

# **Managing Physical and Digital Assets for Unified Distribution Workflows**

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## **Abstract**

Production companies and other content creators and providers are increasingly utilizing file-based media ("digital media") from acquisition through postproduction, distribution, and delivery. This trend has affected how media assets are managed and associated production, postproduction, and distribution workflows. As the industry transforms from physical to digital assets combined with technological advancements, opportunities have opened up to generate incremental revenues and service new distribution channels with content customization and asset repurposing. However, physical assets will be around for a long time as huge libraries have been built over many decades. In this session, the opportunities and challenges of integrated physical and digital asset management will be discussed; digital asset management versus digital asset workflow; advantages of a digital asset workflow; process automation opportunities, such as consolidating libraries and metadata; automating manual processes; integrating digital asset management systems into workflow, and integrating external workflows. Also included will be a high level overview of what major film studios, television networks, and international broadcasters, are doing to attain a more integrated, unified workflow approach towards physical and digital assets, and consequently, uniform automation of business processes for media content acquisition, postproduction work, and content delivery.

## Introduction

The media and entertainment industry is all about content creation, management, distribution, and delivery. The technological enablement of automated content distribution and delivery has rapidly transformed this world into a highly automated and integrated workflow environment. Studios can delivery content now through satellite in an economical viable way to content distributors, and we can watch content on demand through our cable and telecom connection on a TV and PC with mobile being the next frontier.

All groups in this media content supply chain are increasingly utilizing and dependent on file-based media (“digital media”) from acquisition through postproduction to delivery content. The explosive expansion of new distribution channels puts tremendous strain on all parties involved in the food chain. This trend has affected how they manage media assets and associated production, postproduction, and distribution workflows. It has also dictated technological agility to adapt to the next generation requirements. For those slow to respond or enable, whole new industries are created. Think of iTunes or YouTube.

As the industry transforms from physical to digital assets, it also opens up opportunities to generate incremental revenues and service new distribution channels with content customization and asset repurposing. It means quicker time to market through electronic delivery while increasing productivity and elevating ROI for media assets that likely were already been created before. In fact over 90% of what we watch today is in fact repurposed content.

However, physical assets will be around for a long time as huge libraries have been built over many decades. Often it makes financial sense to only digitize the most popular titles that are in high demand while maintaining the majority of the assets as physical media. There is also a preservation and recovery consideration since physical assets are a proven industry standard with a well-developed global infrastructure, and original content can always be mastered into digital assets for general or distribution channel specific purposes.

## Integrated Physical and Digital Asset Management

Most physical and digital media assets, including their metadata, have a tendency to be managed separately by disparate library applications, one for the physical assets, one for the digital assets, and perhaps another separate database for metadata. This makes it difficult to create transparent access and

federated management of physical and file based media assets – even though from a business workflow standpoint there is little difference. From a management and delivery perspective, it does not matter if an asset is in physical media or digital media, as long as it can be found, prepared, and delivered to its appropriate consumption channel.

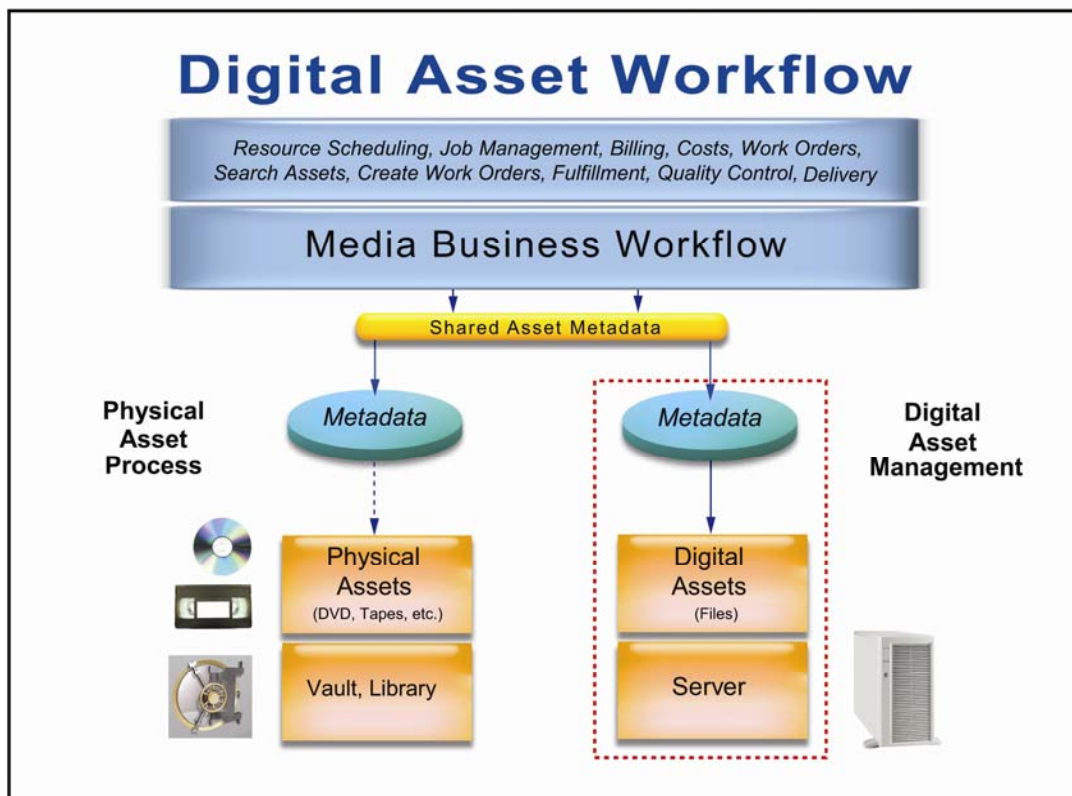
Therefore content aggregators and content providers have a need to automate their workflows via enhanced workflow and process management tools; integrate workflow solutions with autonomous and semi-autonomous production and postproduction systems; and integrate workflow solutions with digital asset management (DAM) and media asset management (MAM) systems.

