrated with a CDN for file distribution. Each “customer” to receive files from the DAM system should be updated with a reconciled purchase order. The file distribution process should be automated and activated as soon as the file has completed all of its required preparation steps.

Integrated work order management systems

An integrated third-party work order management system can streamline processes for work orders to be executed through the automated workflows built into DAM. For example, a studio representative can enter a work order into the work order management system for Rocky VI to be delivered to HBO in Spanish.

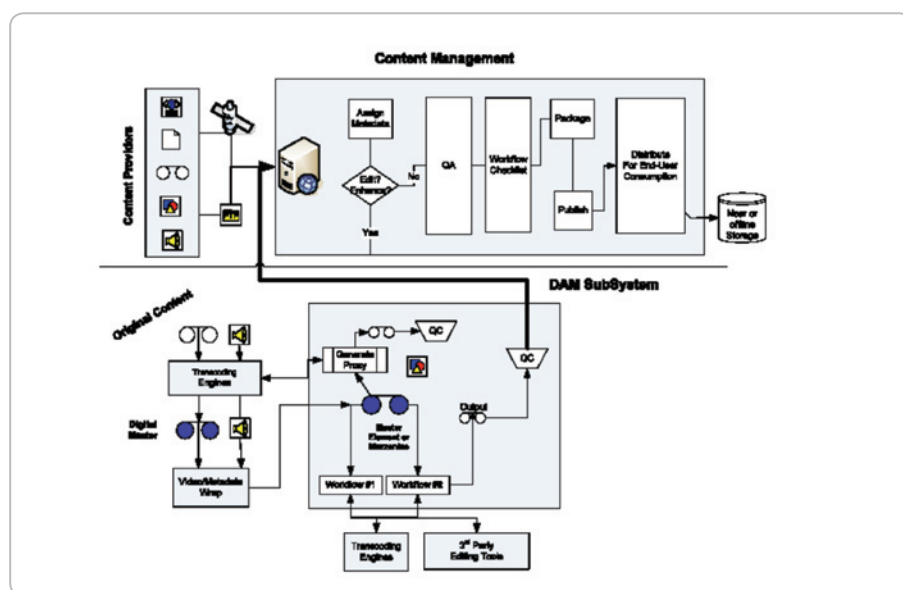
This work order will be tracked through each step of the DAM process as it is created from the master source file and prepared with the Spanish tracks in an automated fashion. As each step in the process is complete, the work order management system will update the representative with the status. Once the title is generated per the work order entered by the representative, the asset is cued for distribution.

CMS with DAM

In some cases, DAM solutions are implemented as a subsystem to the CMS solution. Some distributors not only distribute content from networks, studios, and content aggregators, but also create their own content. We now live in a world where all three screens—TV, broadband, and mobile—require the back-office systems to more effectively and efficiently prepare, package, and distribute all content in an automated, streamlined, and high-quality process.

As shown in Figure 3, the CMS manages the content ingestion, packaging, publishing, and distribution to the consumer while the DAM system supports the original content and content transformation tasks. Once the steps pertaining to the original content (and/or content requiring manipulation) are complete in DAM, the CMS takes over and manages the content derivatives from that point forward.

Figure 3: CMS with DAM Subsystem Overview



Conclusion/summary

Determining the right CMS vendor begins with understanding the current and future state requirements of your business. Many vendors specialize in particular functional areas and a good match can come only after a thorough requirements engineering and vendor evaluation process.



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