## **Digital Asset Management versus Digital Asset Workflow**

The most common response to handling digital media has been to deploy a digital asset management (DAM) system. Such DAM systems provide a central repository for digital files and can archive, search, and retrieve digital content. However, DAM systems have a tendency to be digital-asset centric and support digital assets only. Plus they require to be integrated with the core business workflow systems that drive the work, projects, any internal billing and/or external charges. While they are increasingly integrated with core systems through APIs for data sharing, they contain minimal business workflow integration.

In talking with major television networks, film studios, international broadcasters, and some of the largest postproduction houses, the consensus is that DAM systems have great capabilities for storing and maintaining digital assets, but fall short in handling the integration with the daily business workflows and project logic. What they need are business process capabilities that can extend from physical assets to digital assets – or so called digital asset workflows (DAW).

A DAW system provides the integration between physical and digital asset management systems through transaction-based business workflow processes. Therefore, DAM systems and DAW systems complement each other, where the workflow and orders drive the job or project and can work with or retrieve assets from the DAM storage system.



## Digital Asset Workflows

A DAW system automates almost the entire process from the start of the project to getting content ready for delivery. It not only allows the integration of digital and physical asset management systems but also ties the related business logic and workflow into the business operations. In a unified media business workflow, the asset metadata is shared for the physical and digital asset processes – something everyone wants, but only a few have been able to effectively attain.

Features of a digital asset workflow include a central repository for digital and physical assets; global Web-client ordering system for all physical and digital assets; global media ordering system for all physical and digital assets; and a digital ordering system that manages, controls and monitors the entire process, as well as archives and delivers physical and digital assets. Advantages include:

- Integration with any DAM system as the digital media repository.
- Integration of workflow processes via Web services across complementary applications from multiple vendors.

- Minimal complexity for execution and automation of the steps from order to job/project and media content delivery.
- Transparency and control over digital workflow steps (such as, ingest, transcode, and watermark).
- Flexible transition from physical to digital assets and manual to automated processes – an end-to-end workflow process.
- Workflows agnostic to solution providers, thereby allowing media companies to maximize their current investments and automate their business workflows.

Deploying a DAW system leads to improved operations efficiencies, better asset utilization, elevated productivity, more timely delivery of media content, and better utilization of equipment and facilities.

## Process Automation Opportunities

Being able to manage physical and digital asset libraries and related metadata from one unified workflow application is a major leap forward, and opens up significant opportunities for process automation, such as:

- **Consolidating libraries and metadata.** International broadcasters have traditionally been challenged with both acquisition of content and the management of enormous asset libraries. One of the largest broadcasters in the world has several million titles and is now going through a major project to consolidate physical libraries and related metadata for all these titles in a single company application. This forms the basis for further integration between the physical and digital asset workflows.
- **Automating manual processes.** Many organizations maintain media content schedules, digital files locations, and other work elements in a rudimentary manner. A major TV network has maintained its digital assets and non-linear business workflows with in-house developed software tools and manual efforts. Recognizing the synergy between digital and physical media, it is in the process of migrating its digital asset operations and on-air operations to be included in its core business workflow systems, which already handle the physical assets and linear business operations today.
- **Integrating DAM systems into workflow.** Most of the major studios have automated or are streamlining their media content business operations, which are centered on physical assets and business workflow, while deploying DAM systems for digital media. Starting in 2007 they are on a path to integrate their disparate DAM systems with a federated business workflow and asset management application. This means that processes that involve either physical or digital assets are driven through a unified media workflow.

• **Integrating External workflows.** With more unified workflows and asset management coming about, the next frontier is to automate and integrate with content providers. For example, one major studio has already tied its asset libraries and business workflows to its key vendors and not only has visibility into the vendors' libraries but also can initiate work orders and projects from within its system for these content providers.

## In Summary

The bottom line is that the world has been changing and technology is finally starting to catch up with how film studios, broadcasters and other content creators and content providers would like their business to work: with an integrated, unified workflow approach towards physical and digital assets and uniform automation of business processes for media content acquisition, postproduction work, and content delivery. Such an agile infrastructure provides the ultimate foundation for timely delivery of media content to ever-changing existing and new revenue opportunities and distribution channels.

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